Earth and Atmospheric Sciences

Departmental Response to the Academic Planning Committee

10/10/2025

Earth and Atmospheric Sciences

Response to the Proposed Elimination

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1. Introduction: UNL should retain the Department of Earth and Atmospheric Sciences

The Department of Earth and Atmospheric Sciences (EAS) is not just part of UNL's history - it is essential to its future. The Department of Earth and Atmospheric Sciences (EAS) at the University of Nebraska–Lincoln has a legacy of nearly 150 years of scientific, research, and education leadership central to the land-grant mission. Meteorology was introduced as a discipline at UNL in 1876 and Geology in 1883. Ties between Geology and the University of Nebraska State Museum's paleontology research are also deep-rooted in NU history. The Regents approved the Meteorology–Climatology program in 1981, and the disciplines were unified in 1998 (renamed Department of Earth and Atmospheric Sciences in 2010). These enduring legacies underpin UNL's contributions to Nebraska's energy and critical mineral resources, environmental and climate resilience, water resources, natural hazards, natural history, and environmental stewardship directly supporting economy, agriculture, and human health and safety.

EAS is integral to the Natural Sciences research and education portfolio expected of an R1 university. Among peer Big Ten and public AAU institutions, Earth Science is consistently represented as a major academic unit integrating planetary, environmental, and/or atmospheric sciences; the University of Virginia is the sole exception, where Earth Science is embedded within Environmental Sciences. These peer institutions uniformly offer undergraduate, M.S., and Ph.D. degrees in the field. **Eliminating Earth Science at UNL would be unprecedented in the Big Ten and would raise concerns relative to national R1/AAU norms. This is particularly significant as UNL seeks to strengthen its AAU profile. Moreover, elimination will also impact other Big Ten institutions,** specifically the University of Wisconsin-Madison's geology program and field camp training (see letter Appendix 10.3.5A) demonstrating a negative impact beyond UNL and Nebraska.

UNL's meteorology-climatology program is a strategic differentiator. While not every Big Ten or AAU institution maintains a stand-alone atmospheric science program, EAS's meteorology and climatology strengths (e.g., fieldwork experience, training for operational careers, and undergraduate research participation) make UNL distinctive and enhances competitiveness for talent, federal funding, industry partnerships, and statewide service (e.g., hydrogeological modelling, weather forecasting, early hazard warning, drought and flood readiness).

Earth and Atmospheric Sciences is foundational to modern natural science and workforce development. The department spans essential sub-disciplines: **geochemistry, mineralogy, geohydrology, geoscience education, structural geology, geophysics,**

sedimentology, paleontology, paleoclimatology, meteorology and climatology, and hydroclimatology. These disciplines and courses support research and education in other UNL units including the Department of Civil and Environmental Engineering (see letters Appendix 10.3.4A & 10.3.4B), School of Biological Sciences (see letter Appendix 10.3.4C), Anthropology (see letter Appendix 10.3.4D), as well as Teaching, Learning and Teacher Education (see letter Appendix 10.3.4G). EAS has provided scientific breadth to the UNL. The disaggregation or elimination of EAS would weaken core curricula, diminish undergraduate and graduate workforce development and training capacity, and impair UNL's ability to deliver research and service with direct statewide impact to achieve the land grant mission. The supportive academic culture focused on excellence not only on research and education, but also professional development allows EAS students to enter the workforce as positive contributors to Nebraska and find successful and rewarding careers. Compelling letters from a prospective student (see letter Appendix 10.3.2A), current students (see letter Appendix 10.3.2B & C), and alumni spanning several decades (see letter Appendix 10.3.2D-F) demonstrate our academic program's strong reputation and enduring legacy.

The summary information presented to support elimination of EAS as an underperforming department, with inadequate numbers of PhD students and substantial overlap with offerings in other units on campus, is false and/or misleading.

EAS is not an underperforming department. The SRI metric reported by Academic Analytics for EAS is misleading because it uses a faculty count higher than the department's current size as the denominator, artificially lowering the calculated output. Additional issues come to light when comparing the research output for our atmospheric science program with that of other institutions. For instance, in Academic Analytics, the atmospheric science program at UNL is compared with that of the University of Pittsburgh, which is identified as a comparable AAU institution, despite the fact that Pittsburgh has no faculty conducting research in this field. Yet their SRI exceeds that of EAS, underscoring how metrics applied outside their disciplinary context produce distorted results. In reality, EAS fosters a culture of excellence that has produced nationally recognized scholars, including a faculty member recently elected to the **National Academy of Sciences, Dr. Sherilyn Fritz**. Although this prestigious election occurred after the 2024 academic review period, it underscores the department's significant impact and leadership in the field.

EAS was also penalized for a high attrition rate in the Meteorology-Climatology program; however, our attrition rate aligns with national trends with Clark (2020) reporting attrition rates higher than 40% that is largely due to the heavy math and physics

requirements not anticipated by many new students. As such, it is necessary to compare this metric to other reported disciplinary graduation rates. The 2024 EAS Academic Program Review, led by an external team of Big Ten peers, found that the department is performing on par with comparable institutions and recommended further investment (Appendix 10.2 and letter Appendix 10.3.1). Strengthening (not dismantling) Nebraska's capacity in the Earth and Atmospheric Sciences was a sentiment expressed by others within UNL (see letters Appendix 10.3.4E & K) and beyond (see letters Appendix 10.3.3B, D, 10.3.4L, 10.3.5H).

The EAS has a strong graduate program. In the 5-year interval that was highlighted, EAS graduated 5.2 Master's students per research FTE and 1.04 PhD students per research FTE. In the past 10 years, EAS has lost 11 faculty from an initial ~24 total FTE due to retirements and departures. EAS hired only 4 faculty in that time, bringing the current department to ~17 FTE. Junior members of the department are still building their PhD pipelines; 3 of the new faculty (~18% of the current department) were hired in 2019 or later, meaning that there was little or no opportunity to take PhD students from recruitment to graduation over the period reviewed. Together, this results in the lower PhD graduates in EAS over this time period. When comparing with other units at UNL, including those identified as the top 25 performing units, EAS graduated more PhD students than 9 of those programs. We also note that within our disciplines the MS provides robust career opportunities in various sectors; so many students earn their MS as the pathway to their preferred career in the workforce with growing demand and do not consider the PhD which is reflected in the higher number of MS degrees in EAS.

The EAS generates revenue. The total state-aided budget for EAS teaching, research and service FTE in 2024 was $2,609,640. Total realizable base tuition in 2024 ($2,538,565) plus the average F&A over the past 5 years (2020-2024) was $2,755,500, resulting in a positive net revenue of nearly $150,000 per year. Elimination of EAS would ***not*** save UNL money, but would further increase UNL's structural deficit. In addition to generating revenue the strong alumni advisory board and donors have continued to support experiential learning field experiences, outreach, student research, and infrastructure improvements, minimizing costs to UNL while directly lowering or eliminating the cost of student attendance and participation.

The EAS is distinctive. Finally, qualitative metrics report that there is substantial overlap with EAS faculty and course offerings in other units. This is an incorrect perception and reflects a misunderstanding of the distinct and essential role that EAS plays at UNL. The School of Natural Resources within the IANR, acknowledges that the faculty and majors including environmental science are not duplicative and do not fulfill requirements of the

geology or meteorology-climatology major (see letter Appendix 10.3.4F). The EAS has the only undergraduate and graduate geology programs at UNL that prepare students to take the Professional Geologist exam, which is required for many positions (see letter Appendix 10.3.3F). While there are scientists with faculty appointments in the Conservation Survey Division (Nebraska's equivalent to a state geological survey office) and the State Climate Office that have expertise in geology and meteorology, these faculty do not have appointments that support the education and training mission that would prepare a skilled workforce in the state of Nebraska (see letter Appendix 10.3.4H). Their current appointments cannot cover the instructional needs and the research breadth of EAS. In fact, programs and centers in IANR, as well as elsewhere on campus, rely on EAS to provide instruction and expertise in both meteorology and geology (see supporting letters from faculty in Civil and Environmental Engineering and the School of Biological Sciences faculty in Appendix 10.3.4A, B, C). Moreover, the Environmental and Sustainability Studies program promotes its Biosphere and Earth Systems option, yet it relies – in part – on EAS courses to fulfill its Earth Systems and Climate requirements, further impairing the success of yet another undergraduate major at UNL. In addition to our excellent undergraduate geology program, EAS has the *only* graduate program in Nebraska for geology, and the *only* program of any kind for meteorology in the state. These programs cannot be replicated by the proposed transfer of a few faculty to other units (see letters Appendix 10.3.4F & H. Furthermore, Nebraska needs pathways to support the workforce that requires licensure (geology) (see letters Appendix 10.3.3B, C, F, 10.3.5D) and certification (meteorology) (see letters Appendix 10.3.5C & E, 10.3.2F).

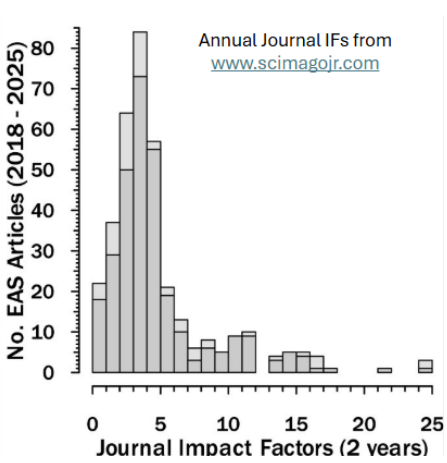
It is no coincidence that many of the geoscience faculty and researchers on East Campus are graduates of EAS (see letter Appendix 10.3.4E). EAS has thriving graduate research and training programs that are outside the scope of any other unit and prepare students to successfully enter the workforce in Nebraska. The success of this research relies on recruiting students who require coursework and mentorship that only EAS can provide. Through our own analysis, along with letters of support, testimonies, and concrete examples, we demonstrate EAS research, teaching, and service activities that support the EAS as a high-performing department and a strong contributor to the university's *Odyssey to the Extraordinary* and attainment of an AAU membership. The elimination of EAS would result in significant academic, research, and reputational damage to UNL, the NU system, and the state of Nebraska. Furthermore, elimination of an earth science degree at the B.S., M.S., and Ph.D. levels impairs the disciplinary breadth expected of R1, AAU, and Big10 institutions.

2. Excellence in Research and Discovery

2.1 Leaders in the Field

EAS faculty and students have been and continue to be leaders in their fields. This is exemplified through external funding. Over the last 10 years, EAS faculty have been involved in nearly **$90 million of externally supported research, over $45 million of which came to UNL.** This record of funding productivity highlights that both peers and funding agencies recognize the innovative nature and importance of EAS faculty research. Faculty and students have authored articles appearing in high impact journals: in the last 5 years, EAS faculty have authored/co-authored 10 articles in *Nature* journals, 2 articles in the *Proceedings of the National Academy of Sciences*, 1 article in *Science*, and 8 articles in the *Bulletin of the American Meteorological Society* (the flagship journal of the AMS). Publication in these high-impact journals illustrates that EAS faculty and students conduct important research that is of broad interest to the scientific community and meets the rigorous standards set by these prestigious journals.

EAS articles are often published in upper-tier journals within our disciplines (Fig. 1A), and on average (including the past 3 years) have increased the impact factors of the journals in which they are published (Fig. 1B). Also, over the past 10 years, EAS faculty have received an average of 237 citations per year (Fig. 2). This value (Fig. 2) is based solely on the 16 EAS faculty who were in tenured or tenure-track positions at the end of 2024, and thus reflects trends among the current department members who would be lost if the proposed elimination was carried out. The increase in citation rate (Fig. 2) reflects that the average citation rates for many of our younger faculty are rapidly increasing. This is indicative of what the department might look like over the next 5-10 years - and the trajectory is quite positive.



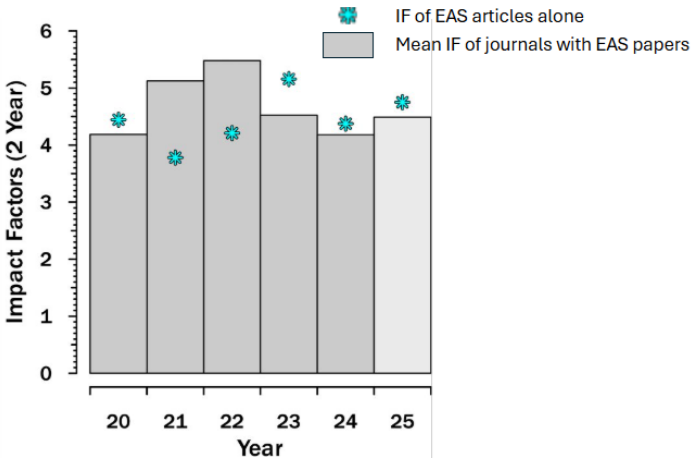


Figure 1: Impact Factors (IF) of EAS publications. A) IF of journals and books including papers published by EAS faculty from 2020 – 2024 (2025 in lighter color). The IF for 2020 is the sum of citations to papers in that journal/book published in 2018 and 2019. Yearly IF for journals obtained from www.scimagojr.com; the IF for unique edited volumes obtained by collecting citation numbers for each paper in that volume after 2 years from scholar.google.com/. B) The "Impact Factor" for the collection of EAS publications from 2020 – 2024 (asterisks) represents the IF of a hypothetical journal composed solely of EAS articles. For example, for 2024 this equals the average number of citations that EAS articles published in 2022 and 2023 accumulated by the end of 2023. Because journal IFs for 2025 will not be available until 2026, we include the expected IF through Sept. 2025 given average IFs from 2020-2024 with projected IFs assuming the same citation rates over the last 3 months of 2025.

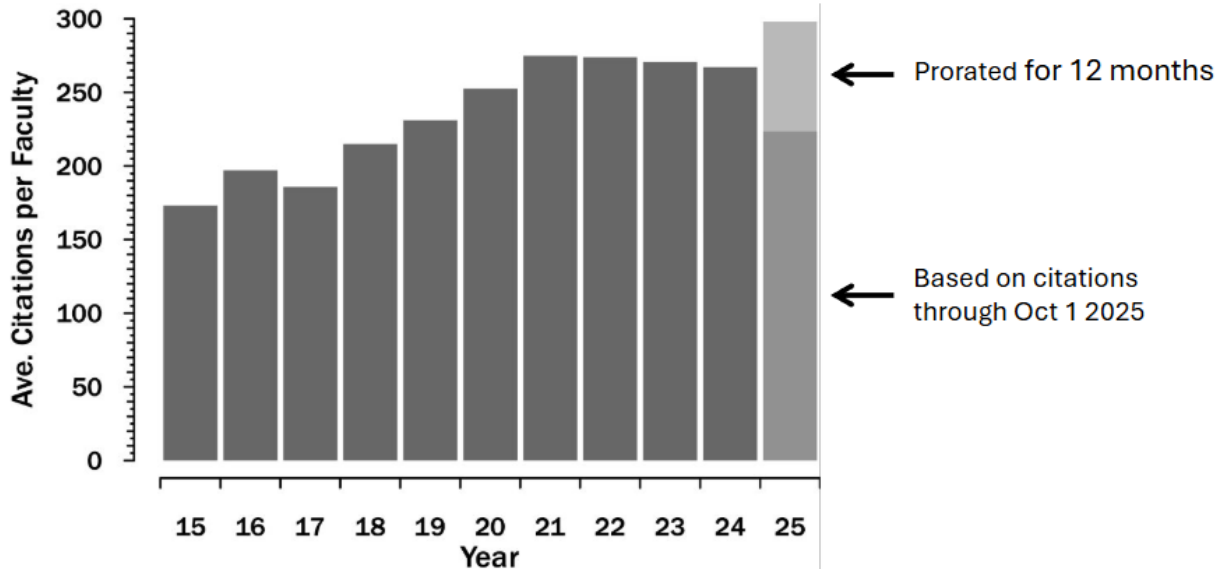


Figure 2: Citations per faculty member from 2015 – 2024. Based on faculty members currently present in EAS. Source: scholar.google.com/

Though some of the accomplishments cited above are reflected in the UNL metrics used for program ranking of research leadership, many key accomplishments were not captured. For example, journal impact factor is not considered in Academic Analytics metrics. Moreover, the SRI used to compare EAS to peer AAU institutions is based on Academic Analytics measures of funding that exclude co-PI funding from agencies such as NOAA or NASA, excludes all funding from Nebraska Department of Transportation, Nebraska Department of Education, and the US Geological Survey. In total, this would exclude $5.3M in grant funding to UNL from the EAS record. EAS faculty often serve as senior personnel for large interdisciplinary projects, which is also not considered though it helps to achieve project success and secures funding to UNL. UNL has encouraged interdisciplinary research as most recently demonstrated by the Grand Challenges.

Application of metrics that solely focus on PI funding degrade the collaborative interdisciplinary culture that has been cultivated through the research office over the past few decades.

The 2024 EAS Academic Program Review (APR) team, composed of Dr. Ankur Desai (Professor and Chair, Dept. of Atmospheric and Oceanic Sciences, University of Wisconsin-Madison), Dr. Kristie Franz (Professor and Chair, Dept. of the Earth, Atmosphere, Climate, Iowa State University), and Dr. Wenlu Zhu (Professor, Dept. of Geology, University of Maryland-College Park), concluded the following regarding researchers in EAS: "the review committee found dedicated researchers and faculty working on leading topics in the discipline supported by extramural funding, capably recruiting and mentoring graduate and undergraduate researchers, and publishing high impact papers in leading journals for our discipline" (see Appendix 10.2). They noted that their assessment contrasted sharply with that of the CAS Dean's office, which was informed largely by Academic Analytics metrics, who found EAS research to be "subpar, ranking it at the lower end of productivity and impact metrics compared to other departments in the college." Instead, the review team noted that "EAS surpasses the median in several key areas, including the number of faculty with federal grants, publication counts, total articles published, and citation rates." They reaffirmed this stance in a recent letter in support of retaining EAS: "Over the past decade, EAS' rate of major production, course offerings, and research productivity in the discipline are on par with its peers at other Research I institutions" (Appendix 10.3.1).

EAS faculty success has been recently honored through recognition of both lifetime achievements and emerging talents. Dr. Sherilyn Fritz was recently elected to membership in the National Academy of Sciences. Dr. Fritz is one of only 5 National Academy members in UNL's history, one of only two active UNL National Academy faculty members, and the only female. Dr. Peter Wagner was awarded the Gilbert Harris Award for Career Contributions to Systematics in Paleontology. Dr. David Harwood recently had two fossil diatoms named in his honor: a new genus *Davidharwoodia* and a new species *Triceratium harwoodii*. Junior faculty in EAS have been recognized as leaders in their fields with 2 recent NSF CAREER awards (Drs. Filina and Elkins). Moreover, this year Dr. Liang Chen was awarded the UNL Harold & Esther Edgerton Junior Faculty Award for creative research, extraordinary teaching abilities, and academic promise, while Dr. Irina Filina received the prestigious Fulbright award for 2025-2026.

EAS faculty play leading roles in interdisciplinary campus-wide and state-wide initiatives. Dr. Clint Rowe led the *Great Plains Community Climate Resilience Institute*, a UNL Grand Challenge planning grant (2023) that united 29 faculty and staff across campus to address climate adaptation in the region. Similarly, Drs. David Harwood and Mindi Searls led the

Ice Coring and Education (ICE) Silo Grand Challenge team (2022), engaging over 30 collaborators across six UNL colleges to connect polar research with education and outreach. Dr. Karrie Weber led the recent submission of an NSF EPSCoR Research Incubators for STEM-Excellence with an interdisciplinary team of 24 across the state of Nebraska aimed at building a subsurface digital twin to predict groundwater quality with Dr. Erin Haacker leading the development of the AI enabled subsurface digital twin replicating Nebraska's groundwater hydrogeology.

EAS faculty leadership extends beyond the university as well. Dr. Cara Burberry currently serves as President of the Nebraska Geological Society, while alumni and faculty continue to shape statewide understanding of climate and geologic change. The *Nebraska Climate Report,* led by EAS alumna Dr. Deborah Bathke with contributions from Dr. Ross Dixon and his Ph.D. student, Emmanuel Audu, offers a comprehensive assessment of regional climate trends. EAS faculty also contribute to public scholarship, such as the award-winning book *Nebraska Sandhills*, co-edited by Dr. Sheri Fritz and featuring chapters by Drs. Fritz, Loope, Haacker, and Houston.

2.2 National and International Research Leadership

Faculty in EAS are advancing scientific discovery in Earth Systems Science on a national and global scale (Fig. 3). EAS exemplifies the *Extraordinary Research and Creative Activity* pillar through its leadership in nationally and globally significant, federally funded projects that reflect NU's vision for building cross-disciplinary collaborations and international partnerships.

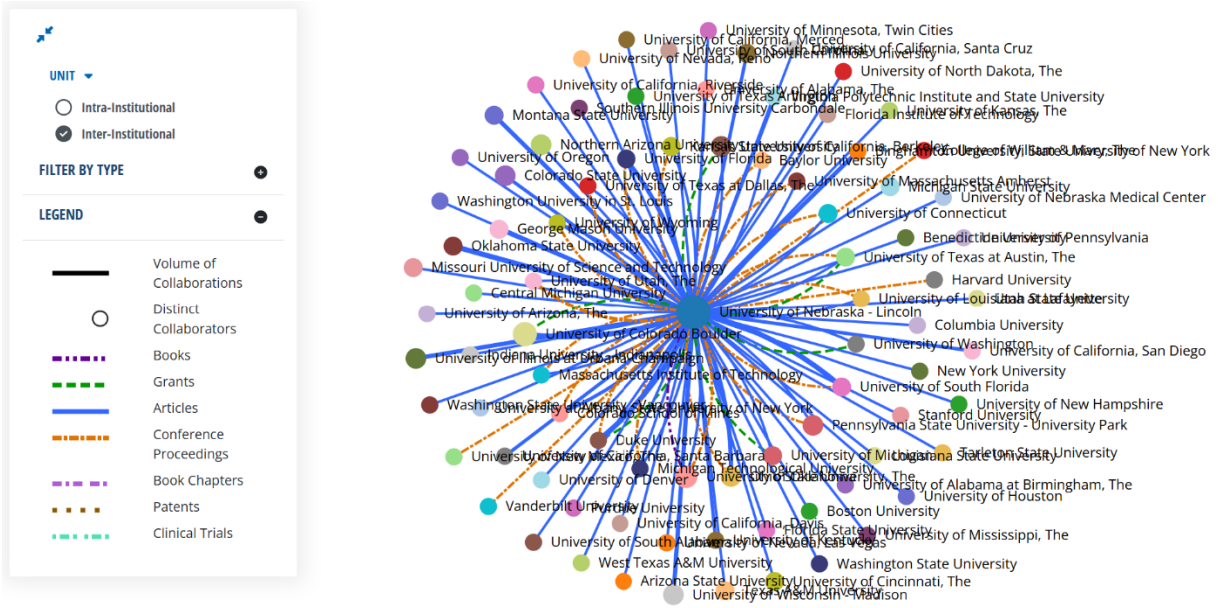


Figure 3: National and international collaborators with EAS.

Antarctic Drilling Projects: Dr. David Harwood sustains one of UNL's longest-running international research programs extending back to the early 1970s. In 2003, Harwood established UNL's Antarctic science management office for the acclaimed international ANDRILL Project (2003 – 2012) that drilled the two deepest sediment cores in Antarctica (both >1,100 m) to reveal the Antarctic Ice Sheet's past and future response to elevated atmospheric greenhouse gases and planetary warming. This highly successful project was featured in the NOVA documentary *Secrets Beneath the Ice*, a collaboration between EAS, NET, and UNSM. In 2010 and 2018 UNL's clean access hot-water drilling system and the drilling team managed by Harwood and Jim McManis (College of Engineering) provided access for an international science team to explore Whillans and Mercer subglacial lakes located more than 1,000 meters beneath the West Antarctic Ice Sheet, the first to be sampled. Such complex international projects take decades of planning and international agreements before funding is released. The short (2020-2024) window of EAS assessment falls post-Covid when national Antarctic programs were catching up. Antarctic hot water drilling efforts resulted in awards from NSF-sourced funds (2015-2022) to UNL in excess of $3.0M, and recently $1.2M from the International Continental Drilling Program (ICDP) to the SWAIS2C Project (Sensitivity of the West Antarctic Ice Sheet to 2 degrees C of warming). The latter project involving scientists from 13 nations is currently active, with drilling activities in West Antarctica during 2023 and 2024, continuing in the next months into sediments beneath the Crary Ice Rise. Harwood's other active drilling project will take place in early 2026 on the other side of Antarctic on Seymour Island, a project proposed in 2020, but only now scheduled due to Covid delays in US Antarctic icebreaker availability. UNL's long and storied legacy of Antarctic drilling, which involved numerous UNL students, faculty, educators, and engineers who travelled to Antarctica, has been successfully housed within the vibrant academic environment of EAS.

Trans-Amazon Drilling Project: The Trans-Amazon Drilling Project (TADP) is a major international research project to investigate how the incomparable biodiversity of the Amazon rainforest evolved through geologic time and how uplift of the Andes, changes in the configuration of the Amazon River system, and climatic variation influenced the composition and biodiversity of the Amazon forests. Dr. Sheri Fritz was one of three PIs to design the project over a decade ago, and for the last 7 years she has been the lead project coordinator. The project is funded by the International Continental Drilling Program (ICDP), the US National Science Foundation (NSF), the Smithsonian, and the Sao Paulo Research Foundation (FAPESP) and includes more than 50 PIs from 9 different countries. The team recently recovered drill-core records from two sites in the Brazilian Amazon that span at

least 15 million years of the history of the Amazon forest, and a journal article on preliminary results was submitted in September of 2025 with Fritz as the lead author.

Targeted Observation by Radars and UAS of Supercells (TORUS) was an NSF- and NOAA-supported field campaign led by Dr. Adam Houston and involving more than 200 scientists and engineers (many of whom were students) across 4 US universities and the NOAA National Severe Storms Laboratory. TORUS aimed to improve fundamental understanding of supercell thunderstorms through data collected on supercell thunderstorms between 2019 and 2023 using radars, lidars, mobile mesonets, uncrewed aircraft systems, manned aircraft, radiosondes, and swarmsondes.

Integrated Ocean Drilling Program (IODP): EAS faculty and students have been involved in multiple IODP expeditions all over the globe ranging from the North Atlantic Ocean to Antarctica. EAS faculty also provide relevant leadership: Drs. Cara Burberry and Irina Filina have been involved in the IODP Science Evaluation Panels for many years, and Dr. Burberry served as a member of several IODP Steering Committees and was part of the IODP Science Framework Writing Team.

World Climate Research Program: Dr. Ross Dixon is an expert in African climate and is a member of the World Climate Research Program's (WCRP) Regional Research Group on African Monsoons. He often works with international colleagues and students and organizes sessions at national and international meetings on regional climate projections.

Regional Climate Change Consortium: Dr. Clint Rowe co-led a Regional Climate Change Consortium, funded by the Inter-American Development Bank. This project included a series of five workshops with more than 15 participants from 11 countries across Latin America and the Caribbean as well as the development of a web portal to allow visualization of dynamically downscaled climate model simulations for these regions.

Early Eocene Climatic Optimum (EECO): Dr. Secord is the lead PI on a research project funded by NSF studying paleoenvironmental change during the EECO. The project is a collaborative effort with researchers from Brown University, Hunter College, and Brooklyn College. The EECO was the warmest period in Earth history over the last 70 million years, when tropical climate prevailed in the midlatitudes. Climate change during the EECO is correlated with significant changes in the taxonomic composition and diversity of mammalian faunas, including large decreases in diversity when climate cooled and became drier. To date, this project has resulted in major outreach efforts to rural parts of Nebraska and surrounding states and two MS projects.

2.3 Research that Strengthens Nebraska

For over a century, faculty and students in EAS have advanced research that directly benefits the people, economy, and environment of Nebraska. Our work addresses the state's most urgent challenges in energy security, water management, climate resilience, extreme weather, and environmental health, while preparing the skilled workforce needed to sustain them. Eliminating EAS would erase decades of expertise that Nebraskans rely on to understand, manage, and protect their land, resources, and citizens (see letters Appendix 10.3.4 A, I, K, & 10.3.3 F), and address pressing societal challenges—from severe weather and drought to energy and mineral resources (see letters Appendix 10.3.3A). EAS collaborates across UNL on these efforts (Fig. 4).

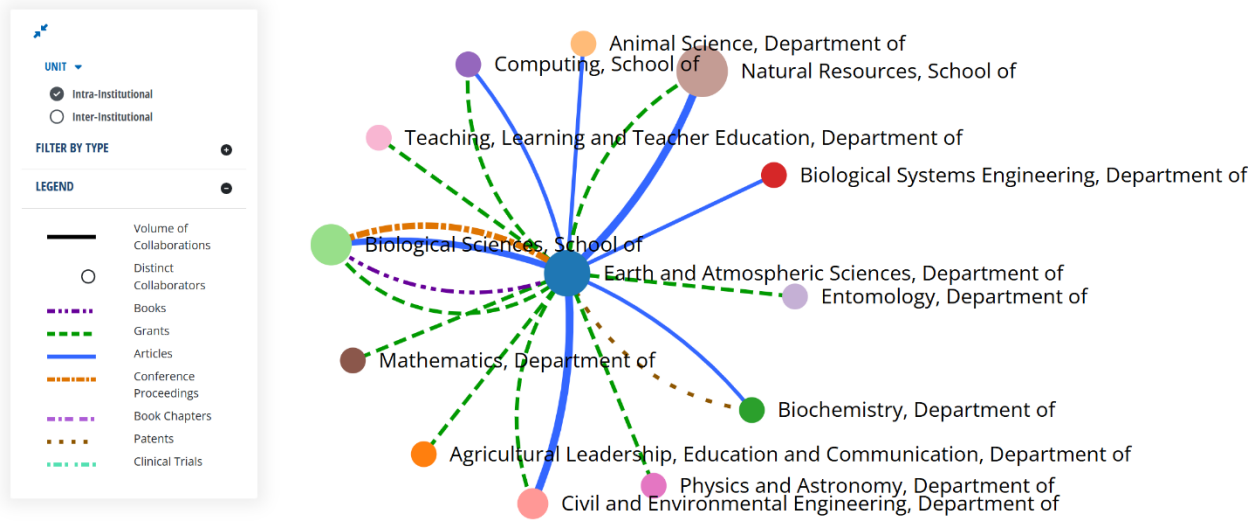


Figure 4: Collaborations between EAS and other UNL units.

2.3.1 Powering Nebraska's Energy Future

EAS scientists are positioning Nebraska as a leader in the clean-energy transition. With support from the National Science Foundation and private industry, Drs. Karrie Weber and Cara Burberry are pioneering research on natural hydrogen, a newly recognized carbon-free energy source with promising reservoirs beneath southeastern Nebraska. Dr. Burberry also leads projects focused on carbon sequestration, advancing methods to safely store carbon dioxide in the subsurface as part of national efforts to reduce greenhouse gas emissions. Together, their innovative work connects Nebraska geology to national energy priorities.

At the same time, the University of Nebraska Isotope and Trace Element (UNITE) Geochemistry Lab, the only clean lab of its kind in the state, gives students hands-on

experience analyzing critical minerals tied to the Elk Creek carbonatite. This deposit is the largest known niobium source in the United States and contains significant concentrations of scandium, titanium, and rare earth elements. The Elk Creek carbonatite has an estimated pre-tax economic value of approximately $2.8 billion (Batty, 2022). This comes at a time where there is a projected global demand growth of 8% annually for rare earth elements, underscoring its national and regional importance (International Energy Agency, 2024). Together, these efforts link Nebraska's natural resource legacy to its energy future, driving innovation and workforce development across the state.

2.3.2 Safeguarding Water and Agriculture

Nebraska's prosperity depends on water, and EAS provides the expertise that keeps this resource secure. Dr. Erin Haacker's group develops advanced groundwater models for the High Plains Aquifer, helping local and state agencies manage this shared resource responsibly.

Dr. Karrie Weber's research examines the intersection of geology, chemistry, and biology in Nebraska's aquifers, demonstrating how microbial processes and nitrate contamination can drive uranium mobilization in shallow alluvial systems. In collaboration with Hastings Utilities, Weber's laboratory shared research geochemical data enabling the design and implementation of a managed aquifer groundwater recharge project that advanced sustainable water management practices in Nebraska.

Climate scientist Dr. Liang Chen leads several collaborative projects, in partnership with the College of Engineering, UNMC, and IANR, focusing on irrigation, drought, precipitation, and heat risk, directly benefiting rural communities in Nebraska and beyond. Chen also works with the Nebraska Department of Transportation, providing weather information and decision-support tools that help keep people in Nebraska safe during winter storms.

2.3.3 Protecting Communities from Extreme Weather and a Changing Climate

Nebraska faces some of the nation's most extreme weather, and EAS research keeps communities safer. Dr. Matthew Van Den Broeke conducts the only research in Nebraska focused on improving severe weather warnings using radar observations, which has had a positive impact on severe weather warning statistics in Nebraska and across the U.S.

Dr. Ross Dixon contributes to the *Nebraska Climate Report* and is leading a NOAA-funded project to improve the representation of rain-on-snow events in numerical models, such as the major March 2019 event that flooded much of eastern Nebraska. This work enhances

regional climate projections and provides vital guidance for infrastructure planning, and flood mitigation. Together, these projects equip Nebraska with the data, technology, and expertise needed to build resilience in a changing climate.

2.3.4 Advancing Environmental Stewardship

Near-surface geophysical surveys are conducted in Nebraska by Dr. Irina Filina's geophysics team to map subsurface features and geological structures for hydrogeological and environmental applications. For example, a graduate student in her group recently used a portable gravimeter to measure seasonal water variations in a local aquifer related to agricultural irrigation.

Dr. Sheri Fritz's long-term studies of Nebraska lakes provide critical baselines for understanding harmful algal blooms and water quality trends that affect ecosystems and recreation. Fritz and her colleagues have developed a comprehensive database of water-quality variables for both natural and manmade lakes across the state, which serves as a valuable resource on pressing issues, such as harmful algal blooms, mercury contamination, and wildlife habitat.

These examples represent just a snapshot of EAS research in action. Together, they illustrate a department whose impact is woven into the fabric of Nebraska's economy, environment, and safety, and whose elimination would leave a gap no other unit can fill.

2.3.5 Sustaining Nebraska's Fossil Vertebrate Legacy

A close connection between Geology faculty and UN State Museum (UNSM) paleontologists have roots near the origin of both units. Rich collections of Great Plains fossil vertebrates attract undergraduate and graduate students interested in paleontology research to the University of Nebraska-Lincoln. Two EAS faculty Drs. Secord and Wagner are curators of vertebrate and invertebrate paleontology, respectively. These collections were built largely by geoscientists who founded and chaired the Dept. of Geology. New material is continually added and prepared by curators and UNSM staff, most of which were trained in EAS. The UNSM collections, which include Ashfall Fossil Beds State Park, offer unique opportunities for students to study the rich history of ancient life in Nebraska and how that life has changed in response to changing climate and changing environments. These deep-time archives are being used in faculty and student research to study the events that led to today's modern world, including the spread of grasslands in the Midwest. Studying the responses of life to intervals of climate change in the past provides information about possible responses in the future. If EAS is eliminated, the

unique opportunities now afforded to UNL students will be lost and students with interests in paleontology will be forced to seek out programs in other states. (see letters in Appendix 10.3.4.M and 10.3.5.G)

3. Educational Excellence and Innovation

3.1 Excellence in Teaching

The Department of Earth and Atmospheric Sciences (EAS) has a long-standing record of excellence in teaching. Faculty regularly receive recognition for their contributions in the classroom and beyond. Several have been selected as Teaching Academy Fellows, an honor granted to only three CAS faculty each year. These fellows serve multi-year terms working collaboratively on projects aligned with the university's strategic plan. Within EAS, recent fellows include Dawn Kopacz (2023–2026) and David Harwood (2019–2022). David and Dawn have contributed to pandemic instructional support, as well as teaching symposia on topics such as data-informed teaching reflections and empathetic teaching. These efforts to transform learning environments, support faculty excellence, and create a vibrant academic culture align with the Extraordinary Teaching & Learning and Culture & Environment pillars. Faculty have also earned some of the university's highest honors for teaching, including the CAS Distinguished Teaching Award (Van Den Broeke, 2021; Elkins, 2021; Harwood, 2019). Student voices affirm this commitment; one letter of support praised EAS faculty for "pouring their souls into college kids to make sure we had an understanding and an exceptional education."

3.2 Educational Innovation and Research

EAS faculty advance educational innovation through discipline-based education research (DBER) and a sustained commitment to teaching excellence that reflects the goals of the university's *Odyssey to the Extraordinary* strategic plan. Their work exemplifies the *Supporting Faculty Success* pillar, which emphasizes stimulating innovation among educators, creating a culture of extraordinary scholarship grounded in teaching excellence, and implementing new and transformative instructional strategies.

EAS faculty embody these ideals through both research and practice. Dr. Dawn Kopacz is a national leader in Atmospheric Science Education Research (ASER) and was instrumental in establishing it as a distinct scholarly field. Her multi-institutional studies focus on the use of active learning, student retention, and science communication in the atmospheric sciences. She has led both international (2023) and national (2025) NSF-funded workshops designed to broaden participation and build capacity for education research in atmospheric science, with particular emphasis on studying learning and identity

development in field campaign settings. Her leadership in this emerging field has been recognized through an invitation to present at the 2023 Advisory Board Meeting for the Education, Engagement & Early-Career Development (EdEC) group at the National Center for Atmospheric Research (NCAR). She also organized and manages a Special Collection on Atmospheric Science Education Research (ASER) for the American Meteorological Society – special collections are reserved for highlighting papers on topics of current interest in atmospheric science.

At UNL, EAS faculty have cultivated collaboration across STEM education research communities. For example, Dr. Mindi Searls has facilitated the STEM Education Seminar since 2013, a long-running series that expands the reach of innovative teaching and learning strategies and connects DBER scholars from across the university, building cross-disciplinary partnerships that advance the *Extraordinary Partnerships & Engagement* pillar of the strategic plan.

Dr. Searls also contributes to national STEM education reform as Co-Principal Investigator on a current **$3M multi-institutional NSF project** that serves as a research and dissemination hub focused on community college transfer in STEM. This project investigates how two- and four-year colleges can develop and sustain co-equitable partnerships that better support low-income STEM scholars before and after transfer. The research examines the roles of advisors, faculty, student affairs professionals, and administrators in shaping effective transfer pathways. Findings are shared with researchers and practitioners nationwide to promote scalable practices that strengthen STEM transfer student success.

Through these efforts, EAS faculty not only strengthen geoscience education but also advance the university's broader mission to promote evidence-based teaching and sustain a culture of continual innovation.

3.3 Preparing and Supporting K-12 Teachers

The Department of Earth and Atmospheric Sciences (EAS) plays a vital role in supporting K–12 education in Nebraska. Currently, only two institutions in the state, Chadron State College and UNL, offer the Earth and Space Science (ESS) endorsement for secondary science education majors. Without courses taught by EAS, this pathway would no longer be possible in Nebraska, leaving the state without the capacity to adequately prepare future ESS teachers. Additionally, the general science endorsement for secondary education requires coursework offered by EAS. Removing these pathways to science teacher certification would come at a time when school districts across the state are

reporting a shortage of science teachers (see letter Appendix 10.3.4G). Over the last 5 years 187 science teacher positions went unfilled (Nebraska Department of Education, n.d.). Removing the options for broad field and ESS certification in UNL's Department of Teaching, Learning, and Teacher Education (TLTE) would exacerbate this situation.

The need for ESS expertise is well documented. In Nebraska, only 7% of teachers assigned to teach ESS hold the proper endorsement (Lewis & Lu, 2017), despite ESS being a required component of Nebraska's Career and College Ready Science Standards. Without strong ESS preparation, teachers struggle to build earth science literacy among their students, which is essential for understanding environmental issues, disaster preparedness, and responsible resource management (Mayer, 2002). In addition, teachers report lower knowledge of geoscience careers compared to biology careers, limiting their ability to guide students toward opportunities in a field facing a critical workforce shortage (Sherman-Morris et al., 2013).

For decades, EAS faculty have responded to this need by leading professional development, mentoring teachers, and securing external funding to expand opportunities for K-12 science education. This work embodies the *Partnerships Across Nebraska* pillar of the *Odyssey to the Extraordinary* strategic plan, which emphasizes expanding K–12 collaborations to strengthen communities and advance the well-being of all Nebraskans. Over the past 10 years, EAS faculty have been PIs or co-PIs on more than **$4.9M in external grants dedicated to K–12 education**. With this support combined with generous alumni donations, our signature contributions include:

- **Graduate Courses for Teachers –** EAS faculty have developed and taught multiple graduate-level courses in geology, meteorology, and climate for in-service teachers, including the long-running *Methods in Geoscience Field Instruction* course, offered annually since 2004 as an offering in the Nebraska Science and Math Summer Institutes from CSMCE. This immersive, inquiry-based program integrates hands-on fieldwork with effective classroom strategies and has reached more than 230 Nebraska teachers. The course has been featured in the video *Rockin' the Big Red Van*, which aired on NET's *Nebraska Stories* (Seifferlein, 2014) and *Earth Magazine* (Naff, 2009) for its innovative approach to connecting teachers directly with the geologic processes they teach. The program's lasting influence is reflected in the words of one local high school science department chair:
  "I know many teachers who have gone through the three-week field course … and have learned so much and … impacted their hundreds and thousands of students… The hands-on and practical and influential content provided by the Earth and

Atmospheric Sciences Department is crucial to our teaching force and … our students all across the state of Nebraska and beyond."

- **Workshops and Conferences** – Since 2015, EAS faculty have led more than 10 workshops for high school teachers across the state, co-organized statewide summits such as the 2022 Nebraska Summit on Math & Science Education, and developed networks that strengthen teacher preparation and professional learning communities.
- **Recognition of Impact** – EAS faculty have been honored with awards, such as the Nebraska Association of Teachers of Science *Catalyst Award* (Harwood, 2020), the highest recognition for contributions to science education in the state. The importance of EAS' sustained work in science teacher professional development is also reflected well in letters of support from science educators across the state in response to this budget process (see letters Appendix 10.3.6).

The elimination of EAS would directly undermine Nebraska's ability to prepare qualified science teachers, jeopardize the state's compliance with its own science standards, and weaken efforts to build scientific literacy among the next generation. It would also diminish Nebraska's capacity to train teachers who can inspire students to pursue geoscience careers critical for addressing challenges in energy, water, natural hazards, and environmental sustainability.

4. Student Success and Experiential Learning

4.1 Recruiting and Supporting Future Scientists

Since 2015, the number of first year students in EAS has averaged 21 (across both majors; Fig. 5). This value has remained relatively flat over the last 20 years: the average size of the incoming class since 2022 has been 22. The two lowest recruiting classes occurred in 2023 and 2024: 13 in 2023 and 16 in 2024. This appeared to be driven by a decrease in recruitment of Met-Clim majors: the first-year classes of Met-Clim students in both 2023 and 2024 were composed of only 8 students. A rebound in 2025 (Fig. 5), projected to continue in 2026, is attributed to recent changes to our ability to recruit, described below.

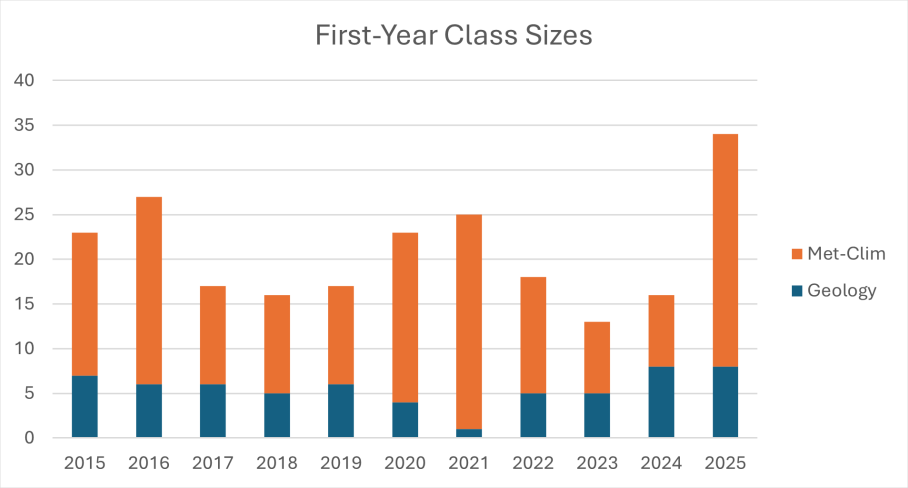


Figure 5: Number of first-year Meteorology-Climatology (orange) and Geology (blue) majors in EAS for 2015-2025.

Undergraduate student recruiting in EAS involves outreach events, summer camps for high school students, one-on-one meetings with students and their parents, and marketing of EAS successes. EAS faculty, students, and staff invest significant time into outreach events that communicate our research and expertise broadly across the state of Nebraska (e.g., Dinosaurs and Disasters, Women in Science).

Beyond outreach events, the single most important practice adopted by EAS in recruiting is one-on-one meetings with prospective students and their parents. Multiple students have emphasized the importance of this engagement in their decision to attend UNL; no other program they were considering did this.

Around 2021, EAS was no longer notified of scheduled visits from prospective students and their parents, effectively terminating this key mechanism for undergraduate student recruitment. This resulted in a decrease of first-time freshman in degree programs to the lowest levels in recent years (Fig. 5). EAS has collaborated with the CAS, this allowed our faculty to reimplement our established and successful methods for recruiting into the EAS undergraduate degree programs. Starting in 2024, when contact information on newly admitted students interested in our majors was released to the department, EAS faculty have also called every student admitted into our degree programs to congratulate them on their acceptance. The result is a record number of first-time freshman enrolling in EAS degree programs reaching its highest value (n = 34) in over 20 years (Fig. 5). Moreover, as of October 1, 2025, 31 first-time freshman have been admitted into EAS degree programs for the Fall of 2026 exceeding the number of admissions observed at the same time in 2024 (n

= 27), demonstrating that the EAS undergraduate enrollment appears likely to continue its upward trajectory.

To further promote the EAS and increase exposure to careers and the fields within the EAS outreach has been a central approach to increase advertising. Faculty and staff have intentionally worked with the university and the CAS Communications office in this effort. However, given the limited amount of staff available to actively engage with EAS faculty, staff, and students we recognized that we needed to establish a pipeline of outreach, engagement, and recruiting activities internally. EAS faculty unanimously approved the use of EAS foundation money to support this effort. This coordinator would work closely with staff in CAS's communication and recruitment team. Our 2024 APR team supported this proposal: "we endorse EAS' desire to directly support and hire an outreach staff position who would provide support for outreach events, department events, and communication of research outcomes." Our initial request for such an outreach and engagement staff member was made in early 2024 and was rejected. When the APR review team concurred on the importance of this position, the proposal was once again rejected. We hope to have the opportunity to work with the administration to remove obstacles to this effort.

Over the last 10 years, first-to-second year retention of undergraduates in EAS majors averaged 50.4%: retention numbers were higher for Geology majors (70.2%) than Meteorology-Climatology majors (45.6%). Multiple longitudinal analyses of student attrition in the Meteorology-Climatology major have revealed that the quantitative rigor of the prerequisite courses in the major (e.g., math and physics) was largely to blame. This is far from an indictment of the courses or these academic programs: prerequisite courses in math and physics are difficult for many students. It is also important to note that this attrition rate aligns with national trends in meteorology (Clark, 2020). Research has shown that a strong sense of belonging, particularly within one's discipline, is a key predictor of student persistence in STEM fields (Hansen et al., 2024). Informed by this evidence, the Meteorology-Climatology faculty developed a new course for students in their first semester, entitled Pathways to Success in Meteorology-Climatology (METR 101). The first offering of this course in Fall 2025 (under a temporary course ID) has 29 students enrolled and has just been approved by CAS as a required course in the major. These students have been highly engaged with the course, and many have expressed a strong interest in getting more deeply involved in related opportunities.

4.2 Extraordinary Learning Experiences

In alignment with the University's strategic plan and its commitment to *Extraordinary Learning Experiences and Student Success*, EAS provides students with immersive, hands-on opportunities that extend far beyond the classroom. Through fieldwork, research campaigns, and innovative teaching, students gain the technical, analytical, and professional skills essential for success in scientific and applied careers. These transformative experiences, often supported through alumni generosity and competitive grant funding, prepare students to think critically, work collaboratively, and solve complex, real-world problems.

Field-based courses form the cornerstone of experiential learning in geology:

- **Field Camp** – a six-week capstone experience in northern Utah provides students with intensive training in geologic mapping and interpretation as part of the Wasatch-Uinta Consortium. In a letter of support, the leaders of the Consortium stated that they "consistently found Nebraska students to be among the most hard-working and successful in our program" (Appendix 10.3.5F). This capstone course experience is fully funded by alumni donations, reducing financial barriers to student participation.
- The **Walker Trip,** an endowed 9–10 day camping trip across the western United States (CO, UT, NM) introduces freshmen and sophomores to the spectacular geology of the region. Funded entirely by a dedicated alumnus (see letter Appendix 10.3.8F), this early field experience inspires students to pursue advanced coursework and research.
- The **Schramm Course in Economic Geology**, another alumni-endowed international experience, blends classroom and international field learning for upper-level undergraduate and graduate students. Students have studied mineral resources in the Bahamas, UK, and Ireland, and will investigate geothermal energy systems in Iceland in 2026.

EAS students also participate in large-scale, externally funded atmospheric science campaigns.

- **TORUS (Targeted Observation by Radars and UAS of Supercells)**, led by Dr. Adam Houston, engaged 26 EAS students across three field seasons (2019, 2022, 2023) in data collection and storm analysis. Students described the experience as pivotal in shaping their scientific identities and inspiring graduate study.

- **Radar Meteorology deployment of mobile radar** – Since 2008, Dr. Houston has been supported by NSF to bring in a mobile (truck-borne) radar for the class (METR 463/863) to use for micro-research projects led by each student.
- **Numerical Modeling –** Students learn to operate the Weather Research and Forecasting (WRF) model and the Community Earth System Model (CESM) in high-performance computing environments at UNL and on Derecho (the 114th fastest supercomputer in the world) through support from NCAR.
- **Weather Data Collection, Analysis, and Interpretation** – Students collect atmospheric data using research-grade instrumentation. For example, in Fall 2025 students in the Advanced Synoptic Meteorology lab instrumented an aircraft and flew over Lincoln, collecting data to understand atmospheric structural changes caused by urban heating effects. In the same course, students collaboratively analyze weather events and develop public-facing hazards graphics and statements, an uncommon (among undergraduate programs) but necessary communications exercise for workforce readiness (e.g., in the National Weather Service).

Experiential learning also extends into industry-facing and interdisciplinary contexts.

- **SEG EVOLVE** - this unique 6-month-long program sponsored by the Society of Exploration Geophysicists (SEG) allows select student teams worldwide to analyze real geophysical data from exploration to economic evaluation. Team Nebraska has participated twice in 2024 and 2025 [see letter in Appendix 10.3.3G], and based on our students' remarkable performance, they were sponsored by SEG to attend the IMAGE convention in Houston each year and present their identified exploration opportunities to the professional community.

As one recent graduate reflected, *"The hands-on fieldwork and collaborative projects taught me resilience, adaptability, and the importance of teamwork. These experiences not only prepared me for the challenges of my career but also gave me a deeper appreciation for the natural world that I carry with me to this day."*

4.3 Student Achievements and Research Excellence

Students in EAS distinguish themselves through academic excellence, research accomplishments, and professional engagement at both local and national levels. Whether earning competitive fellowships, presenting at major conferences, or contributing to impactful research, our undergraduate and graduate students consistently demonstrate the curiosity, dedication, and leadership that define EAS.

In the past five years alone:

- **Four students** have earned NSF Graduate Research Fellowships as UNL undergraduates or incoming graduate students
- **Two students** have joined EAS as Fulbright Scholars
- **One student** received the NSF NCAR Graduate Visitor Fellowship (Summer 2025)
- **Team Nebraska** won the Regional (U.S.) Challenge Bowl Competition of the Society of Exploration Geophysicists (SEG) in Spring 2025 and will compete in the World competition among the 11 finalist teams in October 2025.

4.3.1 Undergraduate Research

Undergraduate research is central to the EAS experience. More than **50 students** in the past decade have received UCARE fellowships to conduct independent projects under faculty mentorship. Many of these students have gone on to graduate study, underscoring the strength of the department's research training. In the past decade, **five undergraduates have lead-authored peer-reviewed papers** (Lathrop et al., 2017; Undersander et al., 2017; AlBadi et al., 2023; Martz et al., 2025; Scott et al., 2025). Our students frequently earn Best Student Presentation awards at the Nebraska Academy of Sciences Conference and also present their research nationally and internationally.

EAS welcomes students from other majors seeking advanced research experience unavailable in their home departments. Examples include projects by students in Environmental Studies, Fisheries and Wildlife, Global Integrative Studies, and Mathematics and Computer Science through UCARE and Raikes Research Studio programs.

These research and field experiences develop not only scientific skills but also leadership, teamwork, and professional identity. Alumni consistently credit their success to the department's culture of mentorship and experiential learning:

> "The real-world field exercises taught us how to collect, preserve, analyze, and document data in a way that had me steps ahead of others entering the workplace."
> "The department had a well-established strategy for fostering the professional development of students."

Eliminating EAS would sever these educational pathways and dismantle the alumni and partners of the EAS community that has produced generations of scientists, educators, and public servants, many of whom remain in Nebraska.

5. Partnerships and Public Impact

While engaging with the local community was not included in the metrics used, the outreach and partnership efforts of EAS directly support the *Extraordinary Partnerships & Engagement* pillar by providing community impacts that "lead to overall betterment and growth of all populations within the state."

5.1 Trusted Voices in Science and Society

EAS faculty continue to serve as trusted experts on pressing environmental and scientific issues. Over the past 12 months alone, media coverage featuring EAS faculty has generated an estimated $4 million in equivalent advertising revenue. Faculty in EAS have consistently garnered national and regional media attention for their expertise in Earth and Atmospheric sciences.

Adam Houston has been a prominent voice in severe weather research, appearing in a 2025 CNN interview and previously featured in the New York Times (2022) and Knowable Magazine (2023). His consultation on the 2024 film Twisters further highlights his role in bridging science and public storytelling. Houston also appeared on local outlets, such as WOWT and KETV/ABC (2024), and was a guest on WHYY's nationally syndicated science radio show The Pulse (2022).

Karrie Weber and EAS graduate student Jeff Westrop were featured on the front page of the Omaha World-Herald (2023) for their research on groundwater contamination. Weber has also been interviewed by KETV and NTV regarding the presence of nitrates and uranium in Nebraska's groundwater, underscoring the department's role in addressing environmental health concerns related to groundwater quality. Beyond addressing locally relevant problems with global impact, Weber has also engaged with public utilities and industry. This includes sharing water quality data collected through research and providing feedback to help guide NSF/ANSI Point of Use/Point of Entry standard establishment.

David Harwood's Antarctic research has received widespread acclaim. His leadership in managing drilling access for the Subglacial Antarctic Lakes Scientific Access (SALSA) project has been covered extensively, including a feature in Business Insider detailing the team's groundbreaking work drilling into a subglacial lake beneath West Antarctica. A documentary on these efforts, *The Lake at the Bottom of the World*, won Best Documentary Feature at the Eastern Sierra Mountain Film Festival (2022).

Liang Chen has been recognized for his work in disaster risk reduction and climate resilience. In 2024, he was featured by the United Nations Office for Disaster Risk

Reduction, Newsweek, the Des Moines Register, and several Nebraska media outlets including KOLN Lincoln, KNOP North Platte, and KGFW. His earlier work was also covered by the Omaha World-Herald and Lincoln Journal Star (2022).

Other faculty have also made notable media contributions. Irina Filina appeared on the Society of Exploration Geophysicists (SEG) podcast in 2024 to discuss innovative non-seismic geophysical methods. Richard Kettler was interviewed by KETV in 2023 about the OSIRIS-Rex sample return mission and previously by Bloomberg Law in 2020 regarding the Niocorp Elk Creek Project, highlighting his expertise in planetary and mineral sciences. Matthew Van Den Broeke has been interviewed by numerous news outlets about his radar-based studies of the interactions of airborne organisms with weather phenomena.

Additionally, the University of Nebraska Alumni Association's feature in the Nebraska Quarterly (Summer 2025) highlighted the impact of EAS-trained broadcast meteorologists across the state, underscoring their critical role in keeping Nebraskans informed and safe during severe weather events. This recognition reflects the department's success in preparing graduates who serve as trusted voices in public safety and science communication.

This coverage reflects a trend of consistent engagement, with faculty frequently interviewed and cited for their expertise on topics ranging from climate change and severe weather to geological phenomena. Their contributions have helped shape public understanding and policy discussions at both the state and national levels and elevated the profile of UNL.

5.2 Engaging Communities Across Nebraska

EAS faculty are deeply committed to community outreach, regularly participating in events that bring science to the public in engaging and accessible ways. Since 2005, the annual *Dinosaurs and Disasters* event has welcomed over 1,700 visitors each year to explore more than 20 interactive science booths at the University of Nebraska State Museum. This event represents a strong partnership between the Museum and EAS. As the largest public event hosted by the museum, *Dinosaurs and Disasters* is one of the reasons the Department of Earth and Atmospheric Sciences received the inaugural College of Arts and Sciences Engagement Award in 2017.

In addition to *Dinosaurs and Disasters*, EAS faculty contribute to a wide array of community programs, including *Lincoln Earth Day*, *Spark Summer Learning*, the *Women in Science Conference*, *Aviation STEM Day*, *WeatherFest*, the *Lincoln Public Schools (LPS) Science & Engineering Fair*, the *LPS Youth Development* initiative, the Osher Lifelong Learning Institutes (OLLI), Nebraska Game & Parks outreach initiatives, and many K-12

schools in eastern Nebraska. These events provide hands-on learning experiences and foster enthusiasm for STEM among students and families.

One standout program is the *Women in Science* annual event (now known as the *Wonder in Science* conference), which attracts approximately 100 high school students from across Nebraska. Participants engage in STEM activities such as laboratory and industry tours, as well as interactive science workshops. Faculty, graduate students, and postdoctoral researchers from EAS contributed science demonstrations for this event. This initiative is supported by funding from Nebraska EPSCoR, with Dr. Mindi Searls serving on the organizing committee since 2014 and as PI since 2022.

In 2019, Mindi Searls collaborated with the University of Nebraska State Museum to launch *Rocks are Universal*, a series of six virtual workshops focused on meteorites. These workshops were hosted in libraries across Nebraska, expanding access to geoscience education in rural and underserved communities.

Dr. Ross Dixon received an Instructional Improvement Fund award from the College of Arts and Sciences to develop a rotating tank laboratory. This equipment has been used in demonstrations at *Dinosaurs and Disasters,* the *LPS Science & Engineering Fair,* and the *Science Olympiad National Tournament,* where hundreds of K-8 students from across the country discovered the importance of rotation and temperature gradients in producing weather patterns common to Earth's midlatitudes.

In all of these outreach events, EAS engages both undergraduate and graduate students in designing and presenting demonstrations and hands on activities. Engaging undergraduate and graduate students in outreach is a vital component of their academic and professional development. Through participation in community events, science fairs, and educational programs, students gain valuable experience in communicating complex scientific concepts to diverse audiences. This not only strengthens their understanding of the material but also cultivates essential skills in public speaking, collaboration, and leadership. Moreover, these experiences inspire younger learners and help build a more scientifically literate community, making student involvement a powerful tool for both education and engagement.

EAS embodies UNL's *Engaging Communities Across Nebraska* pillar through sustained, statewide outreach that brings science to life for learners of all ages. By integrating hands-on education, student involvement, and community partnerships, EAS advances scientific literacy, fosters future STEM leaders, and demonstrates the university's enduring public impact beyond traditional academic metrics.

5.3 Youth Engagement Through Summer Camps and Bridge Programs

EAS faculty also lead summer camps and immersive programs designed to inspire the next generation of geoscientists. These programs attract high school students from Nebraska and neighboring states, offering hands-on experiences in fieldwork and scientific exploration. Notably, Irina Filina leads a specialized *Geoscience Camp*, providing students with a deeper understanding of Earth's physical processes. These week-long summer camps are aimed at high-school students who want to explore geoscience as a possible career.

From 2016 to 2019, David Harwood and Mindi Searls co-led a *Bridge Program* that introduced 46 high school students to geoscience through a comprehensive nine-day field trip. This initiative helped bridge the gap between high school and college-level science, fostering early interest and preparedness for geoscience careers.

Since 2023, Liang Chen has mentored five senior students from local high schools through the *Young Nebraska Scientists* program. Over the course of this two-month internship, students participate in hands-on research exploring climate variability across Nebraska and share their findings at the Nebraska Summer Research Symposium. Many of them have gone on to pursue higher education both within Nebraska and at top universities nationwide, including Harvard, carrying forward the curiosity and passion for STEM they developed through their time with EAS.

5.4 Leadership in the Nebraska Academy of Sciences

EAS faculty play a vital role in the Nebraska Academy of Sciences (NAS), contributing to the advancement of scientific knowledge and education across the state. David Harwood served as NAS President, demonstrating his commitment to leadership and advocacy for science. Irina Filina currently chairs the Earth Sciences Section, further strengthening the department's presence in the Academy (see support letter in Appendix 10.3.3D).

Faculty members also organize and lead NAS Geology Field Trips, with David Harwood and Mindi Searls coordinating excursions in 2023, 2024, and 2025. These field trips provide valuable experiential learning opportunities for students, educators, and faculty alike. Additionally, David Harwood served as Chairperson for the NAS Annual Meeting in both 2021 and 2022, helping to shape the direction of scientific discourse and collaboration in Nebraska toward greater science literacy in students and the public.

6. Academic Programs Workforce Relevance

6.1 Unique and Essential Degree Programs

The proposed elimination of the Meteorology-Climatology and Geology degree programs would be a profound loss to the University, the state, and the region. Brandon Jones, President of the American Geophysical Union, correctly identifies in his letter of support that EAS "*embodies the University of Nebraska's land grant mission: advancing knowledge, preparing a highly skilled workforce, and engaging the community in addressing pressing societal challenges—from severe weather and drought to energy and mineral resources. Its loss would create an irreparable gap in Nebraska's educational, scientific, and public service landscape"* (Appendix 10.3.3A).

UNL offers the **only comprehensive atmospheric science bachelor's program in the state.** If discontinued, Nebraska would join just six other states (Arkansas, Maine, Idaho, Montana, New Mexico, and Rhode Island) without a formal meteorology program (AMS, 2025). The Meteorology – Climatology program prepares students with the scientific and technical skills required by federal hiring standards (GS-1340), qualifying them for careers with the National Weather Service (NWS), NOAA, the FAA, and the Departments of Defense and Energy, among others. It also provides foundational education expected by the private sector.

The **B.S. in Geology** is the **only program at UNL** that provides students with the educational foundation required to pursue licensure first as Geologist-Interns and subsequently as Professional Geologists. Licensure is mandated under the Geologists Regulation Act, which requires professional geologists in Nebraska whose activities may affect public health, safety, or welfare to be licensed by the state. This credential is essential for careers in environmental consulting, groundwater management, engineering geology, and related fields. EAS plays a direct role in supporting the state's licensure process through the work of Dr. Cara Burberry who serves as vice chair on the Nebraska Board of Geologists, which oversees professional licensure and ensures adherence to state standards of practice (see letter Appendix 10.3.3F).

At the graduate level, **EAS houses the only master's and doctoral programs in Earth and Atmospheric Sciences in Nebraska**, with specializations in Geology, Meteorology-Climatology, Hydrogeology, Geoscience Education, Great Plains Studies, and Water Resources Planning and Management.

These programs ensure that the state can educate and retain advanced professionals who play a critical role in monitoring and protecting Nebraska's water resources, which are increasingly threatened by drought, contamination, and overuse. Nebraska's geology is also rich in critical mineral resources (see letter Appendix 10.3.8D), including uranium, rare earth elements, and natural/geologic hydrogen. UNL-trained geologists are equipped to work in carbon sequestration, geothermal energy, and environmental remediation, all of which are increasingly important to Nebraska's future resilience and sustainability. Without a local pipeline of trained geologists, Nebraska would be forced to rely on out-of-state professionals, increasing costs and reducing responsiveness to local needs. In addition, bright students wishing to pursue studies in geology or atmospheric sciences would be forced to leave Nebraska and pay more for their education out of state.

6.2 Future Demand in Earth and Atmospheric Sciences

Demand for Earth and Atmospheric Scientists is expected to remain robust as current jobholders age out of the workforce. For example, approximately 60% of American Meteorological Society (AMS) members were 50 or older in 2020 (Porter & Chu, 2021). The Bureau of Labor Statistics projects atmospheric scientist employment to grow by 1% from 2024 to 2034, with an average of 700 openings for atmospheric scientists projected each year. UNL graduates enjoy a competitive advantage in seeking positions with the NWS: approximately 25% of NWS offices are located on the Great Plains, whereas the Meteorology programs in that region only produce 15% of the graduates (Data USA, n.d.).

Earth Sciences are in a similar position: the President and Executive Director of the Geological Society of America (GSA) co-wrote a letter of support for EAS identifying the "looming shortage of geoscientists: nearly half of the current workforce is expected to retire within the next decade, even as demand for expertise in critical minerals, groundwater, carbon storage, and hazard mitigation continues to rise. Geoscience is among the STEM fields with the lowest unemployment rates, and graduates consistently secure strong employment outcomes in both the public and private sectors" (Appendix 10.3.3B). Geologists are also typically older than the workforce median age (42). More than half of all geologists that work for the federal government are over age 55 (Wilson, 2019), as are more than half the members of the American Association of Petroleum Geologists and the Geological Society of America. The advanced age of the geology workforce is the primary reason that some have suggested that there will be 100,000 more jobs than geologists to fill them in the US in 2030 (Moss et al., 2025).

Tom Wilker, Executive Director of the American Association of Petroleum Geologists (AAPG) cautions in his letter of support for EAS that they, "are observing cyclical earth science enrollments that are resulting in declining university administration support and

department closures, at a time when earth science departmental demand will rebound because of society's need to better understand changing climate and earth systems. The Geological Society of London published an article titled "Think Twice" on 30 May 2024 by Dr. Davide Elmo in their Geoscientist magazine that documents these cyclical trends (Elmo, 2024; Fig. 6). Dr. Elmo asserts in his article **that enrollment data should never be the deciding metric to establish the importance of an academic program."**.

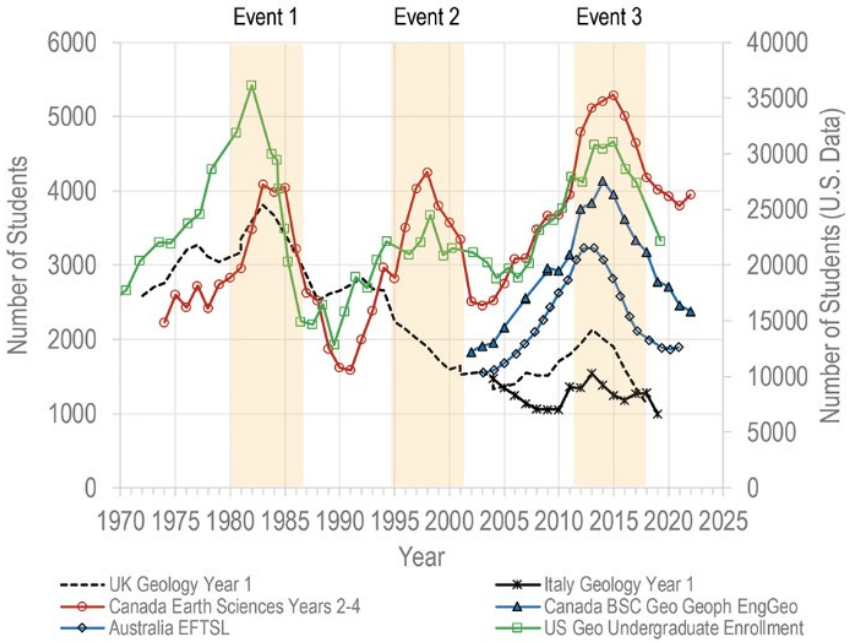


Figure 6: Cyclic earth science student enrollment trends from 1970 – 2023 (Elmo, 2024).

Tom Wilker continues, "The University of Nebraska at Lincoln's EAS department has a successful track record of producing employable graduates. More than 92% of the departments' graduates find employment in their field of study. And many of your alumni have gone on to prominent positions in governmental or public service organizations. The department is doing its job well" (Appendix 10.3.3C).

The forecasts for the demand for geologists and atmospheric scientists were made before January 2025. The current administration's policies are likely to increase demand for both geologists and atmospheric scientists. If federal geology and atmospheric science positions are eliminated, businesses (e.g., airlines, insurance companies) will be required to increase their forecasting and climate modeling capabilities. Even federal sector positions in these areas are seen as essential (e.g., NOAA is currently planning to hire 450 meteorologists, hydrologists, and radar technicians in 2025 and 2026). Increasing population and climate pressures will keep demand for hydrogeologists and other environmental geologists high. Many forecasts of future demand for geologists were

predicated on the so-called energy switch: lower petroleum production obviates the need to replace many of the older petroleum geologists. We are now facing a world where oil exploration and production are likely to remain high for decades: the average age of light vehicles in the US is 12.8 years (Bureau of Transportation Statistics, 2025). At the same time, international demand for the fuels and materials needed for the energy switch will increase and create demand for geologists in those sectors.

6.3 Graduates of the EAS Program

Graduates of the EAS program have high placement rates in jobs related to their discipline: 94% for BS in Meteorology-Climatology, 92% with BS or BA in Geology, and 98% with MS or PhD in Earth and Atmospheric Sciences. EAS alumni are employed in state and federal agencies across Nebraska, including the National Weather Service (NWS); US Army Corps of Engineers; 557th Weather Wing, Offutt AFB, US Air Force; Nebraska Department of Water, Energy, and Environment; the Nebraska Department of Environment and Energy; and the Nebraska Oil and Gas Conservation Commission. EAS alumni also serve as center directors at UNL with public-facing missions, such as the National Drought Mitigation Center, Nebraska State Climate Office, Conservation and Survey Division, and the Nebraska Water Center. Many private sector businesses in and around Nebraska feature EAS alumni, some as founding owners of companies or in top leadership positions, including in water, energy, and mineral resources, environmental consulting and remediation, and private weather forecasting.

Employers of EAS graduates praise their expertise and experience straight out of school, particularly in comparison to graduates from other universities. Dan Blankenau, President, Great Plains Energy, Inc. Notes in his letter of support that he has “hired and continues to hire professional geologists and interns from UNL’s department and am always impressed with and appreciative of their knowledge and abilities they obtain through your excellent program” (Appendix 10.3.7D).

Evan Kuchera currently serves as Chief of Science and Services in the 16th Weather Squadron (WS) of the Air Force’s 557th Weather Wing based in Omaha. The 16th WS serves over 20K decision makers in the Air Force, Army, Intelligence Community, Navy, White House, Department of State, and foreign partners like NATO to protect and exploit $87 billion dollars of weather-sensitive mission assets and property annually. In his letter of support he notes “the availability of well-educated graduates of UNL EAS has been vital to successful mission execution in 16 WS for over 20 years” (Appendix 10.3.7A).

Rusty Dawkins, Chief Meteorologist at Lincoln’s KLKN-TV, praises the numerous EAS meteorologists that he has worked with in his letter of support for EAS:

> "[EAS graduates'] specialized training, scientific rigor, and commitment to public service make them exceptionally valuable employees, particularly when compared to the broader, more general applicant pool. Graduates from this program bring a unique blend of technical expertise and practical communication skills that are critically important in television broadcasting, especially when it comes to weather reporting and science communication. Their educational background includes not only theoretical knowledge but also practical experience through forecasting labs, fieldwork, and collaboration with emergency management agencies, skills that translate directly into high-value performance on air and behind the scenes**. In comparison with more broadly trained candidates, UNL Earth and Atmospheric Science graduates consistently demonstrate a higher level of scientific literacy, a precise approach to data, and a stronger commitment to public service**. They are not just communicators, they are trusted sources of information, able to explain not just *what* is happening, but *why* it matters." (Appendix 10.3.7B)

Jennifer Pittman, a UNL atmospheric sciences alumnus and current Deputy Chief of the Science & Technology Integration Division at the National Weather Service's Central Region Headquarters and hiring official for NWS wrote in her letter of support, "Over the next several years, the National Weather Service will need to fill hundreds of meteorologist positions tasked with the protection of life and property, and UNL grads are highly sought for these very competitive and very important positions" (Appendix 10.3.7E)

Jason Wagner, Chief of Geology and District Geologist for the U.S Army Corps of Engineers-Omaha District further observes in his support letter that "local availability of professionally qualified candidates is critical in being able to sustain a consistent workforce....Hiring, especially in the government is difficult. We do not necessarily pay as much as the private sector and Omaha is not exactly the location everyone wants to come to. The EAS department gives me a local option that can make a difference." (Appendix 10.3.7C)

Eliminating the Earth and Atmospheric Sciences Department at UNL would have serious consequences for Nebraska's workforce, public services, and long-term resilience – not only in the face of drought and extreme weather, but also in addressing geoscience issues such as groundwater depletion and resource management. These issues directly affect Nebraska's agriculture, energy sector, economy, and communities, making the training of atmospheric scientists and geologists essential to Nebraska's future. Eliminating these programs would disrupt the pipeline of qualified professionals in critical fields and require students to pursue education and employment in other states, weakening Nebraska's preparedness and capacity to protect lives and property and its ability to manage natural resources, support sustainable development, and retain talent. **Preserving the**

Department of Earth and Atmospheric Sciences ensures that graduates remain in Nebraska, where they serve the public and contribute directly to the state's safety, economy, and resilience.

One notable recent event occurred on 26 April 2024, when 25 tornadoes, some violent, tracked through eastern Nebraska (National Weather Service, 2024). Despite their number, size (several were over 1 mile wide), and destruction (estimated $542.6M in damages), **no one in Nebraska was killed**. This can be attributed to the accurate and timely warnings issued by the Omaha NWS office during this event. Of the staff on duty that day, 40% were graduates of the EAS program. **Our graduates are saving the lives of Nebraskans.**

6.4 Essential Faculty Expertise and Program Quality

The memorandum from Chancellor Bennett to the APC (Sept. 12, 2025) suggested that a limited number of EAS faculty might be rehired into other units "to preserve educational pathways." However, even with a subset of faculty retained, the knowledge base required to sustain geology and meteorology programs would be lost. Beyond coursework, the transformative research and experiential learning environment that defines EAS would no longer be possible.

Courses needed for professional licensure in geology and federal certification in meteorology require the breadth of expertise currently present in EAS and cannot be delivered by faculty outside the department. Dr. Larkin Powell, Director of the School of Natural Resources writes in a support letter, "The loss of two academic degree programs, geology and meteorology, that serve core audiences cannot be replicated elsewhere. Our School of Natural Resources has an environmental science degree program with soil science and climate science options, but the curriculum is not the same…", "… SNR will not be able to make up for the loss of these two programs…", and "…we would not be able to offer the breadth of GEOL 100 level ACE courses with labs" (Appendix 10.3.4F)

In his letter of support, Dr. John Barron of the US Geological Survey notes the "fundamental importance of a cross disciplinary education in the Earth Sciences at all levels. In a world of increasing knowledge and its application, such education cannot be achieved in a few courses but requires a dedicated and integrated department of experts. Knowledge of climate change and its threats to the environment and human health require such a thorough curriculum that can only be achieved in an active, well-funded earth and atmospheric sciences program" (Appendix 10.3.3E)

Attempting to recreate these programs elsewhere would require significantly more faculty and infrastructure than could realistically be provided. Such programs require strong

collaboration such as that currently established between faculty in EAS and faculty in the School of Natural Resources. The specific expertise areas of EAS faculty are not duplicated in SNR, as indicated by SNR Director Larkin Powell (Appendix 10.3.4F).

The quality of these programs has been affirmed through a recent external review. The 2024 Academic Program Review (APR) concluded that the undergraduate curricula for the B.S. degrees in Geology and Meteorology are consistent with "the standards of other programs and recommendations from the literature and professional societies" (Klyce & Ryker, 2023; AMS, 2023). This APR report highlights that the existing programs are both rigorous and aligned with professional expectations, ensuring that students are well prepared for licensure and employment (Appendix 10.2).

Together, these points underscore that EAS provides degree programs that are both unique and indispensable to Nebraska. Eliminating the department would not only reduce UNL's academic offerings but also eliminate the state's only pathways to prepare students for professional licensure and for careers that address pressing challenges in weather forecasting, natural hazards, water resources, energy, and critical mineral recovery.

7. Enduring Culture and Alumni Impact

7.1 A Community of Belonging and Mentorship

The Department of Earth and Atmospheric Sciences (EAS) embodies the *Extraordinary Culture and Environment* envisioned in the University's strategic plan - a community where belonging, collaboration, and purpose-driven excellence are lived values. Students, alumni, and community partners consistently describe EAS as a department that not only delivers exceptional scientific training but also cultivates mentorship, integrity, and a deep sense of purpose and community (see letters Appendix 10.3.4N, 10.3.8 B, C, H, I, J).

In a survey conducted in September 2025, students and alumni describe a department that challenged them academically while providing the support and community needed to succeed:

> "The one-on-one conversations I have had with these faculty members has made me feel determined, passionate, supported, and more than anything, beyond grateful to be a part of such a wonderful department. As an autistic person, it is often hard to feel as though you belong, but the care and empathy that these professors have shown me that I not only belong, but that people actively want me to stay and participate in all of the opportunities that the department presents me."

> "...the department fosters a genuine sense of community. Faculty and students alike are collaborative rather than competitive, creating an environment where I felt supported to pursue ambitious goals."
>
> "I was drawn to the program's culture of close mentorship and collaboration."
>
> "...the department's collaborative culture has given me the confidence and freedom to take ownership of my research. That supportive environment has prepared me not just to succeed, but to thrive as a leader in my field."
>
> "It was not just a degree program; it was a community. Bessey Hall was a second home to me."
>
> "I never felt like I wouldn't succeed because I had a small but mighty team of professors that genuinely cared about us students and wanted us all to achieve our dreams."

EAS has received an extraordinary outpouring of support from across the university, state, nation, and internationally in response to the proposed elimination. Letters have come from industry leaders, alumni, educators, professional societies, and concerned citizens, as well as from faculty and departments across UNL. This broad and immediate response underscores the department's essential role in advancing the university's mission and its deep, sustained partnerships with the communities and industries that depend on its expertise.

The overwhelming support reflects the trust and credibility EAS has built over decades through workforce development, applied research, and public service. EAS faculty and alumni provide critical expertise in water quality, severe weather, climate, geoscience education, and natural resources, areas central to Nebraska's safety, economy, workforce and sustainability. The department's elimination would not only disrupt these statewide partnerships but also risk undermining public confidence in the university's commitment to serving Nebraska's needs and keeping Nebraskans safe.

7.2 Alumni Leadership and Philanthropy

Alumni experiences presented in the above quotes and in attached letters reflect a culture of belonging and mentorship that continues long after graduation. **EAS maintains one of the most engaged alumni networks on campus.** The department's Alumni Advisory Board (established in the 1970's) includes 38 members representing more than 650 years of combined professional experience across sectors such as oil and gas, higher education,

government, environmental consulting, public health, and water resources engineering. Board members meet annually with faculty and students, and all alumni are invited to reconnect at an evening banquet that celebrates their shared legacy. Every other year, alumni organize and lead workshops where they meet directly with current students to answer questions, share industry perspectives, and offer career guidance. Their sustained involvement demonstrates how EAS fosters lifelong engagement and professional identity.

The alumni's commitment extends far beyond mentorship. They work on behalf of the department to champion initiatives that strengthen student and faculty success. These efforts have had a transformative impact across every dimension of our program. To date, **EAS donors have contributed over $17 million** through the University of Nebraska Foundation, establishing 83 active funds with a market value currently exceeding $12 million. These funds provide **over $450,000 in annual income** and more than **$2.2 million in spendable balances**, directly supporting student scholarships, field experiences, outreach, student research, and infrastructure improvements. Additionally, EAS has 47 endowments with a market value over $6.4 million, generating nearly **$235,000 in annual income**, and supporting **six endowed chairs and professorships**, with at least one more endowed chair to be realized from an estate gift. Notably, **23% of EAS alumni give back to the department**, one of the highest participation rates among departments at UNL.

Importantly, **the majority of these donations are specifically designated for the Department of Earth and Atmospheric Sciences** and are **unlikely to be retained by the university should the department be eliminated**. The strong personal and professional ties that motivate this generosity are rooted in the department's community, mission, and legacy - relationships that cannot simply be transferred to another unit.

The vitality of this alumni network and the department's broad community impact demonstrate that EAS already embodies the culture of collaboration and purpose that the University seeks to cultivate. Eliminating this department would not only dissolve a nationally recognized program but also dismantle stellar examples of the *Extraordinary Culture & Environment* and *Extraordinary Partnerships & Engagement*. The human, academic, and alumni networks that sustain EAS are precisely the kind of enduring strengths that will make the University of Nebraska extraordinary.

8. The Cost of Elimination and the Path Forward

8.1 Consequences of Elimination

The elimination of the Department of Earth and Atmospheric Sciences (EAS) would have far-reaching academic, economic, and reputational consequences for the University of Nebraska–Lincoln, the NU system, and the State of Nebraska. No feasible teach-out plan can replace the scope of instruction, research, and service that EAS provides. Its removal would dismantle degree pathways, jeopardize professional licensure and accreditation, weaken Nebraska's research portfolio, and disrupt statewide partnerships that directly serve public safety, water management, and workforce development.

- **Loss of Essential Academic Programs from Nebraska**
  - Removes Nebraska's only bachelor's program in Meteorology–Climatology and only undergraduate pathway to Professional Geologist licensure at UNL.
  - Eliminates all graduate programs in geology and atmospheric sciences in the state.
  - Ends the ability of secondary education majors to earn Earth and Space Science and General Science endorsements, worsening Nebraska's shortage of qualified science teachers.
- **Irreparable Damage to Nebraska's Research Capacity**
  - Disperses federally funded researchers whose work supports NSF, NOAA, and NASA projects, reducing UNL's federal research portfolio and competitiveness.
  - Weakens UNL's disciplinary breadth and AAU standing by removing a core natural science disciplines central to national research metrics.
  - Disrupts active, multi-institutional projects with international collaborators and long-term funding streams.
- **Collapse of Nebraska's Geoscience Workforce Pipeline**
  - Cuts off the supply of locally trained geologists, meteorologists, and hydrologists who serve in the National Weather Service, environmental consulting, groundwater management, and energy sectors.
  - Forces Nebraska employers to rely on recruitment of out-of-state talent, raising costs and reducing local expertise in hazard mitigation, resource management, and energy transition.
- **Threats to Public Safety and Climate Resilience**

    - Reduces the number of trained atmospheric scientists supporting the National Weather Service; e.g., during the April 2024 tornado outbreak, 40% of NWS staff on duty were EAS graduates.
    - Limits the state's capacity to prepare for drought, flooding, and extreme weather - issues central to Nebraska's economy and security.
- **Loss of Alumni and Philanthropic Support**
    - Jeopardizes more than $17 million in alumni gifts and 83 active funds and 47 endowments dedicated specifically to EAS.
    - Dismantles one of UNL's most engaged alumni networks in earth and atmospheric sciences, eliminating annual events, mentorship programs, and student scholarships that depend on department continuity.
- **Erosion of Outreach and Public Engagement**
    - Ends statewide programs such as *Dinosaurs and Disasters* and K–12 teacher professional development in the geosciences.
    - Undermines UNL's public visibility and its land-grant mission to advance science literacy and community engagement.
- **Reputational and Institutional Harm**
    - Signals retreat from UNL's commitment to research excellence, public service, and workforce development.
    - Damages relationships with federal agencies, industry partners, and prospective students.
    - Undermines nearly every pillar of NU's *Odyssey to the Extraordinary* strategic plan.

In summary: eliminating EAS would dismantle essential academic programs, disrupt Nebraska's scientific and workforce infrastructure, and inflict lasting damage on UNL's reputation, research capacity, and public mission.

8.2 Constructive Alternatives

In crafting alternatives to the elimination of EAS we are struck by how daunting such visioning is, not because we lack the ability to imagine innovative solutions, but because we are unclear which problem we should aim to solve. In requesting feedback, the APC asks "given that a budget cut is necessary, can you suggest alternatives to the elimination of your unit." Should alternatives principally address actual, not merely perceived, weaknesses of EAS in research and teaching or should alternatives directly address the estimated $1,850,000 in budget reduction that EAS elimination would yield? The former would move us closer to regaining membership in AAU, whereas the latter is necessary to address the structural deficit at the root of the proposed elimination. Many solutions are

unlikely to achieve both objectives. In the proposals outlined forthwith, we hope to address both through several separate proposals. In all three proposals, the EAS department is maintained in its entirety to sustain the disciplinary expertise and offerings required for the B.S. in geology, B.S. in meteorology-climatology, and M.S. and Ph.D. in Earth and Atmospheric Sciences to sustain needed preparation for Nebraska's workforce.

In the first proposal, course redundancies will be identified and removed through negotiations with programs offering courses that include content overlapping with EAS courses. Such redundancies are particularly detrimental to the Geology program since redundant courses draw students out of 100-level geology courses, particularly GEOL 101. Many undergraduate Geology students transfer into the degree after taking introductory geology courses, so we believe these redundancies impact the size of the Geology major. While this reduction is unlikely to increase revenue at UNL, costs covering course instruction will result in savings while preserving pathways for students to receive licensure as a professional geologist.

In the second proposed alternative, we commit to exploring a professional MS degree in atmospheric sciences. This new degree would be a non-thesis option targeting individuals working in environmental science professions looking for coursework in meteorology and climatology. There is precedent for this type of degree in at least one other Big 10 University: The University of Wisconsin-Madison has a professional master's program which started around 2021. The proposed major would be a new revenue stream for the university.

The final proposal is to merge the Geology and Meteorology-Climatology BS degrees and Earth and Atmospheric Sciences MS/PhD degrees with the Environmental Sciences BS, Environmental and Sustainability Studies BS, and Natural Resources MS/PhD. All of these degrees not in EAS are currently offered in the College of Agricultural Sciences and Natural Resources. In this proposal, each degree would remain distinct but, if housed in a single academic unit, student success pathways could be broadened and academic, research, and community engagement synergies could be enhanced. As the letter from Dr. Larkin Powell, Director of the UNL School of Natural Resources (SNR) notes, current staffing in SNR cannot support the EAS degrees (Appendix 3.3.4F). Thus, this merger cannot happen if the proposed plan to "eliminate the academic department and all programs" (budget reduction proposal) is approved.

This merger is envisioned to principally strengthen the merged programs. Students attracted to environmental sciences could have a pathway to pursue a major (Meteorology-Climatology) that would certify them to work as a federal meteorologist. Students attracted to environmental sciences would have an option to earn a degree that

enables licensure as a professional geologist. EAS students who wish to pursue a less traditional meteorology degree that still enables employment in weather and climate fields could pursue an Environmental Sciences or Environmental and Sustainability Studies degree. In other words, the merged units could facilitate higher overall enrollment and higher overall retention.

While strengthened programs could have a positive indirect fiscal impact, there may also be direct impacts on the budget. First, over the last 10 years, 43.4% of students who attrite the undergraduate majors in EAS between their first and second years left UNL entirely. While pursuit of an alternative degree in environmental sciences was available to them at the time of their departure, the pathway was made considerably more difficult, because it required a change in college and associated change to college distribution requirements. We believe that merging these academic programs would simplify such transitions and reduce the loss of tuition from students leaving UNL.

An additional source of potential budget reduction could be achieved through reduction in temporary teaching. Chronic faculty understaffing in EAS (discussed in the 2024 APR, Appendix 10.2), particularly amongst the atmospheric scientists, has necessitated a steady stream of temporary instructors to teach core courses for the degrees. With the proposed program merger and removal of cross-college obstacles to teaching apportionments, some of these temporary teaching demands could be filled with existing CASNR faculty.

Historically, obstacles and objections to a merger like the one proposed here were tied to administrative differences between the two colleges. If there is a willingness at all levels – from support staff, to faculty, to college and university administrators – a merged unit could enhance collaborations and research productivity, significantly improve student success pathways at UNL, potentially save money, and further expand and advance the *Extraordinary Culture & Environment* and *Extraordinary Partnerships & Engagement* and UNL's land grant mission already present in EAS.

9. Conclusion: A Call for Dialogue

The more than 140 signees (see letter Appendix 10.3.3.H), "representing Board members, and faculty of fellow member universities of the University Corporation for Atmospheric Research (UCAR), we write to express our dismay at the impact to our society and discipline from the short-sighted recommendation to close EAS and discontinue its undergraduate majors and graduate programs." "EAS deserves time to implement recommendations to increase its impact for UNL and be given a chance to meet the moment. UNL's current proposal to close EAS is troubling, risking our nation's prominence

in atmospheric science, geoscience, and discoveries that allow us to grow our economy and protect its inhabitants and resources in Nebraska and beyond."

Similarly, the 49 signees of a letter from the Nebraska Geological Society (NGS), Nebraska's largest geological organization (see letter Appendix 10.3.3.I), asks the APC to "reject the recent recommendation to eliminate the Department of Earth and Atmospheric Sciences."

The American Geosciences Institute (AGI), a National Academy of Sciences chartered federation of geoscience societies that represent nearly 350,000 geoscientists in the United States expresses the 'shock to the geosciences community'. In their letter (Appendix 10.3.3.J) AGI writes, "On behalf of the entire U.S. geoscience community, we strongly encourage you to not proceed with the elimination of the Department of Earth and Atmospheric Sciences."

Throughout this budget process, there has been limited communication between the upper administration and the departments proposed for elimination. We are cognizant of the fact that there are some areas of overlap between EAS and entities within CASNR; however, EAS is a unique and essential academic unit. We welcome a structured dialogue to identify opportunities to reduce any real or perceived redundancy in ways that strengthen, rather than dismantle, our programs, our partnerships, and our legacy.

Eliminating EAS based on limited and, in some cases, erroneous data would be a serious misstep that undermines the University's ability to deliver on its mission and meet the needs of students and the state. EAS graduates fill critical workforce needs in environmental consulting, the energy sector, and hazard forecasting. These programs cannot be replicated elsewhere in Nebraska without compromising student preparation and professional accreditation. We urge that EAS be retained and that an open and transparent dialogue be initiated to collaboratively address inefficiencies.

This step is not only necessary for sound decision-making, it is also explicitly called for in the University's own strategic plan. The *Extraordinary Stewardship & Effectiveness* pillar emphasizes the importance of "using data and proactive communication to support decision-making to align financial, facility and human resources with strategic academic priorities". In this case, proactive communication has been skipped. A process that sidelines open dialogue risks undermining both the credibility of the decision, and the long-term effectiveness of our academic programs.

We respectfully, but firmly, request that leadership uphold the University's stated commitment to extraordinary stewardship by retaining EAS as a unit and engaging other

departments, colleges, and stakeholders in transparent conversations. Retaining EAS while addressing redundancies through collaboration will not only resolve inefficiencies but will also strengthen our state flagship institution's capacity to meet its strategic priorities as outlined in the *Odyssey to the Extraordinary*.

10. Appendix

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10.2 EAS Academic Program Review 2024

UNL EAS Academic Program Review

12 November 2024

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Synopsis

The University of Nebraska-Lincoln's Earth and Atmospheric Sciences (EAS) Department in the College of Arts and Sciences houses two well-established programs in meteorology / atmospheric sciences and geology / Earth sciences, that offer undergraduate and graduate degrees. The 17 faculty, along with staff and students, support engaged learning and drive advances in the dynamics and sustainability of our planet. The department, then titled Geosciences, was formed in 1998 out of the merger of the Geology department, founded in 1893, and the Meteorology-Climatology program in the Geography department, a program started in 1981. In 2010, the department changed its name to its current moniker.

Today, the program continues to educate students in these areas and lead research in subjects such as flash droughts in changing climates, isotope geochemistry, past Earth climates, the stability of Antarctic ice sheets, severe weather dynamics, groundwater flow and nutrient management, subsurface geology, numerical modeling of weather systems, ice core drilling, plate tectonics, microbiology and evolutionary biology of ancient environments, weather sensing technology, and geoscience education, to name a few topics of current active funded grants. B.S./B.A. degrees are offered in Meteorology and Geology, along with M.S. and Ph.D. degrees. The department is primarily housed in Bessey Hall, which includes department-controlled classroom space, faculty and student offices, the Geology library, computer labs, shared lab facilities, and specialized labs of individual researchers.

This review team visited the department and college from September 29 to October 1 and assessed the quality of the program and provided initial recommendations based on our visits with academic leadership, faculty, students, and staff, and a review of the department self-study from two years prior (with minor updates made last year). Clearly, the program and college face significant budgetary headwinds. For EAS, these headwinds have slammed into a confluence of major faculty departures over the years since the last review, low numbers of majors in its programs, and decreased size of the graduate program. Many of the concerns noted in the self-study and the recommendations provided here surround a desire to support EAS toward revitalizing its historical strengths, sustaining and growing its academic programs, and finding opportunities to evolve in new areas, while increasing program visibility and promoting a culture of inclusion. *To make these happen will require clear communication from the college of priorities and expectations, incentives to adopt changes that shore up teaching and research, and likely investment of resources to make those changes happen, stick, and reach articulated benchmarks.*

Department Strengths

The knowledge created and communicated by EAS addresses some of the most pressing global problems around climate, water, extreme events, and sustainability, while advancing basic science of the Earth and atmosphere, and its interconnections. The program has historical strength in several areas including groundwater, geolimnology, ice cores, mesoscale

meteorology, geoscience education, and emerging growth in areas in land-atmosphere interaction, water quality, and modeling. Given co-operative strengths on UNL's east campus in areas of drought management, natural resources, and environmental sciences, there are also regular research collaborations with other units, and new avenues for increasing those connections are emerging.

These departmental strengths derive from a faculty that prides itself on a high level of collegiality, which our team witnessed routinely throughout our site visit. The faculty and staff are committed to the field and to its students, going above and beyond to cover their required courses and provide high-impact opportunities. Junior faculty report a high level of support for mentoring and are achieving in terms of productivity and research impact. The current department chair is clearly highly respected, and the faculty, staff, and students report feeling supported to address concerns and acquire resources. The Department also benefits from access to significant resources via its endowments and alumni support to take strategic actions, which could also help bolster several of our recommendations below.

Finally, we note that the department has made concentrated efforts to understand how it can be a stronger inclusive community and support efforts to recruit and retain diverse students and faculty. Efforts underway to develop holistic graduate admissions and faculty hiring rubrics, a code of conduct, safe and inclusive fieldwork protocols, and a focus on student support are all excellent initiatives to build that inclusive department.

Overall, we find the fundamentals of this department and its community are strong.

Challenges

The department does face significant challenges. Over the past decade, faculty departures and a long-term trend of low enrollment in their majors have led to a critical juncture in how the department can support its mission for high-quality teaching and research across multiple programs while meeting the expectations of the college. Faculty in the department have made heroic efforts to support its students but it has come at the cost of needing to lower priorities in other areas, particularly in research. These impacts are occurring in a period of, or in the case of voluntary separation incentives, as a result of, campus and college budget cuts.

The department desires to grow back to its historic strength, especially in faculty numbers. However, without hitting benchmarks in number of majors and total all-faculty research productivity (grant submissions, grants awarded, peer-reviewed publications, along with citations, awards, and advances that garner visibility and impact), and with ongoing continued budget pressure at the college level, the chances that new tenure-track hiring will be granted is highly uncertain. *Some hard choices will need to be made in the near future on the size and shape of the curriculum and teaching loads, building models that attract students to the major, and promoting efforts to increase collective research productivity.*

We are aware that some challenges facing EAS come from the nature of UNL's "divide" between the "City campus" and "East campus". The areas in which East campus overlaps most with EAS are in natural resources, the environment, and sustainability, creating potential competition but also potential synergies in teaching and research. Real or perceived roadblocks mostly go beyond the scope of this review. Nevertheless, we are aware of this issue. Though there are historical challenges to improving coordination across colleges, we encourage EAS to capitalize on existing and new connections across campus in areas of environment, sustainability, Earth system sciences, and climate, and find ways to stabilize its curricular offerings through attracting students from across campus to its offerings. At the same time, it is imperative that the department define and establish its brand to set itself apart from other units on campus, and to better articulate the unique value of EAS to UNL, the students, and the state.

Recommendations

Please refer to Detailed Review for review committee observations and justifications. Here we provide a high-level summary of the main recommendations in each section.

Curriculum

- The department degree requirements for courses are in line with expectations for Earth and Atmospheric Sciences degrees and we do not recommend making wholesale reductions to these that would put them out of alignment.
- However, the department would benefit from a careful look at their electives, in terms of variety and frequency of offering. We recommend that EAS conduct a realistic accounting of its course offerings and teaching capacity and adjust future catalogs accordingly.
- A robust long term planning process should be incorporated into curriculum committee duties.
- To support curriculum and research goals, EAS should consider adjustments to teaching loads of tenure/tenure-track faculty.

Undergraduate Majors

- The department's two undergraduate degrees have a modest number of majors, but students within each are well supported and engaged. There are opportunities to grow majors and enrollments to help sustain electives. We suggest redesigning elective courses to make them more relevant to other majors, investigating possible minors that can be easily paired with other majors, and looking for collaborative opportunities with other programs that offer complementary training.
- One option for deployment of financial resources is toward student support to attract majors. Consider giving all newly declared majors scholarships from EAS resources.
- We also endorse a department desire to pursue an additional Professor of Practice hire to support introductory courses and majors' requirements. We point to EAS's current lecturer who contributes significantly to teaching in the geology program as evidence for the need of such a position.

Graduate Program

- The graduate program is doing well, attracting excellent students, who are provided adequate support to pursue their degrees. However, there are similar concerns as noted above in curriculum in offerings and electives, which would benefit from longer term planning.
- We recommend the EAS department promote increased collaboration between Geosciences and Atmospheric Science students, by creating more opportunities for joint projects, seminars, and social events aimed at fostering networking and community-building within the department.
- We recommend EAS send representatives to meetings like SACNAS and other relevant conferences to actively recruit students through multiple pipelines.
- We are in favor of EAS considering offering a non-thesis option for the master's program to attract more students.

Research

- Of all the areas reviewed by our committee, the largest mismatch in perception between the college and the department is in research productivity and impact. Conversations with the Dean's Office should be initiated to better understand the differences in perception.
- We endorse the department's desire to find ways to increase visibility of research impact and supporting EAS faculty conducting high-impact research. We recommend strategic use of endowment funds to create incentives that support and reward high performing researchers and those seeking to increase their research impact.
- Several faculty have had excellent success engaging centers and faculty across campus. Consider tapping into their networks and expertise to enhance engagement for all faculty in EAS.

Visibility

- Related to the note above on research visibility, community building, and growing the major, we endorse EAS' desire to directly support and hire an outreach staff position who would provide support for outreach events, department events, and communication of research outcomes.
- Part of that process will also require EAS to establish its "brand". Conversations and articulation is needed about "What does EAS want to be known for across campus and nationally?"

Diversity and Inclusion

- EAS has made all the right moves toward improving diversity and inclusion in its program. We endorse continued efforts in this area and recognition for those faculty, staff, and students making that happen.
- Of these activities, we recommend making efforts to finalize and publicize the code of conduct.

- We recommend adopting practices for greater student involvement in department governance and event organization to provide capacity for an inclusive department community.
- The required professional development course for graduate students may be one area where actions around inclusion and retention could be further integrated.

Faculty and staff

- As noted, EAS is a collegial department and recent faculty hires have helped reinvigorate research and attract students. Continued mentoring of these faculty is essential as is monitoring and addressing of unequal teaching or service commitments that may be barriers to establishing or growing research labs.
- EAS should update and provide department tenure standards in an easy-to-access place and provide examples of past successful dossier to all junior faculty
- As noted earlier, we endorse the desire to hire an additional professor of practice and an outreach position to support department curriculum and visibility initiatives.
- For faculty hiring, EAS should further prioritize its list of desired hires to focus on 1-3 critical themes, in areas that could best attract students, draw new research, and bridge existing strengths of junior faculty.

Space and Facilities

- We endorse making efforts to collectively plan and design EAS space for use to support department needs. The student lounge renovation is an excellent step in that direction as is long-term plans to re-purpose the library space.

Detailed Review

Curriculum

Curriculum was a recurring point of discussion during our visit. The college is concerned about EAS offering too many low enrollment courses and is unsure about EAS's approach to curriculum management. The EAS faculty feel overwhelmed by the responsibility of having to maintain their breadth of coursework with continually fewer instructors.

We have reviewed the undergraduate curriculum in the current online UNL catalog and find the requirements for the BS Geology and BS Meteorology programs to be quite reasonable. The core largely matches the standards of other programs and recommendations from the literature and professional societies (Klyce and Ryker, 2023; AMS, 2023). The BA Geology program is a trimmed down version of the BS Geology, requiring fewer STEM credits as is appropriate for a BA.

The Department is making curriculum adjustments in response to retirements, specifically, the EAS strategic plan provided in Appendix B of the Self Study Report states that EAS plans to remove Geol 301 Depositional Environments as a required course. This is a very reasonable

decision that will not negatively impact the competitiveness of the geology program. Beyond trimming a few elective requirements, there are not many other changes the Department could make to its degree requirements without putting them out of alignment with programs at other universities.

That said, there are areas where curriculum redesign could be beneficial. Both the Geology and Meteorology programs have quite extensive lists of elective courses. Based on the current online catalog, there appear to be approximately 40 elective geology courses and approximately 22 elective meteorology courses. During our visit, we observed a clear desire by the faculty to retain diverse course options for their students. The faculty should be commended for being student focused and wanting to provide them with broad training. Indeed, students benefit from having a robust selection of electives. However, it seems unrealistic to try to maintain the current number of electives with the current faculty size. We recommend the Department do a realistic accounting of their course offerings and teaching capacity, and adjust future catalogs accordingly. We recognize that there will be hard choices to make and such a process may need to occur in steps. Courses that have not been taught for a substantial amount of time or where the teaching expertise no longer exists should be removed or hidden from the catalog. Hiding or eliminating courses will make it easier for students to navigate the degree and temper expectations of the majors. Students get frustrated and disappointed when courses they see in the catalog are not offered at all during their four years at college. We heard a statement to this effect from at least one student.

During this course accounting exercise, the Department should identify which elective topics are of the highest importance and come up with a plan to maintain them at some predetermined cadence. These should be courses in areas that are going to be relevant to today's students and the job market of today and tomorrow (e.g., climate, water, severe events, critical minerals) and/or in areas where the department wants to maintain strength, such as experiential learning or electives most aligned with graduate training required for active research projects. Previous reviews suggested expanding hydrology expertise. The faculty hire in groundwater has been a step in this direction and has resulted not only in courses that are strongly enrolled, but tied to significant research activity. This approach to identifying hires that will advance both the research and teaching should be a general EAS goal.

We left with the impression that strategies for increasing enrollment in under enrolled elective courses is needed if the Department wants to retain them and meet the expectations of the College. This could be done by looking for opportunities to redesign elective courses to make them more relevant to other majors. For example, is there a role for creating a focus area in earth/atmosphere in the data science major? Another strategy would be to create minors that can be easily paired with other majors. There is a water resources specialization at the grad level. Could this be replicated as a minor at the undergraduate level? Rather than a climate track in meteorology, which may only serve to split up the current modest meteorology enrollment, could a minor related to climate studies be created that would be accessible to a broad array of students and not only those that have a quantitative rigor similar to meteorology? Finally, reducing the number of required credits for the Geology minor could make it a more

attractive option for students. There seems to be variation in credit requirements among different programs. The Department should work with the appropriate administrative unit to understand UNL's guidelines for a minor.

The Department could also consider adjustments to teaching loads of tenure/tenure-track faculty, in partnership with the College. We understand the teaching load in EAS to be three courses per year. By one faculty member's own account, research productivity is suffering because of the demand for teaching places on their time. We heard of one assistant professor who taught five different preps in two years. While we recognize that teaching loads vary among R-1 universities, using the departments of the three external reviewers as examples, we view the current EAS assignments as higher than similar departments. The teaching loads in the departments of the three external reviewers are either 2.5 courses/year (alternating between 1-1 and 1-2 or 2-1) or 2 courses/year. Given the low number of undergraduate majors, concern over low course enrollments, and desire to increase research productivity in the department, strategic re-assignment of teaching loads to encourage greater research and support of junior faculty may be an appropriate action. Thus, this transition should focus on reducing the load of the pre-tenure faculty and the most research active faculty. Faculty who are less research active could retain their three course per year assignment, or pick up additional teaching if appropriate to assure equity across faculty effort. Creating a flexible teaching assignment policy based on research productivity (grants, graduate advisees, etc.) may allow the Department to increase their ability to help the university meet its goal of attaining AAU status.

We also support a department desire to consider an additional Professor of Practice hire to support introductory courses and majors requirements. Any proposal to hire in this role will require a clear assessment of current teaching capacity, curricular review, and strategic curricular vision. Further, this hire would likely have to balance against any plans for tenure/tenure-track hiring.

Undergraduate majors

It was very clear from the site visit that the Department is very committed to its undergraduate program, and undergraduate teaching in general. The students who met with the review team appeared to enjoy being in the program and the opportunity to engage with faculty. There are active student clubs and social events for majors, as well as a recently refurbished lounge for students to congregate. By all accounts, the department's majors are receiving excellent instruction and training to prepare them for their future careers. While tracking students after graduation is challenging, there is ample evidence that graduates are landing good jobs in their fields and getting placed in strong graduate programs. The main issue, everyone seems to agree, is the low number of majors, which often leads to low enrollment in critical courses in the program.

One recommendation for the department is to create minors with a special focus on areas such as meteorology, climate, and environmental geology. These minors could be developed in partnership with other units across campus, such as Environmental Science. Another

recommendation is to develop a focus area in the university's new and growing data science major. Both of these suggestions could help increase enrollment in core courses for the department's majors.

An additional idea which might aid in recruiting majors is for the Department to grant every major a scholarship from their endowment funds. In fact, this is an idea practiced at one of the review team's institutions. This might become expensive if the number of majors grows, but consider that a good problem to have!

One other recommendation was suggested by one of the undergraduate students who met with the review team. Students sometimes have classes or labs which conflict with the Stout Lectures and/or the reception that precedes. To increase undergraduate participation at these events, the department should consider avoiding scheduling classes or labs at these times.

Graduate program

The graduate program in EAS has several strengths that contribute to a generally positive student experience. Student morale is notably high, with many expressing satisfaction with the mentorship and support offered by both advisors and the department. This nurturing environment is essential for student development and academic success, highlighting the program's commitment to fostering a supportive atmosphere. Moreover, graduate students generally perceive a favorable outlook for job placements after graduation, indicating that the program aligns well with industry needs and trends.

On the academic side, the committee heard concerns regarding the limited availability of graduate-level courses within the EAS program, particularly given the program credit requirements for such courses. A thorough review of the current offerings is essential to ensure they align with student needs. As noted earlier, eliminating outdated courses that have not been offered in years would not only prevent disappointment but also help streamline the curriculum.

The committee was surprised to learn about a perceived lack of integration between graduate students in the Geosciences and Atmospheric Science programs. Some students mentioned that their interview with the review team was their first opportunity to interact with peers from the other program, despite both groups working in the same building. To enhance the interdisciplinary experience, the EAS department should promote increased collaboration between Geosciences and Atmospheric Science students. This could be accomplished by creating more opportunities for joint projects, seminars, and social events aimed at fostering networking and community-building within the department. The new departmental lounge may help students more easily connect socially and professionally across disciplines.

Regarding graduate student recruitment, EAS should consider sending representatives to organizations like SACNAS and other relevant conferences to actively recruit students. Engaging with diverse communities at these events could not only broaden the program's appeal but also strengthen its commitment to inclusion and diversity. As noted earlier, EAS

should actively pursue an integration with UNL's new data science degree program, which could attract students interested in interdisciplinary studies, thereby expanding the program's appeal.

The committee further recommends that the EAS consider offering a non-thesis option for the master's program. This could potentially shorten the time to degree for both MS and PhD students, as most of the PhD students in EAS pursue an MS degree initially. Additionally, a non-thesis track may attract a wider range of students, particularly those interested in general education, thereby enhancing the program's accessibility and cost-effectiveness.

Research

EAS tackles problems critical to understanding and stewarding our planet, spanning key questions around Earth system dynamics, past and future climates, weather extremes, sustainability of critical minerals, the origin and evolution of life, discovery of energy resources, safeguarding our water and environment, and education and communication in the geosciences. It is in UNL's best interest to ensure that EAS maintains leading positions across this research portfolio.

However, there appears to be a mismatch in perceptions of overall research quality and productivity between the college and the department. The review committee found dedicated researchers and faculty working on leading topics in the discipline supported by extramural funding, capably recruiting and mentoring graduate and undergraduate researchers, and publishing high impact papers in leading journals for our discipline. However, it's also evident that from the college's perspective, this dedication is not translating into demonstration of impact to the college. Discussions with the Dean's office revealed that the Department's research performance is considered subpar, ranking it at the lower end of productivity and impact metrics compared to other departments in the college. While Academic Analytics is a blunt instrument that often misses important aspects of research productivity, trends within can be used as a guide to understand what areas could use improvement and how to recognize and reward top performers.

In contrast to the message we heard from the Dean's office, the self-study report states that EAS surpasses the median in several key areas, including the number of faculty with federal grants, publication counts, total articles published, and citation rates. This discrepancy indicates possible gaps in strategic planning, faculty support, and collaborative efforts that need to be addressed to improve the Department's standing with the college. The goal is to create a supportive research culture in EAS that not only meets, but exceeds the standards set forth by the college, ultimately benefiting faculty, students, and the broader academic community.

As a first step, conversations with the Dean's Office should be initiated to better understand the differences in perception. This partnership should have a goal to facilitate a clearer understanding of the expectations and norms within the college and help define what constitutes success for the Department. The key is identifying issues at hand and formulating strategies that help a) increase visibility of research impact and b) reward and support EAS faculty

conducting high impact research and seeking out funding across multiple avenues. Data should focus on productivity and overall goals over perception and effort. The department, and in particular, the Department chair should become familiar with the metrics used by the Dean's office to evaluate research productivity. EAS should maintain additional evidence of research productivity beyond such tools as Academic Analytics, to demonstrate quantity, quality, and impact of research.

The department identifies a desire to enhance engagement across campus, especially with the College of Agricultural Science and Natural Resources. It is apparent that several faculty have successfully collaborated with that unit. Continued efforts on this line could be one way to increase research productivity.

Research is also an area where the Department could make strategic use of endowment funds to create incentives that support its research goals. For example, seed grants to incentivize collaborative projects may help increase preliminary research needed to enhance grant submission success rate and impact. Identify and focus on existing areas of strength within the Department to elevate EAS's overall status. Capitalizing on these strengths will not only enhance visibility but also attract funding and collaboration opportunities. A model of "insurance" funding, whereby the unit provides back-up support for research assistants/students in case a submitted proposal is declined, could be used to incentivize an increase in submission rate. Other incentives, including flexible teaching schedules or releases to develop larger research proposals or execute major projects, could be considered. Pursuing funding beyond traditional outlets (e.g., beyond NSF), including Dept of Energy, Dept of Defense, state agencies, foundations, and the private sector, should be encouraged.

Ultimately, developing a supportive research culture is the right approach. Highlight key papers, student successes, and research results, in partnership with university communication offices. Nominate leading researchers for campus and disciplinary awards. Identify core research strengths, for example in climate and in sedimentology, and build on those in hiring, collaborative proposals, and partnerships across campus. Develop sessions for faculty to learn more about connections to research groups outside EAS, both within UNL and across the state. Consider whether EAS would benefit from additional shared funded technical roles for lab support.

Visibility and outreach

The main outreach effort mentioned in the self-study is the annual Dinosaurs and Disasters Program which is held at Morrill Hall and open to the general public. By all accounts, this is a very successful program which engages visitors of all ages. Additional outreach mentioned include public lectures given by faculty, engaging with K-12 educators through NMSSI courses, and other outreach activities funded by external grants.

To increase its outreach and visibility, the department might consider an on-campus Earth Day event for high school students. Such an event could also be targeted toward UNL

undergraduates to increase the visibility of the major. The Department could also partner with Environmental Science in the School of Natural Resources to organize the event. Another idea for engaging high schoolers is to create a program modeled after UNL's Math Circle program (https://newsroom.unl.edu/announce/csmce/15456/86407), which brings together faculty and high school students for hands-on activities. Further suggestions include developing additional Nebraska Math and Science Summer Institutes (NMSSI) courses and creating field trip opportunities for high school educators.

Of course, outreach efforts require significant resources, particularly faculty and staff time, who already seem very stretched. We strongly recommend that the department move forward with the ongoing efforts at hiring an outreach coordinator, if possible.

Community, diversity, and inclusion

Efforts to sustain inclusion and retain diversity are central to any department's mission and EAS has put that into practice. The review committee found EAS to be extraordinarily collegial, with most faculty, staff, and students reporting a high level of satisfaction of community and efforts to improve that community. Many of these efforts center on work by an active DEI committee, a beautification committee, and by regular discussion among all members of the department.

EAS founded its DEI committee in spring 2021 and participated in the nationwide Unlearning Racism in Geosciences (URGE) conversations. Since that time, faculty have worked on efforts like writing a code of conduct, developing guidelines for safe and inclusive fieldwork, adopting rubrics for use in graduate admissions and faculty hiring, and hosting seminars and speakers on advancing equity and inclusive teaching. Efforts we heard about to broaden the pool of speakers in seminar series and provide accessibility in field trips (including virtual options) are to be commended. Collectively, these actions are best practices across geoscience departments in the country and EAS should be recognized for making concrete gains in these areas.

Like many departments, the challenge is often in prioritizing among the many possible activities that promote DEI. We recommend making efforts to finalize and publicize the code of conduct. We found that many students were not aware of these activities. Without broad buy-in, actions like this can lead to confusion about processes such as grievance reporting. It is also important to vet these types of codes with campus leadership and legal, to make sure processes spelled out and values articulated within are in line with campus HR policy.

We also recommend adopting practices for greater student involvement in building an inclusive department community. Consider how you might engage a broader range of students in a larger number of department related committees. Students often have capacity and desire to engage in actions that build community and provide professional development, such as social media, community outreach, high school recruiting, and so on. Empowering the existing student organizations in EAS to also tackle issues around DEI is another way to broaden reach.

The department also noted a need to recruit and retain a diverse student body, faculty, and staff. The existing professional development course for graduate students may be one area where actions around inclusion and retention could be directly addressed. Other potential items to consider include: academic mentoring programs that pair graduate with undergraduate students, graduate admission questions that specifically seek to identify students who overcame barriers in academia, clear processes for reporting and responding to harmful or hateful conduct, bystander intervention training, and informal social events led by and centered around varying identities (gender, sexuality, background), to the extent allowable within the rules of UNL.

Faculty and staff

Our committee finds the EAS faculty and staff exhibit a high level of engagement and collegiality. For junior faculty, we found that recent hires are making great strides in building their research programs and building their teaching portfolio. Mentoring was perceived as positive. Some of the recent hires did express concern about the lack of clarity on the tenure process and elements of successful dossier / tenure standards. Consider developing and providing department tenure standards in an easy-to-access place and provide examples of past successful dossier. One option would be to put these into a department specific set of mentor guidelines for mentor committees, which can be used to have a structured set of conversations about building that dossier.

Another issue identified was the challenge of high rotation of courses among junior faculty, discussed in more detail in the section on curriculum. Several are completing a large number of new preps over a short period of time, partly due to desires to offer upper-level courses relevant to their students, but lacking enrollment. Again, this example emphasizes the need to develop a long-term curriculum planning processes, while also considering protecting junior faculty research time by minimizing new preps.

We also found that EAS has instructional staff (a lecturer and professor of practice) who are deeply engaged in the success of the department. Given their presence in many courses, students often come to them as informal advisors. Providing support for these roles and considering whether to hire an additional professor of practice (or converting the lecturer position to one) may be worthwhile investments to retain these staff, and support them in initiatives that grow enrollment across the curriculum, build student community, and engage in activities noted in other sections.

The office staff based in EAS is relatively small given strategic movements toward shared services by the university and college. However, we find the place-based office staff of key functions to be critical to high functioning departments. Office staff can also be important conduits to supporting inclusion and diversity, through being trusted contacts for issues around community and personnel. Similarly, the shared advisor has an EAS heritage, and there may be opportunities to better connect students to the advisor through outreach events and including

the advisor in curriculum planning discussions. Finally, as noted in the visibility section, we endorse EAS' desire to add outreach/communications related position.

Finally, we recognize the desire to continue to recruit top faculty to EAS. The self-study provides a list of six planned hires, which we would recommend to further prioritize. Perhaps focus on 1-3 critical hires, particularly in areas that could best attract students, draw new research, and bridge existing strengths of junior faculty (e.g., land-atmosphere interactions). What is EAS' brand? Focus on areas of demand over specific expected curriculum gaps.

Space and Facilities

While the past self-study had brought up several major considerations on space and facilities, this need was less emphasized in the current review. EAS is making the best use of the space it has, despite some challenges in maintenance and lab facilities. EAS is working on these issues. We commend EAS for making efforts to build an attractive student lounge. Promotion of this space (perhaps a ribbon cutting and working with majors on provisioning of arts, decorations, and supplies) will be good to build critical mass on usage.

The beautification committee has made great efforts to update spaces and materials on monitors and walls. Continued work on reducing hallway clutter (e.g., empty or unused map/mineral cabinets) should continue to provide more natural flow on primary floors. We are aware of movement afoot to reclaim/redevelop the current but likely underused library space. We endorse making efforts to collectively plan and design that space for use to support department needs.

Conclusion

The Earth and Atmospheric Sciences Department at the University of Nebraska-Lincoln has a long history and a bright future. We find within a convivial atmosphere that provides valuable educational experiences and is attracting high-quality students. We noted many positive initiatives taken since the last review that have brought in new faculty, new research directions, and improved space. The challenge now lies in building on that growth while facing departures of several high performing faculty while enshrouded in a budget-constrained environment.

A common theme across our recommendations is a desire to maintain an open line of communication between the college and the department. They should be partners in finding solutions to challenges related to recruiting and retaining faculty and students, growing the major, supporting high quality education, building an inclusive environment, and sustaining facilities. We noted several areas where there is a mismatch in perceptions leading to differing expectations on where to prioritize actions. An open discussion between each about their respective expectations and goals is a necessary first step before embarking on any of our recommendations or moving forward on processes like curriculum revision, evaluating teaching load, increasing research productivity, or hiring of future positions in outreach, teaching, and

faculty. EAS has the capacity and financial resources to help seed many of these initiatives, but it will require prioritizing.

Our sections above are designed to answer the questions noted in the college's request for this report and the self-study, around collegiality, undergraduate educational experiences, the structure of the graduate program, research growth, recruiting a diverse team, promoting visibility of department accomplishments, and aligning department teaching and research missions towards leading global issues of our time.

While our list of recommendations is long, they should be used as a guidepost or menu of ideas from which EAS should prioritize based on conversations with the college as noted above. Improving and sustaining an academic program is a process. Our recommendations are based on the information we were provided, what we heard and saw from our visit, and our experiences with similar challenges in our own programs at peer institutions in the present or recent past. It is easy to get demoralized in a tight budget environment. But it is also an opportunity to capitalize on that collegiality of the existing community and rededicate to the mission of the program, in partnership with the college.

Citations

Annie Klyce & Katherine Ryker (2023) What does a degree in geology actually mean? A systematic evaluation of courses required to earn a bachelor of science in geology in the United States, Journal of Geoscience Education, 71:1, 3-19, DOI: 10.1080/10899995.2022.2076201

AMS, 2013, Bachelor's Degree in Atmospheric Science, An Information Statement of the American Meteorological Society, adopted 17 November 2023. https://www.ametsoc.org/index.cfm/ams/about-ams/ams-statements/statements-of-the-ams-in-force/bachelors-degree-in-atmospheric-science/

10.3 Letters of Support Referenced in the Narrative

10.3.1 APR 2024 Review Team Letter of Support

A. Desai – Univ. of Wisconsin, W. Zhu – Univ. of Maryland, K. Franz – Iowa State Univ.

24 September 2025

Dear University of Nebraska-Lincoln Academic Planning Committee,

As external members of the Fall 2024 program review team for the Department of Earth and Atmospheric Sciences (EAS) at the University of Nebraska-Lincoln (UNL), we are writing to express our deep concern regarding the proposal to close the department and discontinue its undergraduate and graduate programs.

Last year, our team reviewed the program's self-study, met with its dedicated faculty, staff, and students, and discussed program challenges and strengths with college and campus leadership. Through these conversations, our report noted that we found a department with significant strengths in tackling key challenges in Nebraska and the nation towards harnessing Earth's resources such as water and minerals, for improving protection from extreme weather and natural hazards, and in understanding the history and future of our planet. Over its history, EAS has graduated top leaders in our field and for the state in these areas.

Over the past decade, EAS' rate of major production, course offerings, and research productivity in the discipline are on par with its peers at other Research I institutions. Though our review team noted the program's recent challenges in enrollments and the departure of some high-performing faculty, we view these events as near-term and short-term. The department, the college, and our review team identified key action items for the department to undertake to regain its historical strength and productivity. For our review to have meaning, UNL should provide EAS the opportunity to deliver on that charge, after which its long-term fate can be more appropriately addressed.

As we noted in our report, "EAS addresses some of the most pressing global problems around climate, water, extreme events, and sustainability, while advancing basic science of the Earth and atmosphere, and its interconnections". For a flagship campus to not offer degree programs in geoscience and meteorology, in a state whose leading industries in agriculture, insurance, and transportation are dependent on an educated workforce who can apply those topics, is a misstep that we believe will reverberate statewide for decades to come.

We realize that the budget situation at UNL has become dire, as it has at many universities nationwide. However, it is short-sighted to use that as a reason to wholesale terminate successful long-running programs with student and workforce demand and to close departments rather than seek efficiencies. UNL has a unique opportunity with the existence of its strong natural resource programs and expertise in agricultural sciences and drought management, to better connect those programs with EAS faculty, students, and research.

Our report concluded that "The Earth and Atmospheric Sciences Department at the University of Nebraska-Lincoln has a long history and a bright future" and we stand by that statement. We argued in our report that this will be best accomplished by having the college and the department act as "partners in finding solutions to [its] challenges". We implore the UNL APC and campus leadership to embrace shared solution making and to proceed along that vein.

Sincerely,
Ankur R Desai, Distinguished Professor of Atmospheric and Oceanic Sciences, University of Wisconsin
Wenlu Zhu, Professor, Department of Geology, University of Maryland
Kristie J. Franz, Ames, Iowa

10.3.2 Compelling Letters from Students: Past, Present, Future

A. Aspen Hemmerling, Lincoln Northstar High School, anticipated admission Fall ‘26.
B. Joe Stalder, undergrad geology major, UCARE scholar, B.S. expected Spring 2026
C. Kiersten Blomberg, Ph.D. student, Geoscience Education, Atmospheric Sciences
D. Amanda Osborn, EAS alumnus, B.S. 2015 - Geology, M.S. 2018 – EAS
E. Leah LeVay, EAS alumnus, B.S. Honors 2006 – Geology, Ph.D. 2012 Penn State
F. Michael Moritz, EAS alumnus, B.S. 1992 – Meteorology/Climatology

Aspen Hemmerling
8101 N 1st St.
Lincoln, NE
September 25th, 2025

Dear University of Nebraska-Lincoln,

Hello, my name is Aspen Hemmerling and I am a senior at Lincoln North Star. Ever since I was a kid I've wanted to be a student at UNL. I have attended all sorts of camps and activities run by UNL and have made several meaningful connections with the students and professors there. I never thought I'd need to write this letter, but I also didn't think the University would propose a cut to the department that I've invested so much into.

I have always loved geology. As a child I was fascinated by my science classes, especially those that were focused on the earth and atmosphere. Although rudimentary now, I thought it was fascinating how materials on earth change naturally. In middle school my seventh grade science teacher Ms. Felker taught me about more complex issues like climate change; I began to understand the implications of the climate disasters I saw and heard about. In high school I took a geoscience course taught by Mr. Wrenholt. He showed me that there is an entire field dedicated to the climate issues that I am so passionate about. When I began researching where I wanted to go to college, I was elated when I learned about the geology major at UNL and I was beyond excited to become the scientist I always wanted to be.

Up until autumn of this year, I had planned the next several years of my life—and onward—around an undergraduate and possible graduate degree in the EAS (Earth and Atmospheric Sciences) department. I have been on several college visits, but everything I need is at UNL; however, recent discussion is making me—and many others—reconsider their choices.

With the increasing concern over rising global temperatures and extreme weather events that eventually lead to economic, political, and social issues, it seems rather counterintuitive of the University to dismantle the very department that is designed to produce young scientists who aim to slow the effects of these issues. It is instrumental to the health of this generation and generations afterwards that we take charge of the change that is occurring within and around our planet. As of right now, global temperatures are continuing to warm exponentially, with 2025 on track to be one of the warmest years on record. We continue to see more and more climate disasters that have increased in extremity, including record-setting heatwaves throughout the USA, Canada, Hawaii, Europe, and even Alaska, which had its first official heat advisory in June of 2025. Although the current presidential administration has withdrawn itself from the Paris Agreement, promoted the use of fossil fuels, repealed restrictions on environmental regulations, and dismantled several climate-focused programs, it doesn't mean that UNL needs to follow suit. UNL can be a proponent of climate-based activism and the EAS department will play a key factor in it.

In the spring of this year I met with Dr. Harwood from the EAS department and we discussed the research that Nebraska scientists conducted during the ANDRILL (Antarctic Drilling) project. ANDRILL focused on revealing climate change history by examining ancient sediment cores. The research has played a critical role in the discovery of our planet's climate history and how we should act moving forward. I was so amazed to see how large of an impact local scientists had on a global scale and I was very eager to come to the University and be granted the ability to do similar things.

During the summer of this year UNL offered a Big Red summer camp for geology. I met so many high school students who are interested in the EAS department and I was ready to see them at UNL during the next few years. At the time I was also trying to nail down a specific major I wanted to go into. Dr. Filina from the EAS department hosted the camp and she helped me decide on finally enrolling as a geology major, which was a major relief. At this moment I have not applied, as I am still grappling with my choices. It seems like an oversight that a geology camp was offered right before proposing a shut down of the department that houses geology. All events that I have attended, enjoyed, and paid for in the last few years have been to decide where I am going to college and what major I will be going into. I feel that I invested so much into the department and I would really hate to see it go. My love for geology will persist if the proposed cuts are made, but I'll begin to have a growing resentment for the University I once cherished.

I have invested so much time and effort into becoming a geology major, and to see it proposed to be cut is very disheartening. If the plan that UNL had once assured me falls through, I'll have to decide if another college is more suited for me, as many other students may also decide. I never thought that any science department would be sacrificed, and it never occurred to me that the EAS department was in any danger since UNL has recently been promoting it through camps and other opportunities.

The University's statements have been making me feel rather hopeless about my future, but many professors and students who I've communicated with are giving me hope for the department. I cannot solve a $27.5 million debt and I recognize the issues that come with such a large deficit, but I have to ask that the University reevaluates its proposed cuts. The EAS department is a key part of UNL's college of Arts and Sciences as it fuels part of the research that UNL prizes itself on. So many people have centered their lives around the EAS department; students, professors, and alumni seek to reverse escalating issues in the world because of the opportunities UNL provides to them. So, I ask you this today as a young scientist hoping to change the world before it's too late: please, don't discard the Earth and Atmospheric Sciences department. It means the world, truly, to those who care.

Sincerely,

Aspen Hemmerling

Joe Stalder

9/19/2025

To the Academic Planning Committee:

I am writing to you today to request that you reconsider the elimination of the Department of Earth and Atmospheric Sciences at UNL. There are a number of reasons why I believe this to be a grave mistake that could lead to the loss of reputation of our beloved university.

The Department of Earth and Atmospheric Sciences has a long and successful history. The graduates of this program have gone on to secure jobs in academia, government, and industry positions with a very high success rate, many of whom stay in Nebraska after graduation. Graduates of these programs are well prepared by the faculty within the department, who are very prestigious researchers in their own right. While the department might be small, there is fantastic research coming from the faculty across disciplines, from climate research, geophysical studies, and energy and groundwater resources. Simply walking through Bessey Hall proves this to be true, as the hallways are lined with research posters and display cases. Eliminating EAS also eliminates the valuable research that affects our state and country.

I think it is easy to forget how impactful Earth and Atmospheric research is to our daily lives. Let me give you some examples. Because of this research, we don't need to worry about when the wells that supply our drinking water will run out. This research forecasts our daily weather and keeps us safe during storms and natural hazards, like floods and earthquakes. Much of the energy that powers our buildings comes from fossil fuels, and it is geologists that find those resources. The discovery of critical mineral deposits by geologists is the first step in the development and production of new technologies. The impact of earth and atmospheric sciences is far reaching, and it affects every single one of us every day of our lives.

Now more than ever we need *more* geologists and meteorologists, not fewer. We are entering a time of uncertainty, and these scientists will play a key role in keeping our lives stable. Water resources are becoming less abundant as we use up the water in our aquifers. The need for energy is growing as our reliance on technology increases, and we need scientists to find those resources. As our country begins the energy transition, we need scientists to find clean energy sources that are sustainable and economically feasible. Anthropogenic climate change has already started impacting the lives of citizens in our country, and we need scientists with expertise to guide us through the uncertainty. The Department of Earth and Atmospheric Sciences at UNL is one of the best places to train these geologists and atmospheric scientists. Now is not the time to be cutting this important program.

Finally, I'd like to end on a personal note. This department changed my life. As a student that grew up in a small Nebraska town, I didn't know that science was a viable career option. I

had never met a scientist until my first geology class at UNL, but that is where I realized it was possible. Through this department, I have met some of my closest friends and mentors who push me to pursue my goals after graduation. As an undergraduate as UNL, this department has given me the opportunity to work on my own research projects, and I will even be a coauthor on a paper within the next year. It makes me extremely sad to think that future Nebraska students would not have this opportunity as well. I have been here for five years now, and I can say without a doubt that the Department of Earth and Atmospheric Sciences has the most passionate faculty on campus. Eliminating this department would get rid of some of the greatest professors that this university has to offer.

Again, I humbly request that you keep the Department of Earth and Atmospheric Sciences alive at UNL. We need it now more than ever.

Sincerely,

Joe Stalder

Kierstin Blomberg
Graduate Student/University of Nebraska – Lincoln
Lincoln, NE
09/24/2025

Academic Planning Committee
University of Nebraska–Lincoln

Dear Members of the Academic Planning Committee,

I am writing to express my strong support for the Department of Earth and Atmospheric Sciences (EAS) and my deep concern over the proposed elimination of this department and its degree programs.

I am currently pursuing my Ph.D. in EAS with a specialization in Geoscience Education, and my research focuses on Atmospheric Sciences Education. This program is unlike any other in the region. Not only is EAS the only department in Nebraska that offers a degree in Atmospheric Sciences, but it is also one of very few programs nationwide that integrates a formal education specialization. As a young and growing research area, Atmospheric Science Education benefits tremendously from having faculty leaders such as my advisor, Dr. Dawn Kopacz, whose expertise was the reason I joined this program.

But the reason I have stayed and thrived here goes beyond my specific research interests. Having been part of other graduate programs before, I can say without hesitation that the culture in EAS is unique and special. The faculty foster a collaborative community rather than competition. Their support and encouragement have given me the confidence to pursue ambitious goals I once thought were out of reach. Because of this environment, I have won awards, been accepted into the NSF NCAR Graduate Visitor Program in Boulder, CO, and have been able to chart my own path in research I am genuinely passionate about. This program has given me the sense that I am in the driver's seat of my graduate career, which is rare and invaluable.

The proposed elimination would not only take away the only Atmospheric Sciences program in Nebraska, but it would also dismantle a department that is nationally recognized for its excellence. EAS faculty have published in leading journals such as Nature and Science, earned prestigious NSF CAREER awards, and brought millions of dollars in external research funding to Nebraska. Their students, both undergraduate and graduate, go on to fill critical roles in public service, industry, and academia - helping to keep our communities safe from severe weather, ensuring access to clean water and resources, and advancing our understanding of the Earth system.

I urge you to recognize the unique and irreplaceable role of the Department of Earth and Atmospheric Sciences at UNL and to recommend that the department and its programs be maintained.

Sincerely,
Kierstin Blomberg

University of Nebraska - Lincoln

Kierstin Blomberg

Ph.D. Student

She/Her

University of Nebraska–Lincoln

Earth and Atmospheric Sciences

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kblomberg@huskers.unl.edu

Amanda (Jones) Osborn, UNL-EAS alumnus, Geology, 19 Sept 2025

Comments to UNL APC

Experiencing the Earth and Atmospheric sciences program through my undergraduate and graduate degree work made innumerable positive impacts on my life and career. The small class sizes allowed for personal and in depth teaching styles I didn't experience in any other program at UNL, and were a one of a kind learning experience that included hands on field work and real life applications of what we learned in the classroom. The program focused on a wide variety of Earth sciences I would have had no other way of learning about at a collegiate level in Nebraska and making connections between classroom work and real life examples. My time in EAS at UNL gave me the technical foundation and practical experience that have been absolutely vital in my professional career, as well as allowing me to pursue a career focused on my passions; my home state of Nebraska, geology, and environmental science. This program has allowed me to take these passions and apply them to environmental and government work, fields that directly serve the public and address pressing issues in our state. As someone who was born and raised in Nebraska it is an absolute honor to be able to work in this field and that would not have been possible without the EAS program. The mentorship I received while there and the connections I built have benefited me in numerous ways even years later and it would be extremely shortsighted to cut these programs and deny the same opportunities for students interested in pursuing similar trajectories.

One of the most memorable experiences of my life was the culmination of the undergraduate Geology program; the weeks long field camp experience that was held in Wyoming at that time. Spending time outside the classroom mapping formations, analyzing soil and rock samples on site, and problem solving as a team with my fellow students was transformative. It showed me concepts and theories I'd spent months studying in real-world applications and challenges. This unique experience is one I am unaware of any other program at UNL replicating and sets EAS students up to succeed in their professional careers in a way unlike any other. That experience (and many other EAS experiences) not only prepared me for my career but gave me lifelong colleagues and friends, and the bonds formed during those long field days are deeply important in building a young persons personal and professional network.

One of the State of Nebraska's most precious and unique resources is its groundwater - without the Earth and Atmospheric Sciences program there is no way to adequately train and educate young professionals interested in this field. Climate change, extreme weather, natural resources, soil health, land use, and environmental and natural hazards are some of the most pressing issues that Nebraskans face every year, and any educated scientist will tell you that these issues will only increase in importance as we continue on. With agriculture being one of the biggest economic factors for our state is is more important than ever to encourage those interested in researching and going into fields such as these to study and eventually work here in Nebraska. Our state has a particular vulnerability to these factors and local expertise will make the difference in whether we are able to continue to thrive as a state or waste our chance at securing the future we all want. The EAS program's interdisciplinary research pursuits and the potential loss of these will be felt across many other programs, so this cut would not only decimate the obvious named programs, but negatively impact those including agriculture, natural resources, public policy, biology, urban planning, environmental studies, and many more - additionally we would be losing the opportunity to educate non-majors in the introductory level elective courses that build

scientific literacy, critical thinking, real world applications of science, and spatial skills in students who otherwise would not have a similar opportunity to do so. The EAS program has many internationally respected scientists in its faculty, losing these would be an enormous blow to the state as they will be forced to take their expertise and knowledge elsewhere.

Scientific Ocean Drilling
DIVISION OF RESEARCH

TEXAS A&M UNIVERSITY

Dr. Clinton Rowe
Professor & Chair
Department of Earth and Atmospheric Sciences
University of Nebraska, Lincoln

September 14, 2025

Dear Dr. Rowe,

I was greatly distressed to learn of the University's proposal to eliminate the Department of Earth and Atmospheric Sciences (EAS) on 12 September. I am a proud Husker alum, earning my B.S. in Geology from UNL and graduating with honors in spring 2006. Presently, I am the Director of Science Operations for the Scientific Ocean Drilling Coordination Office (SODCO) at Texas A&M University. It is entirely truthful to say that I would not be professionally where I am today nor the person I am today without my four years in EAS.

I grew up in the Hastings area and, like many others stuck in a small town, when it was time to think about college my highest priority was leaving the state. My mind was set on entering the field of geology and I visited several out-of-state public universities. Because it was the fiscally responsible thing to do, I toured UNL as well. At the end of that day, after visiting with representatives from the Geology Department (prior to it being part of EAS), I was 100% committed to attending UNL. Of all the visits I had, it was the only one where the professors spoke to me with genuine care and curiosity about my interests. It was also the only department that clearly prioritized undergraduate research experiences, which was important to me.

My first semester in the geology program I not only received a scholarship from the department, but I was also hired to start working in the lab of Dr. David Watkins (now retired). I continued to work in the lab of Dr. Watkins all four years of my program and I completed an undergraduate honors thesis under his supervision.

I have heard that one of the reasons that EAS is being considered for cuts is because of its size. As an undergraduate it was the size of the department that made my experience so impactful and meaningful. I knew all the faculty members, and they knew me. I was involved in the geology club, the student chapter of the American Association of Petroleum Geologists (AAPG), and I attended the Stout Lecture Series every week. It was not just a degree program; it was a community. Bessey Hall was a second home to me. When I wasn't in class, I popped down to the Geology Library to study. Walking down the hall, I would run into my friends. We went on field trips every semester, which were challenging but so much fun. The entire environment fostered an experience that I absolutely loved and made learning incredibly exciting and accessible.

Following graduation, I nearly stayed at UNL to pursue a Master's in Geology. Instead, I attended Penn State University and received my Ph.D. in Geosciences in spring 2012. Without the high-quality education I received at UNL, from course work to research experience, there is absolutely no way I would have been accepted into the doctoral program of one of the top-rated geosciences programs in the country. After obtaining my doctorate, I interned at ConocoPhillips before joining the Integrated Ocean Drilling Program/International Ocean Discovery Program (IODP) at Texas A&M as a staff scientist. I have worked my way up through the organization over the last 13 years and I am now a Senior Research Scientist at Texas A&M. I have mentored ~20 undergraduate researchers at Texas A&M and I try to give them the same experience that the professors at UNL gave to me.

1000 Discovery Drive • College Station, TX 77845 • USA
(+01) 979-845-2673

In March 2023 I was invited back to EAS to give the Stout Lecture. It was a delightful experience being back and speaking with current faculty and students. Though many of the faculty members I had classes with are no longer at UNL, the current faculty are continuing the legacy of prioritizing students while also conducting internationally recognized research. It is exciting to see how the department's research focus has evolved since 2006 and how it is focused more than ever on topics that impact the residents of the state.

I understand that the disciplines of meteorology and geology may not sound that important to a lot of people, but these areas of science are highly relevant to the people of Nebraska. The state of Nebraska enjoys a relatively risk-free existence (if you take a geology class you will know why!), but severe weather is the largest natural hazard threat to Nebraskans. UNL is the only school of higher education in the state to offer a degree in meteorology. Any kids who are interested in weather will have to leave the state – and will they return? UNO offers a bachelor's in geology and Chadron State offers a geoscience degree, but UNL is the only school offering graduate work in geology. Again, this program is not duplicated elsewhere in the state. Geologists in Nebraska study hydrology, soil, erosion, the stability of bedrock, and other topics that influence Nebraskans. If the Department of EAS is eliminated where will Nebraska find qualified scientists to fill future job roles in these fields?

I cannot imagine what my life would look like had I not attending the geology program at UNL – nor do I really want to know. I have such amazing memories thanks to the faculty members, staff, and other students in EAS. This department taught me how to be a scientist and encouraged me to explore research topics. It is easy for a committee to look at numbers of faculty, numbers of students, numbers of classes, etc., but this does not capture the scientific or educational impact of a department.

I will always be grateful to the faculty and staff of EAS for giving me a home while I was in Lincoln. There truly is no place like Nebraska.

Sincerely,

Dr. Leah (Schneider) LeVay, UNL class of '06
Director of Science Operations
Scientific Ocean Drilling Coordination Office
Texas A&M University
College Station, Texas USA

Michael L. Moritz
6110 Quail Ridge Avenue
Hastings, NE 68901

September 29, 2025

Academic Planning Committee
University of Nebraska-Lincoln (UNL)

Dear Members of the Academic Planning Committee,

As an alumnus (B.S. 1992, Meteorology/Climatology) of the Department of Earth and Atmospheric Science (EAS), I am writing to express my strong opposition to the proposed elimination of this department and associated degree programs.

Throughout my more than 30-year career in both public and private sectors of meteorology, the EAS Department has consistently distinguished itself as the only Atmospheric Science degree program, both undergraduate and graduate, in the state whose graduates meet the employment requirements of the National Weather Service (NWS). Nebraska is home to three NWS offices, with an additional three serving the state, and graduates from the EAS Department are fully prepared to enter the workforce upon joining the NWS. Numerous alumni have served, and continue to serve, the NWS in Nebraska, providing critical warnings and forecasts that protect the state's residents. Their in-depth knowledge of weather and climate impacts statewide is integral to the delivery of timely and high-quality forecasting and warning services. These professionals contribute meaningfully to their communities as engaged citizens, homeowners, taxpayers, and parents, with many, including myself, being parents of University of Nebraska-Lincoln graduates. The proposed elimination of the EAS Department would weaken Nebraska’s meteorological workforce, diminish longstanding connections with the UNL system, and perpetuate the science and technology “brain drain” identified by Governor Jim Pillen (Press Release, Office of the Governor, 2/5/2024).

Nebraska’s economy is substantially influenced by weather and climate. In 2024, the state’s Real Gross Domestic Product was $145.9 billion (U.S. Bureau of Economic Analysis). According to a U.S. Census Bureau survey conducted in 2023 and 2024, weather directly affected, on average, at least 10% of economic activity across the nation, with declines of 20-30% observed in certain states, including Nebraska, during significant events. Consequently, the annual direct impact of weather and climate on Nebraska's economy amounts to several billions of dollars and continues to increase. The EAS Department plays a leading role in research aimed at understanding the effects of extreme weather and climate, quantifying economic impacts, and developing strategies and new technologies for mitigation. Faculty members secure substantial research funding for Nebraska and prepare students for vital careers in both the public and private sectors, within the state and nationally. The department collaborates closely with the NWS, U.S. Air Force at Offutt AFB, National Drought Mitigation Center, Nebraska Water Center, and the Nebraska Department of Water, Energy and Environment, among others, to promote economic growth and sustainability.

In his September 4, 2025 “State of the University” address, University of Nebraska President Dr. Jeffrey Gold highlighted the institution’s financial challenges, while emphasizing that every dollar invested in the University provides a tenfold return for the state. Notably, the American Meteorological Society’s Weather Enterprise Study (2025) reports that a $1 investment in the U.S. Weather Enterprise yields the same $10 return. This metric directly reflects the contributions of the UNL EAS Department in education, workforce development, research, and innovation across water, weather, climate, and geology disciplines. Given the occurrence of multiple billion-dollar disasters, tornadoes, wildfires and floods in Nebraska in recent years, the proposed elimination of the EAS Department and its programs represent not only an ill-advised proposition but also a disinvestment in the future resilience of the state and its residents.

For these reasons, I strongly advocate for the continued support and maintenance of the EAS Department and its programs.

Sincerely,

Michael L. Moritz
B.S, Meteorology/Climatology, 1992
Former EAS Advisory Board Member
Adjunct Lecturer (2025), Satellite Meteorology

10.3.3 Letters from Organizations

A. American Geophysical Union (AGU), President - B. Jones
B. Geological Society of America (GSA), President – N. Niemi, Executive Director – M. Brandt
C. American Association of Petroleum Geologists (AAPG), Executive Director – Thomas Wilker
D. Nebraska Academy of Sciences (NAS), President - Tessa Durham Brooks and Board Members
E. U.S. Geological Survey (USGS), Emeritus Research Geologist – John Barron
F. Association of State Boards of Geology (ASBOG), President – Keith Rapp
G. Society of Exploration Geophysicists (SEG), President - Joseph Reilly
H. University Corporation for Atmospheric Research (UCAR), with 145 signatures
I. Nebraska Geological Society (NGS), with 49 signatures
J. American Geosciences Institute (AGI), President – A. Shaughnessy, Exec. Dir. J. Arthur

Subject: Concern Regarding Proposed Elimination of the UNL Department of Earth and Atmospheric Sciences

To: Academic Planning Committee, University of Nebraska–Lincoln

Cc: Clint Rowe, PhD, Professor and Department Chair

Date: October 3, 2025

Dear Members of the Academic Planning Committee:
On behalf of the American Geophysical Union (AGU), one of the world's largest scientific societies dedicated to advancing discovery and solutions in Earth and space sciences for the benefit of humanity, I write to express our concern about the proposed elimination of the University of Nebraska–Lincoln's Department of Earth and Atmospheric Sciences (EAS) and all of its associated programs.

We recognize the fiscal challenges faced by the University of Nebraska and the difficult decisions required in light of state budget constraints, as outlined in recent public announcements. At the same time, we respectfully underscore the unique role and national importance of the EAS Department to the state, the university, and the scientific community.

The EAS Department is singular in Nebraska for its academic offerings and workforce contributions. It provides the only Atmospheric Science degree in the state that qualifies graduates for the National Weather Service, and its Geology program is the sole pathway for professional geologist licensure. It also houses Nebraska's only graduate programs in Earth and Atmospheric Sciences. Faculty bring vital industry experience in energy and strategic minerals exploration—expertise critical to both state and national priorities.

Beyond these foundational roles, the Department's impact is remarkable with these highlights:

Research excellence: In the past five years, EAS faculty have published in Nature, Science, PNAS, and the Bulletin of the American Meteorological Society while securing more than $17.6M in external awards. Faculty achievements include NSF CAREER awards, national academy recognition, and prestigious teaching honors.

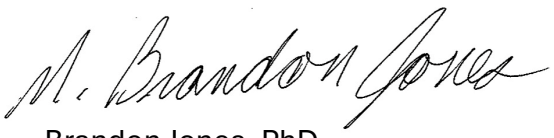
Student success: EAS students consistently earn NSF Graduate Fellowships, Fulbright Awards, and UCARE Fellowships, and nearly all graduates are employed in their field or pursue advanced study. Alumni serve across state and federal agencies, industry, and public-facing roles from the National Weather Service to broadcast meteorology.

Community leadership: EAS faculty lead statewide initiatives such as the Nebraska State Climate Report and community programs like Dinosaurs and Disasters, which have engaged thousands of Nebraskans for nearly two decades.

The Department of Earth and Atmospheric Sciences embodies the University of Nebraska's land-grant mission: advancing knowledge, preparing a highly skilled workforce, and engaging the community in addressing pressing societal challenges—from severe weather and drought to energy and mineral resources. Its loss would create an irreparable gap in Nebraska's educational, scientific, and public service landscape.

We urge you to consider the profound academic, scientific, and societal contributions of this department in your decision-making. AGU stands ready to support dialogue on sustaining this vital program in ways that align with the state's fiscal realities while preserving its unique benefits to Nebraska and beyond.

With respect and appreciation for your leadership during these challenging times,



Brandon Jones, PhD

President, American Geophysical Union

THE GEOLOGICAL SOCIETY OF AMERICA®

SCIENCE ▪ STEWARDSHIP ▪ SERVICE

September 23, 2025

Academic Planning Committee
University of Nebraska–Lincoln

Re: Proposed Elimination of the Department of Earth and Atmospheric Sciences

Dear Members of the Academic Planning Committee,

The Geological Society of America (GSA) respectfully submits this statement in strong opposition to the proposed elimination of the Department of Earth and Atmospheric Sciences (EAS) at the University of Nebraska–Lincoln. As leaders of GSA, we represent more than 17,000 geoscientists in academia, government, and industry worldwide, all dedicated to advancing geosciences in service to society. From groundwater management and environmental consulting to industrial minerals and weather and climate services, Nebraska's economy and public welfare depend on geoscientists. The Department of Earth and Atmospheric Sciences is Nebraska's only academic pathway into these careers; its elimination would jeopardize the state's ability to train the workforce that sustains its agriculture, infrastructure, and resilience.

As Nebraska's land-grant university, UNL carries a mission of teaching, research, and service to the people of the state. The Department of Earth and Atmospheric Sciences is central to that mission. It provides Nebraska's primary degree program that qualifies graduates for licensure as Professional Geologists, its only degree program in atmospheric science preparing graduates for careers in the National Weather Service, and its only graduate programs in the earth and atmospheric sciences. Without EAS, Nebraska would lose its in-state capacity to train the workforce needed for hazard preparedness, natural resource stewardship, and environmental resilience.

At the national level, the United States faces a looming shortage of geoscientists: nearly half of the current workforce is expected to retire within the next decade, even as demand for expertise in critical minerals, groundwater, carbon storage, and hazard mitigation continues to rise. Geoscience is among the STEM fields with the lowest unemployment rates, and graduates consistently secure strong employment outcomes in both the public and private sectors. In this context, Nebraska cannot afford to diminish its training capacity; doing so would not only weaken the state but also leave the nation less prepared to meet its growing workforce needs. From an economic perspective, a recent analysis by the American Geosciences Institute determined that the monetary and societal value of geological mapping and similar geological field investigations yields a 10-fold return on investment. This yield is recovered in fields as diverse as construction and real estate, mining and energy, infrastructure and transportation, environmental protection, agriculture, and insurance. Nebraska depends on educated geoscience professionals in their workforce.

The department's record is exceptional. Faculty publish in top journals, secure millions in external research funding, and earn national recognition, including National Science Foundation CAREER Awards and election to the National Academy of Sciences. Alumni lead vital institutions such as the National Drought Mitigation Center and the Nebraska State Climate Office, while outreach programs like *Dinosaurs and Disasters* engage thousands of Nebraskans each year, exemplifying the Morrill Act's vision of universities serving the public good.

The Geological Society of America strongly urges the Academic Planning Committee to recommend retention of the Department of Earth and Atmospheric Sciences. While recognizing Nebraska's budgetary realities, we encourage exploration of options that preserve the department's vital teaching, research, and service functions. GSA stands ready to provide expertise and partnership as the university navigates this decision, and we urge you to retain and strengthen this program in keeping with the land-grant mission to serve Nebraska and the nation.

Respectfully submitted,

Nathan A. Niemi, Ph.D.
GSA President

Melanie Brandt, MBA, CAE
GSA Executive Director and CEO

cc: Professor Emerita Priscilla Grew; Professor Clint Rowe- University of Nebraska

Tom Wilker
Executive Director
twilker@aapg.org

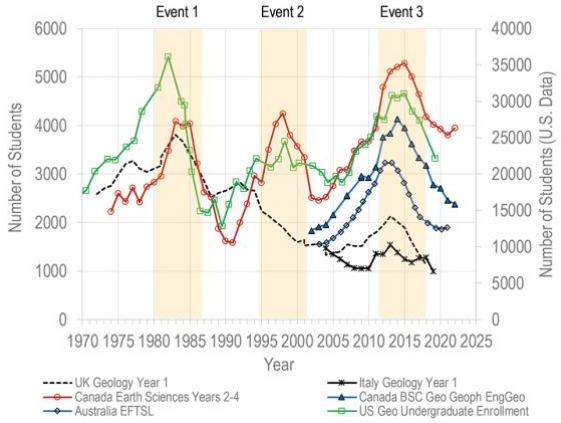
26 September 2025
Academic Planning Committee
University of Nebraska – Lincoln

Dear Members of the Academic Planning Committee,

I am writing to you to express my support for the University of Nebraska's Department of Earth and Atmospheric Sciences (EAS) and hope you will reconsider your plans to eliminate the department.

Our world is currently engaged in discourse around energy and climate change. Do we need to transition in the near term to new cleaner energy sources due to climate concerns or because of increased energy demand, do we need to be talking more about the addition of cleaner energy sources and making improvements to the delivery of existing energy sources. Either way, geoscience and atmospheric sciences will play a critical role in our energy future and there will be demand for graduates. Geothermal energy and carbon sequestration require applied geologic skills. Climate change studies require detailed atmospheric insights. Both of which, your EAS program delivers.

I represent the oldest professional association of petroleum geologists, and we are observing cyclical earth science enrollments that are resulting in declining university administration support and department closures, at a time when earth science departmental demand will rebound because of society's need to better understand changing climate and earth systems. The Geological Society of London published an article titled "Think Twice" on 30 May 2024 by Dr. Davide Elmo in their *Geoscientist* magazine that documents these cyclical trends nicely (https://geoscientist.online/sections/viewpoint/think-twice/).



Dr. Elmo asserts in his article, that enrollment data should never be the deciding metric to establish the importance of an academic program. Instead, he argues we must prioritize instruction and learning in areas that are critical to our earth's stainability and resources. He also finds it challenging to understand or predict this enrollment cyclicity due to the many and complex variables involved in these trends.

The University of Nebraska at Lincoln's EAS department has a successful track record of producing employable graduates. More than 92% of the departments graduate find employment in their field of study. And many of your alumni have gone on to prominent positions in governmental or public service organizations. The department is doing its job well.

I encourage you to be thoughtful in your deliberations and to be forward thinking about the role earth and atmospheric sciences will play in our future.

Sincerely,

Tom Wilker

Mail: P. O. Box 979, Tulsa OK 74101-0979 USA ● Street: 125 W. 15 Street, Tulsa, OK 74119 USA
Phone: 800-364-2274 (U.S.A./Canada) ● +1 918-584-2555 (Other Locations)

NEBRASKA
Academy of Sciences

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www.neacadsci.org 402-472-2644
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Lincoln, Nebraska 68588-0339

Affiliated with the
AAAS and NAAS

September 27, 2025

To whom this concerns,

The Nebraska Academy of Sciences is proud to write this letter of support for the UNL Earth and Atmospheric Sciences department as the University considers where it will make budget cuts. The Academy recognizes the difficulty in these decisions but wants to express its strong opposition to the entire elimination of such an active and important department.

UNL Earth Sciences has been actively impacting the scientific community in Nebraska through our annual spring meeting for 135 years. The Earth Sciences section has been chaired by a number of UNL Earth Sciences Faculty, and an average of 30-40 student and faculty abstracts have been submitted each year. The Earth Sciences represent a sizeable portion of our membership and meeting agenda. The science they share are a great resource to the state and their disciplines. Elimination of this program at UNL would be immediately felt in our annual meeting and among our membership.

We would encourage University decision makers to look at the abstracts that have been presented over the years at the NAS annual meeting, available for viewing at the Nebraska Digital Commons in the Program and Proceedings of the Academy. The abstracts submitted to the Earth Science section come primarily from UNL Earth and Atmospheric Faculty and Students. The annual meeting of the Academy is an important place for members of this community to gather and provide opportunities for their students to present and receive feedback and guidance on their work. The support of the UNL Earth and Atmospheric faculty of their students in their professional development makes them leaders within the organization. The elimination of the Department dismantles all the work that has gone into building mentoring frameworks that have led to the success we see in the Earth Science section each year.

Additionally, for the past three years, UNL Earth and Atmospheric Sciences has spear-headed a NAS Geology Field trip, which is open to the public and involves Faculty, students, and citizen scientists from throughout the state. Our 2025 Geology Field Trip was organized by UNL Earth Sciences, and the field trip included faculty from Creighton University, Doane University, Chadron State College, as well as K-12 School teachers, and high school and college students. Our leaders took us back 90 million years over two days and 100 miles of Nebraska terrain. We left with new collaborators and friends.

These field trips offer the participants an opportunity to learn about geology in the state with a faculty-led scientific team. It builds connections and feeds back into the state science ecosystem through its impacts on Nebraska classrooms and laboratories.

In summary, the faculty and students of the UNL Earth and Atmospheric Sciences department are a pillar within the Nebraska Academy of Sciences. The department faculty are leaders in their professional development of their students and they extend their expertise to the broader scientific community within

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the state, thereby strengthening our collaborative networks. This is a department that merits investment, not excision.

Thank you for your consideration. We welcome you to come see us at our annual meeting April 24 on UNL East Campus!

Sincerely,

The Nebraska Academy of Sciences Board

Dr. Tessa Durham Brooks
NAS President 2025 – 2026

Dr. Joel Berrier
NAS President-Elect

Dr. Bradley Peterson
NAS Past-President

Dr. Annemarie Shibata (Sep 29, 2025 16:14:24 CDT)
Dr. Annemarie Shibata
NAS Counselor

Dr. Justin Andersson (Sep 29, 2025 17:26:24 CDT)
Dr. Justin Andersson
NAS Treasurer

Dr. Ann Buchmann
NAS Secretary

Kristen Benton (Oct 2, 2025 05:19:55 CDT)
Kristen Benton
NATS President

Randall Lienemann (Oct 1, 2025 19:41:50 CDT)
Randall Lienemann
NJAS President

Marc Bathke (Sep 30, 2025 08:22:24 CDT)
Marc Bathke
AAAS/NAAS Representative

Kerri Schnase-Berge (Sep 29, 2025 14:46:11 CDT)
Kerri Schnase-Berge
NAS Executive Director

Christine Gustafson (Sep 29, 2025 14:05:30 CDT)
Chris Gustafson
NAS Long-Range Planning

Dr. Susan Weller
NAS Agent

Dr. Doug Golick
NAS Long-Range Planning

Dr. Mike Leite (Sep 29, 2025 15:32:38 CDT)
Dr. Mike Leite
NAS Long-Range Planning

Dr. Karen Murch-Shafer
NAS Transactions Editor

Dr. Mark Schoenbeck
NAS Transactions Editor

United States Department of the Interior

U. S. GEOLOGICAL SURVEY

John A. Barron, PhD
Emeritus Research Geologist
Geology, Minerals, Energy & Geophysics Science Center
Moffett Field, CA 94035
September 29. 2025

Academic Planning Committee University of Nebraska–Lincoln

Dear Members of the Academic Planning Committee,

I am writing to express my support for the Department of Earth and Atmospheric Sciences (EAS) and my strong opposition to the proposed elimination of this unit and its associated degree programs.

During my 42 years as a Research Geologist and most recent 9 years as an Emeritus, I have experienced the fundamental importance of a cross disciplinary education in the Earth Sciences at all levels. Critical applications include energy and minerals exploration and development, hazard assessment and prevention, water quality and the environment, and preservation of the Nation's National Parks and public lands. As a homeowner in a geologically complex region, I have seen the sad consequences of not providing a through geotechnical report on building sites.

In a world of increasing knowledge and its application, such education cannot be achieved in a few courses but requires a dedicated and integrated department of experts. Such a dedicated department provides national and international contacts that ensure expert, up-to-date knowledge and employment opportunities for the students at the University of Nebraska.

Knowledge of climate change and its threats to the environment and human health require such a thorough curriculum that can only be achieved in an active, well-funded earth and atmospheric sciences program. The increasing risk of destructive storms and forest/grassland fires requires prediction and preparation on the part of all citizens. The flood of misinformation in the media places a critical burden on government leaders and administrators. It is only with the unbiased advice of a dedicated faculty of earth and atmospheric scientists that such threats can be mitigated.

Please feel free to contact me jbarron@usgs.gov if you have any questions.

Sincerely,

John A. Barron

Association of State Boards of Geology

October 3, 2025

Academic Planning Committee
University of Nebraska - Lincoln

Dear Members of the Academic Planning Committee:

The National Association of State Boards of Geology (ASBOG), whose core mission is to protect public health, safety, and welfare by establishing standards for professional geologists, writes to express our strong opposition to the proposed elimination of the UNL Earth and Atmospheric Sciences Department and associated Geology Program. This decision, if enacted, would have severe, long-term negative consequences for Nebraska's workforce development, economic resilience, and public safety infrastructure.

Licensed Professional Geologists (PGs) play a critical, often unseen role in modern society. They guide public policy and ensure geologic issues are understood in the design of critical infrastructure, including roads, hospitals, and dams. Crucially, the UNL Geology Program is the only avenue at the University that qualifies students for PG licensure in the state.

A significant, nationwide hurdle for aspiring PGs is inconsistent coursework, especially the need for robust field geology and extensive upper-division curriculum. UNL's Geology Program has historically provided this critical educational foundation, consistently producing graduates who meet state board requirements. The department's success is demonstrated by the fact that 92% of its BS/BA geology graduates are successfully employed in their field or pursuing advanced degrees. Eliminating this program creates an immediate and irreplaceable gap in the statewide pipeline of licensed geologic professionals.

The UNL Geology Program is foundational to Nebraska's prosperity and citizen safety. Its applied, state-centric curriculum directly contributes to the state's economic vitality through the responsible management and discovery of critical natural resources. This includes: the exploration and extraction of minerals, such as the nation's largest deposit of the strategic element Niobium and associated rare earth elements; the development of sustainable agricultural practices through soil and groundwater analysis; and the geological assessments required for robust infrastructure projects like roads, bridges, and building foundations. UNL faculty are academic leaders, having secured over $17.6 million in active externally funded research awards over recent years. These grants advance the fundamental understanding of the Earth system while bringing high-dollar funding directly into the state. Without a well-trained cohort of geologists, these essential sectors would face significant challenges, hindering economic growth and potentially introducing greater risk to the public and environment.

The expertise provided by the UNL Geology Department is indispensable for public safety and environmental protection. Nebraska is susceptible to natural and man-made hazards requiring geological insight to mitigate. Geologists play a vital role in identifying and addressing environmental risks such as groundwater contamination, which is paramount to protecting citizen's drinking water supply, especially given the state's reliance on the Ogallala Aquifer. They are also crucial in assessing landslide risks, monitoring seismic activity, and providing expert analysis during environmental cleanup efforts. A strong, state-focused geology program ensures a steady supply of trained professionals capable of protecting communities and natural resources from these dangers.

The closure of this department represents not merely the loss of an academic unit but a severe blow to workforce development, public safety, and environmental stewardship across Nebraska. We strongly urge you to recognize the immense and unique value of this resource and recommend that the UNL Geology Program be maintained and protected.

Sincerely,

Keith Rapp, P.G. (MN-30574, NE-0162)
ASBOG President 2025

SOCIETY OF EXPLORATION GEOPHYSICISTS

Joseph M. Reilly
President

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Houston, TX 77072
USA

jmreilly@sbcglobal.net
www.seg.org

6 October 2025

To: University Leadership, University of Nebraska–Lincoln

From: Society of Exploration Geophysicists (SEG)

Subject: Support for the Department of Earth and Atmospheric Sciences at UNL

Dear University Leadership,

On behalf of the Society of Exploration Geophysicists (SEG), I want to highlight the importance of geosciences careers for the energy industry, particularly at this time when an observed generational gap will impact future operations in 10-15 years when the replacement for retirees needs to take over.

The Department of Earth and Atmospheric Sciences at UNL plays a vital role in preparing the next generation of geoscientists professionals who are essential to addressing energy challenges, environmental stewardship, and climate resilience across Nebraska and beyond. This department provides a critical academic pathway for students but also serves as a valuable connection to the broader scientific and professional geophysics community.

As a global organization committed to advancing applied geophysics through education, innovation, and collaboration SEG has found a partner in the Department of Earth and Atmospheric Sciences at the University of Nebraska–Lincoln Faculty and students through their participation in the Student Programs and Committees that contribute to enriching the SEG community.

UNL's contributions to SEG have been both consistent and impactful:

- **SEG Student Chapter at UNL**: The chapter fosters outreach, technical development, and professional networking, exemplifying SEG's mission at the university level. Having a student chapter at the university allows the students to practice their leadership and interpersonal skills in a safe environment that readies them for the real world. A testament to their leadership and impact are the outreach events to promote Geosciences to the local Community at middle and high schools. These events allowed students to have hands-on use of instrumentation relevant to the identification and measurement of groundwater aquifers. Activities like these not only need to be executed by passionate smart students but also require the leadership of bright professors who can convey difficult physics principles in a common understandable language. The chapter also excels at practicing communication skills through a series of presentations that allow them to think critically about how to address different audiences effectively, developing a skillset that is almost lost today in the new era of AI and virtual communication.

- **SEG EVOLVE Participation**: UNL teams have represented the university for two consecutive years, working with real geoscience data, working the project as they would in a multidisciplinary team in industry and delivering investor-style presentations and contributing to real-world energy evaluations—an achievement that reflects both academic rigor and industry relevance. With Dr. Irina Filina leading the team as their Faculty Advisor, the students have embraced the application of the learned science to real industry practices, making them prepared for their contributions and impact in the energy market. Based on the technical knowledge and interpersonal skills learned in the program, at least one UNL student within the Department of Earth and Atmospheric Sciences has been granted an opportunity to work on an internship with OXY, one of the major industry organizations for Carbon Management. Several other students have taken their passion for the Science to become research assistants at UNL to be able to guide the next generation of Geoscientists.

- **SEG/Chevron Student Leadership Symposium:** The SEG/Chevron Student Leadership Symposium (SLS) provides an opportunity for chapter officers and nominated chapter members to participate in the fully sponsored leadership workshop coached by Chevron staff covering panel discussions, real-world problem solving activities, along with collaborating with other chapters, sharing cultural experiences, and attending the annual IMAGE convention. The student officer leaders of the Student Chapter have applied and been accepted year after year into this program. This is only possible if the university has a student chapter. In 2024, Kaitlin Steinauer represented UNL and in 2025, Anika Mayeesha represented the chapter and applied as leader to the 2025 SEG EVOLVE Energy Exploration program, presented at the same conference.

- **IMAGE Conference Engagement**: UNL students have actively presented research and built relationships with global industry leaders, showcasing the strength of the university's geophysics training. Year after year, there are UNL students that showcase their learnings from the university at major conferences. One of them is IMAGE in Houston, Texas, hosted annually in August. In 2025, there were 4 Earth and Atmospheric Sciences students (Zachary Clowdus, Anika Mayeesha, Abdullah Salman, and Tochukwu Onyebum) who submitted successful abstracts to build the Technical Program of the conference and were able to showcase the knowledge and research learned from UNL.

- **Challenge Bowl Success**: UNL students have excelled in SEG competitions, earning visibility and recognition within our international community. Two students from UNL won the U.S. Regional Challenge Bowl event and will virtually represent the university at the World Finals October 16, 2025, Anika Mayeesha and Abdullah Salman. This accomplishment comes directly from their learnings at the university as the questions require quick calculations done in their heads and thorough knowledge of Earth Sciences, Geology, and Geophysics.

These activities not only demonstrate the educational quality and continued legacy of leadership in geoscience education found at UNL but also that the geophysics program enriches, cultivates talent, fosters innovation, and upholds scientific excellence, contributing meaningfully to SEG's global mission.

Sincerely,

Joseph M. Reilly
President

September 23, 2025

Dear University of Nebraska-Lincoln Academic Planning Committee,

The Department of Earth and Atmospheric Sciences (EAS) at the University of Nebraska-Lincoln (UNL) is a leading center of study for the science that supports advancing society's ability to harness the resources provided by our planet and for safeguarding our nation's people and infrastructure from the impacts of its hazards. As member representatives, Board members, and faculty of fellow member universities of the University Corporation for Atmospheric Research (UCAR), we write to express our dismay at the impact to our society and discipline from the short-sighted recommendation to close EAS and discontinue its undergraduate majors and graduate programs.

EAS is an established department of our field, with the original Geology department founded in 1893 and Meteorology in 1981. UNL joined as a UCAR member university in 1979 and has been an active member since that time. The program is median size among our peers. It is a department with a long history of educating students and leading research in subjects around the nature of severe weather, the dynamics of our subsurface water resources, the microbiology of ancient environments, and technology development for sensing of the Earth from the ground and air, to name a few examples. This work is synergized by the strength of programs at UNL in natural resources, especially in agriculture and drought management.

We recognize that universities across the country are facing significant budgetary headwinds. Innovation is needed in how academic departments deliver education, make new discoveries, and support society. The work of departments in our field don't always line up neatly in the type of benchmarks administrators might use to evaluate units. EAS deserves time to implement recommendations to increase its impact for UNL and be given a chance to meet the moment. UNL's current proposal to close EAS is troubling, risking our nation's prominence in atmospheric science, geoscience, and discoveries that allow us to grow our economy and protect its inhabitants and resources in Nebraska and beyond.

Sincerely,

Elizabeth Walsh, Professor, San José State University

Wendilyn Flynn, Associate Professor of Meteorology, University of Northern Colorado

Ana P. Barros, Professor and Head, University of Illinois at Urbana-Champaign

Dr. Robert Litterman, Chair, Climate Leadership Council

Rita R. Colwell, Distinguished University Professor, University of Maryland, College Park, Maryland

Walter A. Robinson, Professor of Atmospheric Sciences, North Carolina State University

Anthony R. Lupo, Professor, University of Missouri

Javier Fochesatto, Professor of Atmospheric Sciences, University of Alaska Fairbanks

Fabrice Veron, Dean, University of Delaware

Hyodae Seo, Associate Professor, University of Hawai'i at Mānoa

Victor Gensini, Professor, Northern Illinois University

Annalisa Bracco, Professor, Georgia Tech

Sumant Nigam, Professor & Chair, Department of Atmospheric & Oceanic Science, The University of Maryland

Belay Demoz, Professor, University of Maryland, Baltimore County

Robert Palmer, Dean, College of Atmospheric and Geographic Sciences, Director, National Weather Center, University of Oklahoma

Pengfei Liu, Assistant Professor, Georgia Institute of Technology

Paul Mayewski, Prof/Director, University of Maine

Dylan Millet, Professor, University of Minnesota

Scott N. Spak, Associate Professor of Planning and Public Affairs, University of Iowa

Jonathan Poterjoy, Associate Professor, University of Maryland

Julie Lundquist, Professor, Johns Hopkins University

Qiang Fu, NAS member, Professor, University of Washington

Alan Robock, Distinguished Professor, Rutgers University

Mathew Barlow, Professor of Climate Science, University of Massachusetts Lowell

Dr. Frank Colby, Professor of Meteorology, University of Massachusetts Lowell

Zhixiong Shen, Professor, Coastal Carolina University

Dr. Jason M.Keeler, Associate Professor of Meteorology, Central Michigan University

Craig B. Clements, Professor and Chair, San José State University

Arne Winguth, Professor and Chair, University of Texas Arlington

Sepi Yalda, Professor of Meteorology, Director, Center for Disaster Research and Education

Christopher Godfrey, Chair and Professor, Department of Atmospheric Sciences, University of North Carolina Asheville

Bernhard Rappenglueck, Professor, University of Houston

Alyssa Stansfield, Assistant professor, University of Utah

Dr. Craig Ramseyer, Associate Professor, Virginia Tech

Scott M. Rochette, Professor and Chair, SUNY Brockport

Dr. Richard Gaschnig, Associate Professor, University of Massachusetts Lowell

Teresa Bals-Elsholz, Professor of Meteorology, Valparaiso University

Sam Ng, Professor of Meteorology, MSU Denver

Jon Kahl, Professor Emeritus of Atmospheric Science, University of Wisconsin-Milwaukee

Dr. Jake P. Mulholland, Assistant Professor, University at Albany (SUNY)

Leanne Blind-Doskocil, Staff Meteorologist, Valparaiso University

David Lerach, Associate Professor of Meteorology, University of Northern Colorado

Julie Brigham-Grette, Prof. and Dept Head, University of Massachusetts-Amherst

Prof. Robert Gamache
Dr. Majie Fan, University of Texas at Arlington
Thomas Mote, Distinguished Research Professor, University of Georgia
Jon-Paul McCool, Associate Professor, Valparaiso University
Stephen W. Nesbitt, Professor and Head, Department of Climate, Meteorology & Atmospheric Sciences, University of Illinois Urbana-Champaign
Leiqiu Hu, Associate Professor, University of Alabama in Huntsville
Shane Murphy, Professor of Atmospheric Science, University of Wyoming
Gabriel Kooperman, Associate Professor, UGA
Hannah Zanowski, Assistant Professor, University of Wisconsin-Madison
Richard Dixon, Independent Scholar
Christopher Weiss, Professor, Texas Tech University
Sam Silva, Assistant Professor, University of Southern California
Xiong Liu, Senior Physicist, Harvard University UCAR member representative, Center for Astrophysics | Harvard & Smithsonian
Saewung Kim, Associate Professor, University of California, Irvine
Stefan Rahimi, UW Derecho Professor, University of Wyoming
Adam Varble, Earth Scientist, Pacific Northwest National Laboratory
Zhe Feng, Senior Scientist, Pacific Northwest National Laboratory
Marguerite Madden, Professor and Assoc. Director for Education and Outreach, Center for Geospatial Research, Dept. of Geography, University of Georgia
Gudrun Magnusdottir, Professor, University of California Irvine
Robin L. Tanamachi, Associate Professor, Purdue University
Andrew Freed, Professor, Purdue University
Alexandria Johnson, Assistant Professor, Purdue University
Lori Weeden, Teaching Professor, University of Massachusetts Lowell
Ari Preston, Associate Professor, Vermont State University Lyndon
Kristen Axon, PhD Candidate, Purdue University (UNL alum)
Joy Winbourne, Assistant Professor, Umass Lowell
Ashika Capirala, PhD Candidate, Purdue University
Ian Pamerleau, Planetary Science PhD Candidate, Purdue University
Elizabeth Maroon, Assistant Professor, University of Wisconsin-Madison
Rachel T Miller, PhD student and Instructor at Wasatch-Uinta Field Camp, Purdue University
Eric Wilcox, Research Professor, Desert Research Institute
Alexa Lytle, Graduate Student, Purdue University
Mayra I. Oyola, Assistant Professor, University of Wisconsin-Madison

Lilian Dove, Assistant Professor, Georgia Institute of Technology
Benjamin Galer, Bachelors of Science in Geology, Purdue University
Cristian Gamez, BS, University of illinois
Larissa Back, Professor and Associate/Graduate Chair, Department of Atmospheric and Ocean Sciences, University of Wisconsin-Madison
Andrea Lopez Lang, Associate Professor, University of Wisconsin-Madison, and Chair of the American Meteorological Society's Board of Enterprise Economic Development
Isandra S., Museum Intern & Geology major, University of Nebraska-Lincoln
Angela Rowe, Assistant Professor, University of Wisconsin-Madison
Logan, Geology student, Purdue
Isabelle Rein, PhD student, Purdue University
Charles Kropiewnicki
Abigail Gaddis, Senior Geology and Geophysics Student, Purdue University
Jack Mitchell, B.S. Undergraduate Student in Earth, Atmospheric, and Planetary Sciences, Purdue University
Ankur Desai, Vilas Distinguished Professor of Atmospheric and Oceanic Sciences, University of Wisconsin-Madison
Christopher Holmes, Associate Professor, Department of Earth, Ocean and Atmospheric Science, Florida State University
Zachariah Jalley, Undergraduate Senior, University of Illinois at Urbana-Champaign
Allison Wing, Associate Professor, Florida State University
Daniel J. Vimont, Professor of Atmospheric and Oceanic Sciences, University of Wisconsin-Madison
Michela Biasutti, Lamont Research Professor, Columbia University
Tristan L'Ecuyer, Professor, University of Wisconsin-Madison
Cristian Martinez-Villalobos, Assistant Professor, Universidad Adolfo Ibáñez
Walker Ashley, Professor, Northern Illinois University
Emily Fischer, Professor, Colorado State University
Sarah Larson, UCAR Membership Committee
Paul Markowski, Distinguished Professor and Head of Meteorology and Atmospheric Science, Penn State University
Kathryn Akin, M.S. Student, University of Minnesota
Alan E. Stewart, Ph. D., Professor, University of Georgia
Dr. William Stockwell, Professor Emeritus, Howard University
Dr. Shawn Milrad, Professor of Meteorology, Embry-Riddle Aeronautical University
Robert Hart, Sunkist Professor Meteorology, Florida State University
Matthew H. Hitchman, Professor, University ol Wisconsin - Madison

Steven Lazarus, Professor, Florida Institute of Technology

Michael Diamond, Assistant Professor of Meteorology, Florida State University

Aneesh Subramanian, Associate Professor, CU Boulder

Mark Raleigh, Assistant Professor, Oregon State University

Amy Baco-Taylor, PhD Florida State University

Shu-Hua Chen, Professor, University of California-Davis

David R. Butler, Ph.D. Texas State University System Regents' Professor Emeritus, Texas State University

Deepak Mishra, Department Head and Professor, Geography, University of Georgia

Kirk A. Maasch, Professor of Climate Studies, University of Maine

Anne Sophie Daloz, Senior Researcher, CICERO

Shiliang Wu, Professor, Michigan Tech

Dr. Leonard J. Petrafesa, Professor Emeritus, North Carolina State University

Scott Steiger, Professor, SUNY Oswego

Sharon Zhong, Professor, Michigan State University

Anantha Aiyyer, Professor, North Carolina State University

Jaime Palter, Professor of Oceanography, University of Rhode Island

Alison Nugent, University of Hawaii at Manoa

Daria Kluver, Professor, Central Michigan University

Nathaniel Brunsell, Professor, University of Kansas

Cameron Homeyer, Director of the School of Meteorology, The University of Oklahoma

Yuan Wang, Assistant Professor, Stanford University

William Porter, Associate Professor of Atmospheric Dynamics and Modeling, University of California, Riverside

Samantha Stevenson, Associate Professor, University of California Santa Barbara

Gabrielle Leung, University of Wisconsin-Madison

Mark Flanner, Professor, University of Michigan

Terri Adams, Professor, Howard University

Paul W. Staten, Associate Professor, Indiana University Bloomington

Sonia Kreidenweis, University Distinguished Professor of Atmospheric Science, Colorado State University

Dr. William Capehart, Associate Professor and Program Coordinator for Atmospheric and Environmental Sciences, South Dakota School of Mines & Technology

Prof. Eric D. Maloney, Department Head, Department of Atmospheric Science, Colorado State University

Qinghua Ding, professor, ucsb

Ademe Mekonnen, Professor, North Carolina A&T State University, Greensboro, NC

Chris Thaxton, Professor of Physics, Appalachian State University

Charles Zender, Professor of Earth System Science, University of California, Irvine

Richard D. Clark, Professor Emeritus, Millersville University

The views expressed herein are solely that of the signer and do not necessarily reflect the views of their employer or any other person or entity.

NEBRASKA GEOLOGICAL SOCIETY

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Gretna, NE 68028-0033
www.nebraskageologicalsociety.org

October 9, 2025

Academic Planning Committee
University of Nebraska – Lincoln
Faculty Senate Office
135 Alexander Building
Lincoln, NE 68588-0471

Dear Academic Planning Committee,

We the undersigned, on behalf of the Nebraska Geological Society, ask you to reject the recent recommendation to eliminate the Department of Earth and Atmospheric Sciences.

The Nebraska Geological Society was founded in 1968 to advance and promote the science of geology and the geological profession. We accomplish this goal by bringing together practitioners from private practice, academia, and government to support student scholarship, foster professional relationships across subdisciplines, and showcase student and professional research.

Knowledge of earth and atmospheric science is fundamental to understanding the Earth and earth processes, and understanding earth processes is foundational to understand hydrology and hydrogeology, natural resources management, critical minerals and energy resources, hazard mitigation, and environmental protection. The Department of Earth and Atmospheric Sciences and the training and information they provide to students and professionals across the state are indispensable to these ends.

Most of the Nebraska Geological Society annual budget is allocated to Yatkola-Edwards Memorial scholarships (https://nebraskageologicalsociety.org/awards), and individuals who have received these awards are in many cases still working in Nebraska for Federal agencies, State agencies, local subdivisions, private consulting/engineering firms, or units within the University system. These individuals are the foundation of the practice of geoscience in Nebraska, and depriving future Nebraskans of the benefits of locally developed talent will degrade the practice of geology in Nebraska.

The Department of Earth and Atmospheric Sciences trains geologists, and geologists use specialized knowledge to benefit the public through exploration and development of mineral resources, development and management of water resources, and evaluation of geological stability for buildings, dams, bridges and roadways, among other things. Few professions affect the public as much as earth science.

Thank you for your dedication to Nebraska education and your consideration of our concerns regarding the elimination of the Department of Earth and Atmospheric Sciences.

Best regards,

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Vice President – Nebraska Geological Society
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Secretary, Nebraska Geological Society
IT Specialist, Northern Natural Gas-Berkshire Hathaway Energy

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Director Emerita, University of Nebraska State Museum 2015-present
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Troy Gilmore
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October 9, 2025

Dear Dr. Bennett:

We are writing as the President and Executive Director of the American Geosciences Institute, a National Academy of Sciences chartered federation of geoscience societies that represent nearly 350,000 geoscientists in the United States. The current proposed elimination of the Department of Earth and Atmospheric Sciences at the University of Nebraska–Lincoln has come as a shock to the geoscience community, as it represents not only a long-standing leading geoscience department, but also the flagship for producing geoscience talent for the State of Nebraska, including in important areas such as energy, critical minerals, and water.

Never has the geosciences been a more pivotal player in the national dialogue, whether about energy and critical mineral security to managing water for drought or flood protection to providing innovative solutions to grow our economy into the future as a resilient and thriving society. Ninety-two percent of geoscientists work in the application of geoscience to address society's challenges. Geoscientists work in every county in the country with most in professional services companies that represent a major engine of employment and the economy across the country. The program at the University of Nebraska–Lincoln is the flagship source for high quality geoscience talent for the state, producing highly recognized faculty and graduates, including 2 NSF Career award winners, 4 NSF Graduate Fellowships, and 2 Fulbright Scholars. All of these are top recognitions of the highest levels of achievement and quality in the field and demonstrate the great credit and respect that Nebraska realizes for the talent they produce.

Current data from the U.S. Bureau of Labor Statistics show the geosciences with an unemployment rate of only 1.2%, well below the national unemployment rate, and even further below the rates for chemistry (about 7%) and physics (about 9%). Geoscience talent is in demand across the country and in every community, including Nebraska. Additionally, the Department of Earth and Atmospheric Sciences is the only program at the university aligned to prepare students as licensed professional geologists, who work to ensure the public's health, safety, and economic prosperity.

Beyond the impact to the United States scientific community with the elimination of a highly regarded program, the elimination of the department would represent a blow to the Nebraska economy, short-term and especially in the long-term as many of the quiet solutions geoscientists provide are not realized, ranging from geological hazard mitigation to the discovery of critical natural resources.

On behalf of the entire U.S. geoscience community, we strongly encourage you to not proceed with the elimination of the Department of Earth and Atmospheric Sciences.

Regards,

Anna Shaughnessy
President
American Geosciences Institute

Jonathan Arthur, Ph.D.
Executive Director
American Geosciences Institute

10.3.4 Letters from UNL Departments and Units

A. Civil & Environmental Engineering, Faculty - Seunghee Kim, Chung R. Song, Yusong Li
B. Civil & Environmental Engineering – Faculty – letter signed by nine faculty
C. School of Biological Sciences, Director – Michael Herman and SBS Faculty
D. Dept. of Anthropology, Ray Hames - National Academy of Sciences member
E. Conservation and Survey Division, Director & State Geologist – Matt Joeckel
F. School of Natural Resources, Director and Professor – Larkin Powell
G. Dept. of Teaching, Learning and Teacher Education, Coordinator MAst – Beth Lewis
H. School of Natural Resources, NE State Climatologist - Debra Bathke
I. SNR, National Drought Mitigation Center, Director Emeritus – Donald Wilhite
J. Dept. of Mathematics, Chair - Petronela Radu
K. School of Natural Resources, Professor – Michael Hayes
L. Nebraska Elder Climate Legacy, Prof. Emeritus Agricultural Econ. - Bruce Johnson
M. University of Nebraska State Museum, Asociate Director – Adam Eakin
N. University of Nebraska State Museum, Highway Paleontologist – Shane Tucker

September 29, 2025

Dear APC members:

As faculty members in the Department of Civil and Environmental Engineering, we are writing to express our strong support for the Department of Earth and Atmospheric Sciences (EAS) at the University of Nebraska–Lincoln. The proposed discontinuation of this department would not only diminish UNL's academic breadth but also significantly weaken critical teaching, research, and outreach missions that serve Nebraska, the nation, and the broader scientific community.

First and foremost, the Department of Earth and Atmospheric Sciences provides essential educational programs that prepare students to address some of society's most pressing challenges, including natural hazards, water resources, energy security, and climate change. Its undergraduate and graduate programs are vital for training future geoscientists, meteorologists, and environmental professionals. Reducing or eliminating these programs would undermine UNL's ability to serve the state's workforce needs in fields ranging from agriculture and natural resources to emergency management and energy industries.

Importantly, Nebraska is emerging as one of the potential leaders in natural hydrogen production, an innovative new energy frontier that could provide clean, domestically sourced fuel for decades to come. Realizing this opportunity requires deep expertise in geology, geochemistry, and subsurface processes—the very strengths of the EAS faculty and students. Geoscientists in the department are uniquely equipped to identify promising reservoirs, assess hydrogen generation and migration pathways, and develop safe and sustainable strategies for production. Moreover, this work cannot be done in isolation: it depends on close collaboration with engineering disciplines to design extraction technologies, with agricultural sciences to evaluate land and water resource impacts, and with policymakers to shape a responsible energy framework. Without the interdisciplinary leadership provided by EAS, Nebraska risks losing a critical competitive advantage in shaping the future of clean energy.

Beyond academics, EAS faculty lead and collaborate on nationally recognized research initiatives in areas such as climate and severe weather prediction, groundwater management, natural resource exploration, and sustainable energy development. These projects directly support Nebraska's economy and resilience, from protecting farmers and communities against extreme weather events to advancing sustainable practices in water and land use. Eliminating this department would erode research capacity in disciplines central to Nebraska's identity and long-term prosperity.

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The department also provides critical services to the state and region. Its meteorology program supplies expertise to local media and emergency managers, its geology faculty informs natural resource policies, and its outreach helps educate the public on environmental stewardship and disaster preparedness. These contributions reflect UNL's land-grant mission and have a tangible impact on the lives of Nebraskans.

For these reasons, we strongly urge you to preserve the Department of Earth and Atmospheric Sciences. Its continuation is essential to maintaining the excellence of UNL's educational offerings, sustaining Nebraska's leadership in earth and atmospheric research, and ensuring that the university continues to provide meaningful contributions to the state, region, and beyond.

Sincerely,

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October 02, 2025

Dear APC members:

As faculty in the Department of Civil and Environmental Engineering (CEE), we write to express our strong support for the Department of Earth and Atmospheric Sciences (EAS) and to underscore the critical importance of maintaining its programs at UNL.

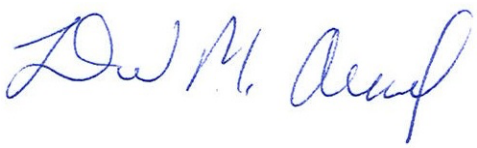
First and foremost, EAS provides essential educational programs that prepare students to address some of society's most pressing challenges, including natural hazards, water resources, energy security, and climate change. Specifically, our environmental engineering major has a required undergraduate geology course and geology courses are highly recommended electives for our civil engineering undergraduates. Additionally, many of our graduate students also rely on EAS courses to support their research, particularly in areas tied to natural hazards, resilience, water resources and climate impacts. Losing this curriculum support would compromise the quality of our own programs and diminish the professional preparation of Nebraska's future civil and environmental engineers.

With respect to research, CEE faculty actively collaborate with EAS colleagues in seismology, climatology, groundwater, and hazard resilience. These collaborations are not interchangeable with partnerships outside UNL. The unique local expertise of EAS faculty—deeply embedded in the context of Nebraska's geology, weather, and climate—is irreplaceable. Eliminating EAS would force us to seek external collaborations that lack both the regional insight and the established interdisciplinary ties necessary to solve Nebraska-specific problems.

Looking forward, the importance of EAS will only increase. Nebraska is emerging as a potential leader in natural hydrogen production, an innovative new energy source with the potential to provide a domestic fuel for decades to come. This initiative is of great interest to our partners including NPPD and is federally funded. This initiative is co-led by faculty in CEE and EAS. Realizing this opportunity requires expertise in geology, geochemistry, and subsurface processes—the strengths of the EAS faculty and students, which will not be available if EAS is eliminated.

For these reasons, we urge you to preserve the Department of Earth and Atmospheric Sciences. Its faculty, students, and programs are indispensable not only to CEE, but to the university's mission of research, teaching, and service to Nebraska.

Sincerely,



Dr. David Admiraal, Associate Professor

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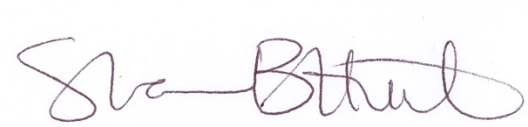

Dr. Shannon Bartelt-Hunt, Donald R. Voelte, Jr. and Nancy A. Keegan Chair and Professor

Dr. Junke Guo, Associate Professor

Dr. Jiong Hu, Professor and Associate Chair for Graduate Programs

Dr. Tirthankar Roy, Associate Professor

Dr. Christine Wittich, Leonard A. Lovell Associate Professor and Associate Chair for Undergraduate Programs

Dr. Richard L. Wood, Associate Professor

Dr. Yumeng Zhao, Assistant Professor

Dr. George Hunt, PE, Associate Professor of Practice

October 8, 2025

To the UNL Administration,

We are writing as faculty in the School of Biological Sciences (SBS) to express our strongest possible support for the preservation of the Department of Earth and Atmospheric Sciences (EAS) at the University of Nebraska-Lincoln (UNL). This statement was approved unanimously with a 32-0 vote at the SBS faculty meeting on October 7, 2025.

The physical Earth system and its dynamic changes across space and through time provide the template for life processes and biotic evolution. Thus, the Departments of Earth and Atmospheric Sciences and School of Biological Sciences have had many shared connections in research and teaching over many decades. These include collaborations on topics, such as how the physical environment (climate, geology, water availability) affects the dynamics of organisms in the subsurface, contemporary forests and grasslands of Nebraska and surrounding regions, and how environmental change over thousands to millions of years (mountain building, climate variation, river and stream migration, soil development) affect the evolution of biodiversity or biomes or traits within major taxonomic groups which indirectly and directly can impact environmental and human health.

The proposed elimination of EAS, while intended to address financial challenges, would inflict severe damage to UNL's research capabilities, academic excellence, and our mission as a land-grant, R1 institution. This damage will carry with it its own price tag and will have a multitude of immediate and long-lasting negative consequences. At the broadest scale, eliminating EAS will damage UNL’s reputation and national standing. It will severely hinder the University’s ability to advance priorities of both Nebraska and the nation, and to recruit the most talented STEM faculty, postdoctoral fellows, and graduate and undergraduate students.

The points below illustrate the essential nature of EAS to SBS, UNL, and beyond.

- **Integral to Natural Sciences at an R1 University.** All peer Big Ten Universities have an Earth Science unit that integrates planetary, environmental, and/or atmospheric sciences. Similarly, all public AAU universities have Earth Science represented, with the exception of the University of Virgina in which Earth Science is integrated in the environmental sciences. All these universities also offer undergraduate as well as M.S. and Ph.D. degrees. Elimination of Earth Science from UNL will be unprecedented for a Big Ten University and a likely cause for concern in UNL’s rejoining the AAU. While not all Big Ten or AAU Universities have an atmospheric science or meteorology program, this

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program makes UNL unique, providing a competitive advantage. Ultimately, as highlighted by our peer institutions, the set of disciplines encompassed by Earth and Atmospheric Sciences is foundational in the natural sciences. It is inconceivable for an R1 institution to lack a major unit covering the diverse sub-disciplines included in Earth and atmospheric sciences represented among its current faculty (e.g., geochemistry, mineralogy, geohydrology, structural geology, geophysics, paleontology, paleoclimatology, meteorology and atmospheric science, hydroclimatology, among others).

- **Unique and Essential Expertise for the NU System.** EAS faculty contribute vital expertise in disciplines that are not at all or are minimally represented elsewhere at UNL or the Nebraska University (NU) system, including the dynamics of severe storms, hydroclimatology, geochemistry, subsurface characterization (structural geology and tectonics/geophysics), and paleoclimate. This expertise is essential for investigating scientific objectives important to the state and nation, including attaining Climate Resilience (an NU Grand Challenge) and identifying natural resources, such as energy resources (oil, hydrogen, uranium, critical minerals) and water which is essential for agriculture and for urban and rural communities alike. EAS also has expertise in earth systems over deep evolutionary time, necessary to put both ecological and evolutionary processes in perspective and to understand potential underlying mechanisms of biological change affecting natural, managed, and agricultural systems that are so vital to our state.

- **Jointly appointed SBS-EAS faculty.** SBS has several faculty with joint appointments in EAS who provide indispensable expertise in astrobiology, biogeochemistry, geobiology, paleobiology, and paleoecology. These faculty are some of the highest profile scientists in the nation and the world in their disciplines, including a home-grown member of the National Academy of Sciences. They elevate both SBS's and the University's visibility and prestige, increasing our capacity to recruit the best faculty, postdoctoral fellows, and graduate students. They are also critical members of our SBS community through their committee work, teaching, mentorship of SBS students, and contributions to SBS events and activities. Our SBS community is already experiencing shared distress over the potential elimination of EAS, which would unquestionably have long-lasting negative impacts, including low morale and losses of high-profile faculty from SBS.

- **Disruption of Research.** SBS faculty and students have active, ongoing research collaborations with EAS faculty, including some of the faculty whose positions would be eliminated by loss of EAS. These include EAS faculty with expertise in groundwater and hydroclimatology that contribute to research aimed at ensuring the sustainability of Nebraska's grassland and forest ecosystems. Other collaborations with faculty who might be eliminated include research specializations relevant to understanding how below-

ground structures and sub-surface geochemistry and sedimentology affect energy exploration, carbon sequestration potential, or microbial processes that impact environmental change and water quality essential to the State's human health and welfare and prosperity. Additional research that would be lost includes understanding the role of biotic processes in shaping Earth systems. Elimination of EAS would severely hinder or potentially halt progress in these research areas.

- **Essential Education and Training.** EAS faculty are essential to training the next generation of Earth, planetary, and atmospheric scientists, including professionals that work in state and federal agencies and industry. EAS teaches courses that are critical to the education and professional development of SBS undergraduate and graduate students, especially those that aspire to integrate planetary and life processes across time and space. While there are scientists with faculty appointments in the Conservation Survey Division, Climate Mitigation Center, and High Plains Regional Climate Center that have expertise in geology and meteorology, these faculty do not have research and teaching appointments and primarily work for the State of Nebraska. Their current appointments cannot fill the hole left by eliminating EAS.

  Multiple EAS faculty teach coursework that helps to diversify the course offerings and faculty expertise for the strong SBS research cluster in geobiology and paleobiology and to attract students with these interests to UNL. This includes courses in aqueous geochemistry, hydrogeology, statistical methods in paleobiology, micropaleontology, vertebrate paleontology, and Quaternary paleoecology. Even with the retention of a few "high-performing faculty" from EAS elsewhere in UNL, many of these courses will no longer be offered, diminishing SBS recruitment and training. And one should not deny the allure for many undergraduates of entry-level courses that focus on dinosaurs, mammoths, and mastodons, such as Historical Geology or Fossils and the History of Life, which will no longer be offered if an undergraduate geology degree is eliminated.

  In addition to courses, EAS faculty have supported collaborative training by serving on student committees and providing an essential geologic perspective to biological research. These contributions are not recorded in metrics but provide opportunities for competitive interdisciplinary fellowship proposals between life and earth science, including successful receipt of the competitive National Science Foundation Graduate Research Fellowship.

- **Long-term Fiscal Implications.** We recognize the need to find ways to mitigate the budgetary constraints that UNL and the NU System faces. However, it is likely that any short-term savings from the elimination of EAS will not be worth the long-term costs due to loss of research funding and SBS-EAS research collaborations. These collaborations

have been supported by major grants from NSF and NASA; funding opportunities that will be lost if EAS is eliminated. Some current grants might be moved to other universities with the relevant faculty and future opportunities to bring additional grant monies to UNL will be lost, all compounded by UNL's loss of stature in these disciplines that would be caused by the elimination of EAS.

- **Future Challenges Recruiting Top Talent.** The loss of EAS would seriously hurt the ability of SBS and other natural science units to recruit top talent, given the elimination of a program which harbors recipients of highly prestigious awards recognized and prized by the academic community and the AAU. Furthermore, potential faculty members will view with grave concern a university that eliminates a department that covers a core part of the natural sciences supporting life. Future potential hires in SBS will be loath to accept offers from a university that demonstrates that they do not value the sciences, and current faculty will be more difficult to retain in the face of competing offers. Such losses will harm the teaching and research mission of SBS and other science units, as the quality of the teaching and research in the department will be eroded. The long-term harm to our students and the state is immense.

Eliminating EAS would hamstring UNL's contributions to critical scientific objectives as well as training of next-generation workforce of our state and nation. If the UNL truly aspires to be reinvited into the AAU, it is not clear how elimination of the Department of Earth and Atmospheric Sciences contributes to achieving this goal.

We urge you to consider these compelling arguments, many of which are not captured in the metrics used as a basis for these dramatic changes to UNL's academic programs but are nonetheless meaningful and impactful. The Department of Earth and Atmospheric Sciences is not an optional unit - it forms the integral core of the natural sciences. Please reconsider this decision and preserve a department that is so central to our academic, research, and land grant missions.

Sincerely,

Michael Herman, Director, mherman5@unl.edu, & the SBS faculty

October 7, 2025

Submission to the UNL Academic Planning Committee by

Raymond B. Hames, Professor Emeritus, Anthropology

Member, National Academy of Sciences Section 51: Anthropology (elected 2020)

Given the rural nature of Nebraska and its economy I find it unbelievable that EAS is slated for elimination. Their service, training, and education are essential to an agrarian state such as Nebraska. The training EAS provides fills a variety of important climate and environmental post throughout Nebraska. Those posts will be filled by graduate from nearby states who often lack any natural connection to Nebraska and its people.

The kind of research EAS does is essential to UNL's stature as a land grant institution and one could argue that having EAS fulfills part of UNL's land grant mission. UNL's academic standing will be sharply diminished within the Big Ten where it currently ranks dead-last (US News & World Report, 2025). Increases in external funding is one sure way to move up but eliminating EAS will make this more difficult. These and other cuts cast doubt on any claim that we are a comprehensive university.

EAS has been important to the research of our archaeologists in the Anthropology Department at UNL. Their expertise in radiometric and other dating techniques of archaeological materials has led to a number of joint research projects, projects that could not have occurred without their expertise, good will, and laboratory facilities. A number of our graduate students take geology courses to enhance their skills as archaeologists. In fact, there is a specialization known as geoarchaeology. They also have been critical in helping our archaeologist characterize past environments allowing us to understand human adaptations to the Great Plains over time. Our anthropologist will have to look seek expertise outside of the state to help them document Nebraska's prehistory. And that help will be from geologists who may have no particular commitment to Nebraska.

September 22, 2025

R. M. Joeckel, Ph.D.
State Geologist and Director, Conservation and Survey Division
Senior Associate Director, School of Natural Resources
University of Nebraska-Lincoln
Lincoln, NE 68583-0996

Academic Planning Committee
University of Nebraska–Lincoln

Dear Members of the Academic Planning Committee:

I hereby express my unequivocal support for the maintenance of the Department of Earth and Atmospheric Sciences (EAS) at UNL. It is essential that an R1 flagship university such as ours have a recognizable and vibrant Earth Sciences program. Therefore, I am vehemently opposed to the proposed elimination of EAS and its degree programs. There are myriad reasons for retaining EAS and, I will opine, even enhancing its capabilities, but a few of them are truly salient, as I relate below.

There is a long and storied history of geological research, teaching, and outreach at UNL, where qualified geologists have been on staff for a century and a half. Scores of well-known faculty members have passed through the present department and its predecessors, but two stand out in my mind as I write this letter. E. H. Barbour (1856–1947), a humanistic scientist, made the State Museum a sanctuary of natural-sciences enlightenment for all Nebraskans. Barbour remarked once that one never knew to whom one was talking when one spoke with a child, meaning that children are the future and we should diligently and respectfully develop their minds, whether in Nature, in museums or in classrooms. This anecdote reflects Barbour commitment to lifelong learning centered around a vigorous public university. I see the same kind of commitment in EAS faculty and graduate students today. E. F. Schramm (1883–1967), a philanthropic gentleman of the old school, is said to have passed away holding dozens of IOUs that were purposely never redeemed from impoverished geology students. I surmise that this circumstance stemmed from a holistic approach to college education, that is, nurturing the person as well as the mind. These individuals, and many other faculty members, established an inquiring, inclusive, and supportive educational culture that persists to this day in EAS. Moreover, there is no question that EAS faculty also carry on a great tradition of research and external funding. The department chair, Clint Rowe, and others will doubtless elaborate these points to you.

The persistent success of the program is verified by the thousands of highly qualified graduates have gone on from UNL to make their marks in geology and its subfields, whether in

industry, academia, government, private consulting, or other career endeavors. EAS is the *only* avenue for a geologist to obtain a PhD in Nebraska, and it is the *only* avenue for UNL students at large to qualify for licensure as a Licensed Professional Geologist. The latter is a major entrée to employment, as many recipients with UNL degrees would wholeheartedly attest. I am a proud graduate of the program's predecessor Department of Geology (1985, 1988), and I have a clear basis for highly favorable comparison, having passed through at least five other programs around the country. I emphasize that my success as a geologist is largely due to the presence of a fully functional, healthy, and welcoming program in geology at the University of my youth.

But, of course, EAS is more than geology. Meteorology and climatology have been major components in the department's success for three decades, and the faculty in that area are of significant renown. EAS graduate programs are the *only* Earth and Atmospheric Science graduate programs in the state. In addition, EAS offers the *only* Atmospheric Science degree in the University System and the State of Nebraska that qualifies recipients to work for the National Weather Service. I need not explain why having such a program is essential for the safety of the state's citizens and for the health of its economy.

EAS graduates of all kinds continue to make an immense positive impact on Nebraska and the world. More than one-third of my faculty and staff in the Conservation and Survey Division (CSD), the state's geological survey (and more), are EAS graduates. These individuals are essential components in our success. Their connections to the state and its people, their technical acumen, and their collective knowledge base regarding in geology and hydrogeology are essential in monitoring and safeguarding Nebraska's water supply, assessing its geologic resources (including strategic and critical minerals), investigating traditional and emerging energy systems, studying geologic hazards, participating in federally funded programs that bring money into the University, and much more.

EAS alumni are presently keeping us safe from severe weather, mitigating drought and other weather-related problems, protecting our water supply, providing us with safe water and essential raw materials, supplying us with secure energy supplies, enlightening us about our place in the world and in the history of our planet. and advancing the frontiers of science in so many ways. Therefore, I cannot imagine a University of Nebraska-Lincoln without an EAS that dutifully and uniquely produces such fine and conscientious scientists.

Respectfully,

R. M. (Matt) Joeckel

University of Nebraska Lincoln
Conservation and Survey Division, School of Natural Resources
3310 Holdrege St., 101 Hardin Hall | Lincoln, NE 68583-0961 | 402-472-3471
csd.unl.edu

2 October 2025

Academic Planning Committee
University of Nebraska-Lincoln

To the Members of the Academic Planning Committee:

I write to share feedback and reflections from my vantage point, as Director for the School of Natural Resources, and my message also conveys the spirit and themes of conversation I have had with our faculty and staff during the past two weeks about the impact of the proposed budget cuts.

The Department of Earth and Atmospheric Sciences carries with it a long and proud history within the University of Nebraska. The proposed elimination of this academic unit will have the following impacts:

- **The loss of two academic degree programs, geology and meteorology, that serve core audiences and cannot be replicated elsewhere**. Our School of Natural Resources has an environmental science degree program with soil science and climate science options, but the curriculum is not the same. For example, students in our climate science option do not automatically meet the requirements for employment by the NOAA National Weather Service, as do EAS' meteorology students. SNR will not be able to make up for the loss of these two programs. SNR currently struggles to staff our teaching labs with minimal state supported GTAs, and (should the proposal move forward) we would not be able to offer the breadth of GEOL 100-level ACE courses with labs.
- **The loss of critical collaborations.** Faculty in SNR collaborate with both geologists and meteorology faculty on research. As an example, several SNR faculty have mentioned the potential loss of Erin Haacker as a detriment to their research and outreach programs with regards to groundwater and planning for Nebraska. Ross Dixon has expertise in regional climate modeling that is not found in SNR. Our climate faculty collaborated with Clint Rowe and others from EAS on Grand Challenge internal proposals that had sparked new ideas for collaborations for research and outreach. The specific expertise of EAS faculty are not duplicated in the School of Natural Resources.

I understand the complexity of our current budget situation, and I am grateful to your Committee's service to the university. May my brief assessment of impacts of this proposed cut be useful to your deliberations.

Sincerely,

Director and Professor
School of Natural Resources

University of Nebraska Lincoln

COLLEGE OF EDUCATION AND HUMAN SCIENCES
Department of Teaching, Learning and Teacher Education

October 9, 2025

Dear Esteemed Members of the Academic Planning Committee, Chancellor Bennett, and Members of the University of Nebraska Board of Regents,

As a long-standing UNL faculty collaborator on multiple grant-funded projects and coordinator for the UNL secondary science teacher preparation program, I am writing to express my strongest objection to the proposed elimination of the Department of Earth and Atmospheric Sciences (EAS). This recommendation represents a radical and short-sighted response to the university's current budget challenges. As a former geologist (with two degrees in geology) and a National Board Certified high school Earth and space science teacher, I have a deep understanding and appreciation for the essential mission and professional contributions of this department to the university, the state, and the broader scientific community.

The potential loss of this group of dedicated, productive, and collaborative colleagues would be substantial, causing far-reaching and long-lasting damage across the state and region—and diminishing UNL's reputation as a land-grant, R1, Big Ten institution. I address below two major areas where the elimination of EAS would have particularly damaging and irreversible consequences that extend beyond the department itself.

First, I have collaborated with three EAS faculty members over the past 14 years as co-PIs on several NSF and state-level teacher professional development grants. They have also been collaborators on multiple NSF Noyce grants totaling over $5 million, for which I have served as PI. These collaborations, built carefully over more than a decade, are irreplaceable. The science teachers supported by these grants—whether entering the profession as career changers or developing their expertise through high-quality professional development—depend on the unique expertise and credibility that our EAS partners bring. Together, we have built strong, trust-based partnerships with teachers and schools across Nebraska. The loss of EAS would disrupt these relationships, jeopardize ongoing projects, and undermine our shared vision of excellence in science education.

Secondly, for more than a century, the preparation of future science teachers has been a collaborative effort among the science departments in CAS and CASNR, since the College of Education does not offer the state-required science content courses necessary for secondary (grades 6–12) certification. Eliminating EAS would severely damage this vital inter-college partnership and our collective capacity to educate, prepare, and certify qualified science teachers. UNL's science teacher graduates are highly sought after by school administrators who value the rigor and breadth of their preparation—but that reputation cannot be maintained without EAS.

Carolyn Pope Edwards Hall / P.O. Box 880355 / Lincoln, NE 68588-0355 / (402) 472-2231 / FAX (402) 472-2837

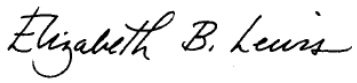
At the institutional level, UNL is one of only two institutions in Nebraska that can prepare students for the single-subject secondary certification in Earth and Space Science (ESS). It is imperative that our land-grant and flagship university continue to offer this certification—especially as interest in teaching geoscience has increased in response to global climate change, extreme weather events, and other socio-geoscientific challenges.

In addition, many of our science teacher candidates—particularly those serving in smaller (Class C) schools—pursue a general science endorsement that requires coursework in all three domains: Earth/space science, life science, and physical science. For the ESS component, students must complete courses in geology, oceanography, meteorology, and astronomy—75% of which are taught by EAS faculty. These courses are foundational for developing teachers' competencies and ensuring they can translate scientific knowledge into high-quality instruction that builds students' scientific literacy.

Weakening or removing this preparation will have cascading consequences: poorer science instruction in Nebraska's schools, lower student achievement in science, and ultimately, fewer college students pursuing STEM degrees and careers. While the proposed elimination of EAS might yield short-term budget savings of approximately $2 million, the long-term costs—to the university's academic reputation, to Nebraska's teacher pipeline, and to the state's STEM workforce—will be far greater.

The Department of Earth and Atmospheric Sciences is not simply one of many departments; it is a cornerstone of UNL's land-grant mission, advancing both scientific discovery and public education. I urge the university's leadership to reject this proposal and to pursue budget solutions that preserve the excellence, reach, and impact that define our institution.

Yours respectfully,



Elizabeth B. Lewis, Ph.D.
Coordinator, Master of Arts with emphasis in science teaching (MAst) and Undergraduate Secondary Science Teacher Education Programs
Senior Advisor, Secondary Science Education, Center for Science, Mathematics, and Computer Education
295 Carolyn Pope Edwards Hall
Department of Teaching, Learning & Teacher Education
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October 7, 2025

Academic Planning Committee
University of Nebraska–Lincoln

Dear Members of the Academic Planning Committee,

I am writing as a proud alumnus of the University of Nebraska–Lincoln (B.S. 1995, M.S. 1998), a former Professor of Practice and academic adviser for the Meteorology-Climatology degree (2008 – 2016), and a long-time collaborator with faculty and graduates of the Department of Earth and Atmospheric Sciences (EAS) in my role as a research climatologist with the National Drought Mitigation Center and the Nebraska State Climatologist (2016 – present). I am deeply concerned about the proposed elimination of this department, which **plays a vital role in advancing the University's research mission and serving the people of Nebraska**.

Nebraska's identity, economy, and safety are inseparable from the land and the climate. Floods, droughts, tornadoes, and severe storms affect nearly every community in our state. EAS provides the **only Atmospheric Science degree in Nebraska—and the only one in the NU system—that qualifies graduates to serve as meteorologists for federal agencies** such as the National Oceanic and Atmospheric Administration, the National Weather Service, the Department of Defense, and the National Park Service. EAS graduates serve in these roles in Nebraska and across the nation, providing vital expertise to protect lives and property.

EAS faculty, current students, and alums also **directly support Nebraskans through their work with numerous centers in the NU system**, including the National Drought Mitigation Center, High Plains Regional Climate Center, Nebraska State Climate Office, and the Conservation and Survey Division (State Geological Survey). Alums of these centers serve as directors of three of these offices, while many others are employed as research scientists. Students in the Meteorology-Climatology program **fill critical gaps for Centers,** gaining valuable experience, increasing productivity**, and creating a pipeline for future employees that keeps talent within the state**.

Cross-departmental collaborations, such as *Understanding and Assessing Climate Change: Preparing for Nebraska's Future,* a legislatively commissioned report that I led, are essential in addressing the complex problems that intersect at the nexus of weather and climate, water, energy, agriculture, and health in the state of Nebraska. Thus, for a state whose economy and safety depend on the land and climate, **it is inconceivable and incredibly short-sighted that the University proposes to prioritize budget savings over programs that train the very scientists needed to tackle the unique challenges that our state faces**.

The importance of EAS's work is reflected in the perspectives of Nebraskans themselves. The Nebraska Rural Poll consistently shows strong awareness and concern about weather and climate-related risks—issues at the heart of EAS research. Rural residents report significant personal and community impacts from severe weather, including crop and livestock losses, property damage, stress or anxiety, infrastructure damage, and strain on the community.

Nebraskans and the nation rely on university-based expertise for trusted information and guidance. EAS faculty expertise directly addresses these needs, providing vital services to communities across the state and **upholding the University's land-grant mission by connecting scientific discoveries to the needs of communities and industries throughout the state**.

As a former undergraduate and graduate student, and a faculty member at UNL, on both the city and east campuses, I have witnessed the vicious cycle that began with the failure to fill vacant faculty positions and the reduction of graduate teaching assistantships. This led to fewer course offerings, declines in prospective students – particularly those seeking specialized programs - and higher workloads among the remaining faculty. Despite these challenges, EAS maintained excellence, earning **national recognition among faculty and students through research awards, national and international honors, and high-impact scholarly publications**. Eliminating the EAS would weaken UNL's research capacity and hinder its ambitions to rejoin the AAU.

Rather than eliminating the department, the University should provide leadership and facilitate efforts to maximize EAS success and potential by drawing upon faculty expertise – including severe weather, climate extremes, observational platforms, and education/communication that translate findings for learners and stakeholders – and bridging gaps across campuses and centers. EAS degree **programs are not duplicative but complementary to those in IANR/CASNR, UNO, and UNMC**. Thoughtful, strategic planning that creates a shared vision among faculty and includes institutional commitments (leadership, resource allocation, and curriculum) could establish a **preeminent program focused on extreme events and their impacts on water, energy, agriculture, and health** in the state of Nebraska, attracting students and funding.

I strongly urge the University to retain the Department of Earth and Atmospheric Sciences and invest in its future by leveraging expertise and resources throughout the NU system. **Its faculty, students, and alums embody the very best of UNL's commitment to education, research, and public service**.

Sincerely,

Deborah J. Bathke
Nebraska State Climatologist and Associate Professor
School of Natural Resources
University of Nebraska-Lincoln

*"We'll all stick together, In all kinds of **weather**, For dear old Nebraska U."*
Henry Pecha, Dear Old Nebraska U, 1923

September 23, 2025

Dear Members of the Academic Planning Committee

I am writing to express my unwavering support for the Department of Earth and Atmospheric Sciences (EAS) and my strong opposition to the proposed elimination of this unit and its associated degree programs. I was shocked to read this proposal in the document recently distributed to UNL faculty and staff. The importance of the various disciplines that comprise the research and teaching programs of this department has never been more relevant than today. Any decision to eliminate or reduce the mission of this department is both shortsighted and counter to the challenges we face to better understand and manage the state's precious natural resources for current and future generations.

Throughout my 40-year tenure at UNL, I have worked closely with many of the faculty in the Department of Earth and Atmospheric Sciences. My association with faculty in the department began soon after I joined the faculty in 1977 and later when I founded the National Drought Mitigation Center (NDMC) at UNL in 1995 and then served as Director of the School of Natural Resources from 2007 until 2012. Alumni from EAS have served the university and the state well in staff positions in the NDMC, the High Plains Regional Climate Center (HPRCC), and the State Climate Office. In fact, one of my first hires after forming the NDMC was Mark Svoboda who in 2016 was appointed Director of the NDMC, a position that he continues to hold today.

Importantly, it is critical to note that the EAS Department offers the only Atmospheric Science degree in the state, let alone the University of Nebraska system, that qualifies recipients to work for National Weather Service. In addition, the Geology degree is the only avenue at UNL for students to qualify to be Licensed Professional Geologists. The graduate programs are the only Earth and Atmospheric Science graduate programs in the state.

As a climate scientist, I could cite numerous important research and outreach contributions that faculty and staff in EAS have provided to the state in recent years and must continue to provide in the future. I am sure the details of these accomplishments will be documented by the department so I will not include those in my letter. However, absent this department and its quality research and teaching programs, the state will be much less

prepared to respond to the challenges and opportunities that face the state in the near and long term.

The EAS Department has a long history of producing exceptional graduates that fill critical jobs in the public and private sectors both in Nebraska and elsewhere. EAS faculty conduct research that provides weather forecasters with tools to warn us of impending severe weather. The economic, environmental, and social losses associated with severe and extreme weather events in Nebraska and across the nation have increased significantly in recent decades. EAS faculty also provides critically important projections of climate trends to assist farmers, natural resource managers, and policy makers with the information necessary to plan for and adopt strategic adaptation and mitigation measures. EAS faculty, staff, and students also help to identify and secure adequate supplies of clean water and strategic minerals and the energy resources needed now and in the future.

I urge you to recommend that the Department of EAS and its programs be maintained and strengthened to help the state address the important scientific and natural resource issues that lie before us.

Sincerely,

Dr. Donald A. Wilhite, Professor and Director Emeritus
National Drought Mitigation Center
School of Natural Resources
University of Nebraska-Lincoln

Feedback on the proposed elimination of Stats and EAS

Petronela Radu, Olson Professor and Chair, Department of Mathematics

It is easier to heal the sick than to revive the dead.

The Department of Mathematics will be affected by the proposed budget cuts in several ways, but the most damaging would be the elimination of Statistics and Earth and Atmospheric Sciences (EAS). As science units, Stats and EAS have been impacted by shrinking opportunities for external funding, but their elimination would create far more issues for UNL than solving, as outlined below.

Statistics:

1. **Centrality of discipline.** It is impossible to conceive of an R1 university (especially one aspiring to rejoin AAU) that does not have a Statistics department, or at the very least, be represented meaningfully in another unit. In 2003 when Statistics became a separate unit from the Department of Mathematics, a main argument was the fact that only one other university in AAU had a combined department (of Math and Stats). Moreover, as UNL is situated in a predominantly agricultural state, it risks losing credibility among its stakeholders, at a time when it needs to bolster connections across the state.
2. **Rise of Data Science and Machine Learning.** The societal importance of Data Science and Machine Learning cannot be overstated. These rapidly evolving fields rest on three pillars: Mathematics, Computer Science, and Statistics. UNL invested over two years in designing an interdisciplinary Data Science major, which has already grown to more than 100 students across UNL. We have also started designing a new online Master Degree in Data Science that it is expected to generate close to $500K/year. The elimination of Statistics would jeopardize this momentum. Statistical expertise cannot be replaced by offering a few service courses; it requires a critical mass of faculty engaged in research, curriculum development, and mentoring. Without Statistics, UNL risks undermining both the growth of Data Science and its reputation in preparing students for the data-driven economy.
3. **Path Forward.** If maintaining a stand-alone Department of Statistics is ultimately deemed unsustainable, then a strategic **unit realignment** must be considered rather than outright elimination. To safeguard continuity, a sufficient number of Statistics faculty must be retained, recognizing that some attrition is inevitable in any reorganization. With thoughtful restructuring, budgetary savings on the order of $1M can still be achieved without sacrificing the university's academic integrity.

Earth and Atmospheric Sciences (EAS):

1. **Criticality of the discipline.** The same credibility concerns apply with even greater urgency to Earth and Atmospheric Sciences. The elimination of a department central to studying climate and environmental change—disciplines sometimes publicly challenged precisely because of their rigor and accuracy—would raise serious doubts about UNL's commitment

to addressing some of humanity's most pressing challenges. For a land-grant, R1 institution, removing EAS would be a profound step backward in both mission and reputation.

2. **Partnership with science departments.** EAS has been an indispensable partner across CAS, providing sustained support for interdisciplinary initiatives, including the Data Science major, collaborative research proposals, and joint conferences. Faculty in EAS have consistently worked across unit boundaries, strengthening the university's research profile and serving as reliable collaborators for colleagues in Mathematics and beyond.
3. **Research connections with the Department of Mathematics.** Strong research ties already exist between EAS and the Department of Mathematics. Three current Mathematics faculty (Avalos, Larios, Yamazaki) work on fluid dynamics, specifically the Navier–Stokes Equations, the foundational equations governing fluid flow. Recently, Professors Foss and Radu (together with Larios) have also initiated a collaborative research project in this area with a faculty member in Engineering and a mathematics graduate student. It is expected that the field will continue to grow, given the critical need of reliable prediction tools will as natural phenomena like tornadoes and hurricanes increase in frequency and intensity. Our faculty members have submitted feedback regarding their collaborations with EAS. Eliminating EAS would dismantle critical infrastructure for this work, at precisely the time it is most needed.

Feedback received from math faculty:

Adam Larios: *The Department of Earth and Atmospheric Sciences (EAS) is essential to my research program. In particular, I have sent many students for graduate research positions at Los Alamos National Laboratory (LANL), where they gain world-class expertise, invaluable professional connections, and experience working on cutting-edge science and technology. LANL researchers consistently emphasize that the single most important qualification for students is a background in geophysics. At UNL, this preparation comes directly from EAS courses.*

For many years, all of my PhD students, along with several other PhD students in the math department, have taken the "Dynamic Meteorology" (METR 811/812) course, taught alternately by Profs. Adam Houston and Qi (Steve) Hu. The quality of education in this course, which teaches the fundmentals of fluid dynamics and weather prediction, has been instrumental to their success. Indeed, after taking it, two of my students, Elizabeth Carlson and Collin Victor, were awarded the highly prestigeous Director's Fellowship at LANL. The resulting connections between UNL and LANL have led directly to joint publications, multiple NSF grants, and strong reviews praising the LANL partnership as a particular strength. NSF has repeatedly highlighted the student pipeline to LANL as an excellent example of next-generation workforce training.

If the EAS department were eliminated, the consequences for my program would be severe. It would jeopardize my ability to sustain collaborations with LANL, undermine a research portfolio that has brought roughly $1.7 million in NSF support to UNL, and sharply reduce opportunities for

Nebraska students to participate in world-class science. Moreover, it would interrupt ongoing collaborations with EAS faculty. For example, I am currently working with Profs. Adam Houston and Ross Dixon to establish UNL as a hub for fluid dynamics research in the Midwest through new grant and conference proposals.

In short, eliminating the EAS department would dismantle a highly successful student pipeline to LANL, weaken research connections within and beyond UNL, and remove a major strength in obtaining external funding. I urge the university to reconsider eliminating the Department of Earth and Atmospheric Sciences.

George Avalos: *I have been contacted a couple of my Graduate Students about previous Coursework, taken from members of EAS, and Dylan McKnight provided these details, which might be included in our statement:*

` ` I (Dylan) took Dynamic Meteorology I & II (811 and 812 I think). Both courses covered in very good detail (for a cross listed grad/undergrad course) the techniques of Navier-Stokes and related laws (ideal gas, etc) at synoptic scales (weather patterns a few states wide and time scales of about a day). I use the intuitions I gained in that course constantly since. Additionally, there was a hefty programming requirement in Matlab that helped bolster my skills. Liz Carlson, Matt Enlow, and Isabel Safarik took the same courses as me, and had similar sentiments. They were also quite full classes, with 20+ students both semesters."

Kazuo Yamazaki: *Prof. Adam Houston is a full Professor in the Department of Earth and Atmospheric Sciences, and he kindly accepted my request to be a Senior Personnel for the NSF proposal to organize EPSCoR Workshop ` `Workshop for Research and Workforce Development in Fluid Mechanics in EPSCoR States." The workshop was awarded, and it took place in May 2025; Prof. Adam Houston physically attended some of the talks, when I had the pleasure of meeting him in person (Prof. Ross Dixon was also a registered participant whom I met during the workshop). Through No-Cost-Extension, a follow-up mini conference will take place in April 2026.*

Conclusion:

Both **Statistics** and **Earth and Atmospheric Sciences** are foundational disciplines at any comprehensive, research-intensive university. Their elimination would diminish UNL's academic credibility, weaken its research capacity, and undercut interdisciplinary initiatives that are central to the university's future. Thoughtful realignment, rather than elimination, can achieve financial efficiencies while preserving the intellectual and reputational core that UNL must maintain to thrive as a flagship, land-grant, R1 institution.

University of Nebraska Lincoln

SCHOOL OF NATURAL RESOURCES

October 2, 2025

Academic Planning Committee
University of Nebraska-Lincoln

Dear Members of the Academic Planning Committee,

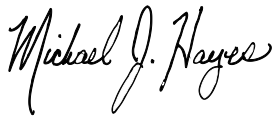
I am writing to express my strong support for the Department of Earth and Atmospheric Sciences (EAS) and to voice my deep concern over the proposal to eliminate this unit and its degree programs. Such a decision would have far-reaching negative consequences for UNL, the state, and the communities that depend on the expertise cultivated within EAS.

EAS offers critical academic pathways that cannot be replaced elsewhere in Nebraska. The Atmospheric Science program is the only one in the state that qualifies graduates for positions with the National Weather Service (NWS)—a role essential to protecting lives, property, and the economy. Research in 2011 demonstrated that weather variability impacts nearly half a trillion dollars of U.S. GDP annually, a figure that has only grown since 2011. Trained meteorologists are not a luxury; they are an indispensable part of national resilience. Likewise, since 1980, weather disasters have caused nearly $3 trillion in losses across the U.S.—a burden Nebraska shares. The research EAS faculty and graduate students pursue directly addresses understanding natural disasters and their impacts.

From my perspective as a faculty member in the School of Natural Resources, I have seen first-hand how EAS faculty and students contribute to interdisciplinary teaching, research, and outreach across UNL. Their work is deeply complementary to ours, particularly on issues such as irrigation and water management—topics that lie at the heart of Nebraska's agricultural economy and long-term sustainability. The collaborations between EAS and other units on campus exemplify how the whole truly becomes greater than the sum of its parts. This is precisely the kind of academic synergy Nebraska needs to confront the "wicked problems" facing our state.

Now more than ever, Nebraska needs to strengthen—not dismantle—its capacity in Earth and Atmospheric Sciences. To eliminate EAS would not only erode the state's ability to train future professionals in critical fields but also diminish the university's leadership role in safeguarding Nebraska's environmental, agricultural, and economic future. I strongly urge you to recommend maintaining EAS and its programs. Its continuation is vital to the mission of the university and to the well-being of Nebraska's people and resources.

Sincerely,



Michael J. Hayes, Ph.D.
Professor, School of Natural Resources

3310 Holdrege Street / 811 Hardin Hall / P.O. Box 830968 / Lincoln, NE 68583-0968

FROM:

Bruce Johnson

UNL Professor Emeritus of Department of Agricultura Economics, and Founding Member of the NE Elder Climate Legacy Initiative

Lincoln, NE

October 7, 2025

TO:

Academic Planning Committee

University of Nebraska—Lincoln

Dear Members,

I am writing on behalf of the NE Elder Climate Legacy Initiative, a certified State of Nebraska non-profit organization. We are expressing our full support for the UNL Department of Earth and Atmospheric Sciences (EAS) and our profound opposition to its proposed elimination and with it the degree programs it currently offers.

From our perspective as seniors, we look to the future through the eyes of our children and grandchildren. We believe our changing climate represents an existential threat to them and the generations to come. But we also understand the genuine opportunities for adaptation and mitigation that can lead to a more livable future **if** we embrace sound science and act accordingly. To that end, EAS's educational degree programs necessary for professional certification and its valuable long-term research thrusts are critical to the future of this state and beyond.

A recent case in point. Last month, the Nebraska State Climate Office released its report, *Understanding and Assessing Climate Change: Preparing for Nebraska's Future (2024 Climate Change Impact Assessment Report).* The lead author, Dr. Debra Bathke currently serves as the Nebraska State Climatologist—a native Nebraskan who by-the-way received B.S. and M.S. degrees in Earth and Atmospheric Sciences from UNL (the only Earth and Atmospheric Science graduate programs in the state). She subsequently received her Ph.D. in meteorology from Ohio State University.

This comprehensive report, commissioned by the Nebraska Legislature, provides invaluable analysis and metrics for both appropriate adaptation and mitigation. It is particularly noteworthy that Challenges We Face (Chapter 3) are based on sophisticated national and global climate modeling which incorporates more than 50 indicators of change into the analysis. These global models can provide geographic resolution down to 60 to 120 miles. However, under the leadership of Dr. Ross Dixon and his graduate assistant in UNL's Department of Earth and Atmospheric Sciences, they downscaled the global models to a geographic resolution for Nebraska and the neighboring region to 4 miles! Hence, Chapter 4, *Projections of Nebraska's Future*

Climate are refined to better reflect this state's diversity from north to south and west to east. This we believe is an extraordinary effort in climate science that is serving Nebraskans and their policy representatives well. And increasingly so as our weather and climate extremes intensify into the future.

Beyond this short-run example, there are several other long-term research/teaching efforts and accomplishments this department has made over the years, even decades, that are nationally and internationally recognized. Of particular research significance is the Antarctic Drilling Program (ANDRILL) in operation for more than thirty years with its management and major leadership over the years centered here at UNL. ANDRILL'S primary role is intensive study of Antarctica's role in global environmental climate change. Given our rapidly changing climate it would be hard to find any other aspect of UNL more scientifically relevant to understanding and addressing the challenges facing humanity today. It is a unique and extremely valuable UNL 'pillar of science' with a wide breadth of practical insight for all Nebraskans and the global community.

Regarding education, here the department's long-standing programs for science teacher professional development are noteworthy. Geoscience courses taught by EAS faculty, and the professional programs they lead are critical in enhancing science teacher preparation for certification in Earth and Space Science (ESS) fields as well as broad science certification. This model of hands-on education expands students' exposure in science and, ultimately, their impact in the advancement towards a more scientifically literate society.

In sum, EAS's contributions in both research and teaching to the UNL mission are laudable. And certainly, far beyond what any administrative 18-item spreadsheet metric can appropriately measure and determine that the home department is deficit and therefore should be eliminated.

Bottom line. As our 'Flagship, Land Grant University' we as Nebraska Climate Legacy elders say, "UNL, do not abandon this program, succumbing to the whims of those officials who seemingly regard climate science as *woke".* In fact, quite the contrary, we suggest you go on record requesting that state officials provide increased financial support for building out this program to even greater excellence. Nebraskans today as well as our children and future generations will benefit.

Thank you in advance for your attention and appropriate response.

University of Nebraska State Museum
Morrill Hall
645 N 14th Street
Lincoln, NE
68588-0338

October 9, 2025

Dear Academic Planning Committee,

In my role as the associate director of the University of Nebraska State Museum, I witness daily the impact of the department of Earth and Atmospheric Sciences (EAS) and so was very disappointed to learn about the proposed elimination of the department. The department has had an enormous impact on the state, inspiring learners from K-12 and beyond to engage with science. Within the museum field, many refer to paleontology and geology as gateway sciences. These are the critical disciplines which engage young people and encourage them to discover their own scientific passions and interests.

A factor which I believe should be given more weight is that of broader societal impact. EAS has been an important partner of the museum for many years, both directly and indirectly. The department has co-hosted an annual Dinosaurs & Disasters event for over 25 years. This event showcases the department's work, as well as highlights new discoveries and technologies. Through this event alone, it is estimated that EAS researchers have directly engaged with over 30,000 Nebraskans. This impact is generational. Those children who attended the first event are now grown and bringing their own families to learn and enjoy; however, the impact of the department has not been limited to this event.

In the recent development of the 4th floor of Morrill Hall, Cherish Nebraska, faculty, staff, and students from EAS were instrumental in developing the content and design of the finished product. This floor of the museum highlights much of the recent research and work of EAS, bringing life to science and sharing it with visitors. Since opening this exhibit, a conservative estimate is that 400,000 people have visited, engaged, and learned from this project EAS helped create. Expanding this impact to exhibits created previously, the number of individuals reached is in the millions. With visitors from throughout the United States and the world, the impact EAS has had on these visitors and scientific community is immeasurable.

The museum also benefits directly from EAS faculty who hold curatorial appointments in both vertebrate and invertebrate paleontology. With the paleontological collection being the flagship collection of the museum, these individuals establish the strategic direction and care of over 1.5 million specimens. The fossils contained within the museum’s collection provide a critical record for life in the Great Plains and the research conducted on them, often by faculty and students of EAS, have played vital roles in our understanding of changing climates and evolution. Additionally, the department’s ongoing support and engagement at Ashfall Fossil Beds has enabled the

museum to offer research opportunities to students from throughout the world, as they steadily uncover Nebraska's rich natural history.

Since the museum opened in 1871, researchers in geology and paleontology (eventually the department of EAS), have been deeply integrated with our work, including training and inspiring the next generation of scientists. EAS has been a cornerstone of the museum, enabling its success and supporting its future. I strongly urge reconsideration of the decision to eliminate the department.

Kind regards,

Adam Eakin
Associate Director, UNSM

Shane Tucker
6930 North 13th Circle
Lincoln, NE 68521

October 6, 2025

Dear Members of the Academic Planning Committee,

I'm writing this letter in support of the UNL Department of Earth and Atmospheric Sciences. The education and training that I received from faculty and staff had a profound impact on my life and professional career.

My interest in geology and paleontology started at an early age in York, Nebraska. My family loved the outdoors and frequently camped at lakes and state parks throughout Nebraska. Most of my days involved exploring the creeks, lakes, and bluffs around the campground. I was fascinated by the multi-colored pebbles and fossils embedded in the rocks lining the shoreline having no knowledge of their origin. We would visit nearby museums, nature centers, and archeological and fossil sites on these trips. As a high school student, I met Dr. Michael Voorhies, professor in the UNL Department of Geology (at the time) and Curator in the University of Nebraska State Museum, at Ashfall Fossil Beds. This interaction reinforced my desire to study geology and paleontology as a first-generation student at the University of Nebraska-Lincoln.

The training that I received during my tenure as an undergraduate and graduate student at UNL was second to none. Not only did they prepare me for a career in the core geology curriculum (mineralogy, petrology, stratigraphy, sedimentology, geomorphology, paleontology, etc.) but also in the necessary peripherals such as public speaking, communicating science with the public, scientific writing, developing research proposals, data collection, field methods and techniques, and statistics. As a field-based discipline, most of the courses involved trips and/or class projects. These hands-on opportunities reinforced the concepts taught in the classroom but critical thinking through observations and group discussions. As the Highway Paleontologist for Nebraska, these field trips laid a foundation for my understanding of the Nebraska rock layers and their depositional history. These excursions to Colorado, Wyoming, Kansas, the southwest United States, Turks and Caicos, and Canada were also my first ventures outside Nebraska and South Dakota. All of this professional training led to internship opportunities at the Nebraska Geological Survey, Ashfall Fossil Beds, University of Nebraska State Museum, and Highway Paleontology Program.

After completion of my coursework in my graduate program, I took a full-time position with the Highway Paleontology Program at the University of Nebraska State Museum. Recently, I received recognition for 25 years of service to the University. The training provided by the Department made me a leader in the field of mitigation paleontology and authority about Nebraska geology and paleontology. I have worked closely with multiple state and federal

agencies over the years and I've been fortunate to share my knowledge of geology and paleontology with learners of all ages throughout Nebraska during my daily work adventures. One of my most rewarding accomplishments during my tenure is mentoring the next generation of professionals from the Department of Earth and Atmospheric Sciences that had the same aspirations as myself when I stepped onto campus more than three decades ago.

The camaraderie with classmates and professors during my tenure at UNL created lifelong friendships. Many of our conversations reflect on memories centered on our coursework, professors, and the field trips that we attended together.

I can't imagine the University without the Department of Earth and Atmospheric Sciences especially in a state in which natural resources, weather and climate are critical to our economy, agriculture, and daily lives. The education that UNL students receive prepares for the local workforce in private industry and state and federal agencies that manage these resources and keep the public safe. I hope that UNL will reconsider the elimination of this program that impacts all Nebraskans.

Sincerely,

Shane Tucker
Highway Paleontologist
University of Nebraska State Museum
B.S. with Distinction in Geology, 1997
M.S. Geosciences, 2004

10.3.5 Letters from Academic Institutions

A. Univ. of Wisconsin-Madison, Chair – M. Cardiff, NAS Member – J. Valley, & 7 Faculty
B. University of Illinois, Department Head – Craig Lundstrom
C. The Ohio State University, Professor - Steven Quiring
D. University of California - Davis, Chair - Magali Billen
E. University of Colorado – Boulder, Chair - Katja Friedrich
F. Wasatch – Uinta Field Camp, University of Illinois, Director – Michael Stewart
G. University of California - Davis, Professor Emerita - Sandra Carlson
H. Montana State University, National Academy of Sciences member – Cathy Whitlock

To whom it may concern:

We are writing to express our concern regarding the recent announcement of the closure of the Department of Earth & Atmospheric Sciences at the University of Nebraska-Lincoln. This decision, made in response to the university's budget deficit, will have long-term negative consequences for Nebraska and its citizens, as well as the national geologic and atmospheric science community. As another Big 10 Earth Sciences department who share a geological fieldcamp with the University of Nebraska-Lincoln, we are particularly affected by this elimination. We urge you to reconsider this course of action and explore alternatives to preserve the vital resource that the department represents.

The Department of Earth & Atmospheric Sciences at the University of Nebraska-Lincoln is a nationally recognized program. The Department has kept core faculty across a disciplinary range, but has emphasized programs that are critical for the well being and economic interests of the State of Nebraska: Environmental Geosciences, Hydrogeology, Paleoclimate and Paleoenvironment, and Sedimentary geology. Graduates of this program have achieved distinction in academia, industry, and government, emphasizing the program's impact.

Geologists and Atmospheric Scientists address critical priorities like natural hazard mitigation and groundwater management. Closing the department undermines these efforts, weakening our region's ability to predict and respond to challenges. There are also economic and safety impacts. The Department contributes significantly to Nebraska's geological and environmental workforce. Many alumni work for governmental and private agencies, impacting water resource management and public safety. Particularly for a state in the center of "Tornado Alley", there is a need for trained meteorologists and climatologists which contribute to Nebraska residents' safety. More nationally, the need for geologists to secure domestic sources of critical minerals is a stated National security concern. Closing this program disrupts a crucial pipeline of qualified professionals for all of these fields.

Finally, this limits the possibilities for the undergraduate students in the State of Nebraska. Our students interact with Nebraska students at fieldcamp, and we are all enriched by these interactions. Geology is a "found" major, as most students are not exposed to geology as a career path in high school. The projected needs for qualified geologists in the area of critical minerals alone will result in employment for a large cohort of students, and thus elimination of the Department is cutting off employment opportunities for these students. The same is true for the field of environmental geology and groundwater resources.

We strongly urge reconsideration of this move by the University of Nebraska-Lincoln. The closure of this program represents not just the loss of an academic department but a significant setback to workforce development, public safety, and environmental stewardship. Please consider preserving this program for future generations.

Thank you for your attention to this urgent matter.

This statement reflects the views of the individuals below and does not represent endorsement by any division within the University of Wisconsin-Madison.

Sincerely,

Michael Cardiff
Professor and Department Chair
Department of Geoscience
University of Wisconsin Madison

John W. Valley, Professor of Geoscience emeritus and member of the National Academy of Sciences, Department of Geoscience, University of Wisconsin-Madison

Eric Roden, Professor of Geoscience, Department of Geoscience, University of Wisconsin-Madison

Jean M. Bahr, Professor of Geoscience Emeritus, Department of Geoscience, University of Wisconsin-Madison

David Mickelson
Emeritus Professor of Geoscience
University of Wisconsin-Madison

Alan R. Carroll, Professor of Geoscience Emeritus, Department of Geoscience, University of Wisconsin-Madison

Andrea Dutton, Helen Jupnik Professor of Geoscience, University of Wisconsin-Madison

Dana H. Geary, Professor of Geoscience Emeritus, Department of Geoscience, University of Wisconsin-Madison

Laurel Goodwin, Professor of Geoscience, Department of Geoscience
University of Wisconsin-Madison

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

College of Liberal Arts & Sciences
Department of Earth Science & Environmental Change
3081 Natural History Building, MC-102
1301 W. Green St.
Urbana, IL 61801

Sept. 23, 2025

Academic Planning Committee University of Nebraska–Lincoln

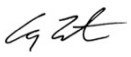
Dear Members of the Academic Planning Committee,

I am the Department Head of Earth Science and Environmental Change at the University of Illinois at Urbana Champaign (usually one of the top 3 universities in the US in terms of federal science funding). As a fellow member of the BigTen Academic Alliance, I am writing to express my strong support for the Department of Earth and Atmospheric Sciences (EAS) at UNL. At our institution, Earth Science is viewed as an essential program for the education of Illinois citizens because of its critical impact on issues of water quality and agriculture as well as global issues such as climate change. During my 26 years as a faculty member, I have seen the contributions of UNL faculty to essential research in Earth Science—EAS provides the same essential education to Nebraska citizens as we do to Illinois. I want to express my strongest opposition to the proposed elimination of this unit and its associated degree programs.

The EAS Department provides a Geology degree which is the only mechanism at UNL for students to qualify for licensure as Licensed Professional Geologists. The graduate programs are the only Earth and Atmospheric Science graduate programs in the state. EAS offers the only Atmospheric Science degree in the state, let alone the University of Nebraska system, that qualifies recipients to work for the National Weather Service. These are essential to the citizens of your state.

The EAS Department has a long history of producing exceptional graduates that fill critical jobs in the public and private sectors both in Nebraska and elsewhere. These are the individuals that warn us of impending severe weather, help to secure adequate supplies of clean water and strategic minerals, and identify the energy resources needed now and in the future. Faculty in the EAS Department have led high-impact research that advances understanding of the Earth system while bringing in high-dollar grants into Nebraska and preparing the next generation of Earth scientists.

I urge you to recommend that the Department of EAS and its programs be maintained. Sincerely, Sincerely,



Craig C. Lundstrom, Professor and Department Head,

Earth Science and Environmental Change, UIUC

lundstro@illinois.edu

THE OHIO STATE UNIVERSITY

Atmospheric Sciences Program, Department of Geography
College of Arts and Sciences

1036 Derby Hall
154 North Oval Mall
Columbus, Ohio 43210

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614-292-6213 Fax
www.geography.osu.edu

September 22, 2025

Subject: A Letter of Support for the Department of Earth and Atmospheric Sciences at UNL

Dear University Leadership,

I am writing to express my strong support for the Department of Earth and Atmospheric Sciences at the University of Nebraska-Lincoln and to advocate for the continued strength and investment in its unique atmospheric sciences program. I am a Professor in the Atmospheric Sciences Program at The Ohio State University and a Fellow of the American Meteorological Society. I am very familiar with the Department of Earth and Atmospheric Sciences because I have had the privilege of collaborating with a number of faculty and I gave an invited lecture in the Department in 2015.

As a faculty member at another Big Ten university, I am well aware of the quality and reputation the Department of Earth and Atmospheric Sciences at the University of Nebraska-Lincoln. As the only undergraduate meteorology program in the state of Nebraska, this department provides an essential service to the state's economy, safety, and future. The potential closure of this program represents an irreplaceable loss.

The Atmospheric Sciences faculty in this department represent a formidable concentration of expertise and a vital asset to the university. With experts like Professors Adam Houston, Steve (Qi) Hu, Liang Chen and Matthew Van Den Broeke, the department is at the forefront of research in severe weather, mesoscale processes, climate change, and land-atmosphere interactions. These faculty are widely respected within the discipline as the among the best and brightest atmospheric scientists in the United States. Their research is not only theoretical; it directly addresses the critical challenges faced by Nebraskans. They are actively engaged in projects related to severe storms, climate diagnostics, and the use of unmanned aircraft systems to improve weather forecasting. This vital research serves as a cornerstone for both academic prestige and public safety.

For a state where agriculture is the lifeblood of our economy, the role of meteorology is paramount. Nebraskan farmers and ranchers rely on accurate and timely weather information to make critical decisions about planting, irrigation, harvesting, and livestock management. The program at UNL provides a steady pipeline of homegrown meteorologists who understand the specific weather patterns in the state, from the sudden onset of severe thunderstorms to the long-term trends of drought and flood. The research and outreach from this department directly support the agricultural community, helping them to reduce risks and increase yields in an era of unpredictable weather.

Furthermore, the impact extends far beyond agriculture. Businesses across the state—from transportation and energy to insurance and construction—depend on meteorological data and forecasting to ensure operational continuity and safety. The Atmospheric Sciences program at UNL is producing highly qualified graduates who are not only prepared for careers with the National Weather Service but also for roles in private consulting and a wide range of industries that require a deep understanding of our regional climate.

The Meteorology-Climatology B.S. degree is a comprehensive program that meets the recommended curriculum of both the American Meteorological Society (AMS) and the University Corporation for Atmospheric Research (UCAR). This rigorous curriculum prepares students for federal employment and for

graduate studies, ensuring that Nebraska's students can pursue top-tier careers and research opportunities without leaving the state.

The Department of Earth and Atmospheric Sciences is a strategic necessity for the state of Nebraska. It is our sole source of undergraduate meteorology education, and it provides a critical service to our most important industries. I urge you to recognize the immense value of this department and to continue to support its essential programs.

Sincerely,

Dr. Steven M. Quiring
Professor
Fellow, American Meteorological Society

Professor Magali Billen
Department Chair, Earth and Planetary Sciences, UC Davis
Davis, CA

September 20, 2025

Academic Planning Committee
University of Nebraska–Lincoln

Dear Members of the Academic Planning Committee,
I am writing to express my support for the Department of Earth and Atmospheric Sciences (EAS) and my strong opposition to the proposed elimination of this unit and its associated degree programs.

The EAS Department offers the only Atmospheric Science degree in the state, let alone the University of Nebraska system, that qualifies recipients to work for the National Weather Service. The Geology degree is the only avenue at UNL for students to qualify for licensure as Licensed Professional Geologists. The graduate programs are the only Earth and Atmospheric Science graduate programs in the state.

The EAS Department has a long history of producing exceptional graduates that fill critical jobs in the public and private sectors both in Nebraska and elsewhere. These are the individuals that warn us of impending severe weather, help to secure adequate supplies of clean water and strategic minerals, and identify the energy resources needed now and in the future.

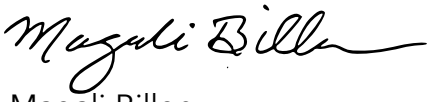
By closing these degree programs, you are giving thee Nebraska jobs to people from other states who will have to be recruited, likely costing more money than hiring a Nebraska native. Professional geologists play a major role in construction (site evaluation), site remediation and clean-up, and mineral exploration and extraction management. Nebraska is known for potential deposits of **critical minerals**, specifically niobium, scandium, and titanium, which are part of the Elk Creek Critical Minerals Project. Students trained in Earth and atmospheric science also bring their understanding of how the Earth works to disaster preparation (floods), city, county and state planning, or even as lawyers working for related industries. The Bureau of Labor and Statistics projects that Geoscientists related employment will grow by 3% from 2024-2034, and with older geoscientists reaching retirement, this means a continued demand for these students with the State of Nebraska.

One every campus around the country, departments like EAS are grossly undervalued. Yes, they teach fewer students than physics and chemistry because they don't have required introductory courses filling their lecture halls. But, when you think about it, which topic is of more practical importance to the State of Nebraska – geoscience or sub-atomic particles?

Faculty in the EAS Department have led high-impact research that advances the understanding of the Earth system, in ways that are valuable to the State of Nebraska, while bringing in high-dollar grants into Nebraska and preparing the next generation of Earth scientists.

I urge you to recommend that the Department of EAS and its programs be maintained.

Sincerely,



Magali Billen
Department Chair, EPS, UC Davis

University of Colorado Boulder

Prof. Dr. Katja Friedrich
Department of Atmospheric and Oceanic Sciences
University of Colorado
4001 Discovery Drive
311 UCB
Boulder, CO 80309-0311

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Katja.Friedrich@colorado.edu
URL: clouds.colorado.edu

September 16, 2025

Proposed elimination of the Department of Earth & Atmospheric Sciences at Nebraska

To Whom it May Concern

Eliminating Nebraska's only undergraduate and graduate programs in earth and atmospheric science would be a serious strategic mistake. The state's economy—spanning agriculture, energy, transportation, insurance, and emergency management—depends on high-quality weather and seasonal climate information and on a workforce trained to produce it. Nebraska also faces frequent hazardous weather, including drought, floods, winter storms, severe thunderstorms, hail, and tornadoes. A strong in-state program ensures the expertise needed to prepare for, respond to, and mitigate these risks. Closing the program would accelerate talent loss. Other states like Colorado will gladly educate Nebraska's top students and then retain them, along with the businesses and jobs that follow specialized expertise. Without a local pipeline of atmospheric scientists, Nebraska will either import services at higher cost or forgo the competitive advantages that come from having experts embedded in state agencies and industry. A comprehensive university serves the whole state—"universus" after all means "entire." Narrowing academic breadth in an area so central to Nebraska's safety and prosperity undermines that mission. Weather and climate hazards will not diminish because the program disappears; they will simply become harder and more expensive to manage. Maintaining and ideally strengthening earth and atmospheric science education and research keeps Nebraska in the "major leagues" of innovation, resilience, and economic competitiveness.

Sincerely,

Prof. Katja Friedrich
Professor and Chair of the Department of Atmospheric and Oceanic Sciences,
University of Colorado Boulder

Wasatch-Uinta Field Camp

September 23, 2025

Dear Members of the Academic Planning Committee,

We am writing on behalf of the Wasatch-Uinta Field Camp (WUFC) to express our strong support for the Department of Earth and Atmospheric Sciences (EAS) and our opposition to the proposed elimination of this unit and its associated programs.

The WUFC is a six-week intensive geology field program that trains students to solve geologic problems through rigorous field mapping, stratigraphic analysis, structural interpretation, and applied environmental problem solving. Since the University of Nebraska–Lincoln joined our program in 2020, 50 Nebraska students have participated with excellent results. These students were trained not only to interpret Earth history, but also to apply their skills directly to the kinds of challenges Nebraskans face today and will face in the future: securing natural resources, mitigating environmental hazards, and ensuring a sustainable future for the state.

We have consistently found Nebraska students to be among the most hard-working and successful in our program. Many have gone on to distinguished graduate school programs, and careers in mining, and environmental consulting, where their skills are being applied to real-world challenges. Their preparation through the EAS Department is equipping them to lead Nebraska into an era where geoscience expertise is increasingly vital. These skills will only grow more critical as the nation competes for oil and gas resources, strategic and critical minerals, and as communities face growing environmental and water resource challenges.

Eliminating the Department of Earth and Atmospheric Sciences at Nebraska's flagship university would deprive Nebraska students of access to the training they need to remain competitive in the workforce and would leave the state without a pipeline of geologists and atmospheric scientists prepared to address pressing societal challenges. The EAS Department is not only central to Nebraska's educational mission, but also to the state's economic, environmental, and national security interests.

For these reasons, we strongly urge you to reject the proposal to eliminate the Department of Earth and Atmospheric Sciences and its associated programs.

Sincerely,

Dr. Michael Stewart – WUFC Director, University of Illinois
Dr. Max Christie – Associate Director, University of Illinois
Dr. Karen B. Gran – Instructor, University of Minnesota – Duluth
Dr. Christopher Fielding – Instructor, University of Connecticut
Dr. Sarah Austin – Instructor, University of Illinois
Dr. Nooreen Meghani – Instructor, University of Illinois

On behalf of the Wasatch-Uinta Field Camp

UCDAVIS
DEPARTMENT OF EARTH AND PLANETARY SCIENCES
In the College of Letters and Science

September 16, 2025

To the Academic Planning Committee, University of Nebraska—Lincoln:

I am writing to register my strenuous objection to the proposed elimination of the undergraduate Geology program and the M.S. and Ph.D. graduate programs in the Earth & Atmospheric Sciences department at UNL. I learned of this disturbing possible action just this morning and am moved to write immediately. This action, if taken in December, would have devastating consequences for current students and faculty, for the field of earth sciences in general and paleontology in particular, as well as for the people of Nebraska more broadly — a loss that would be extremely difficult if not impossible to recover from.

Examining the criteria in support of reduction or elimination, I take serious issue with each of the main criteria, while agreeing strongly with each of the criteria indicating that elimination is inadvisable:

1. Preserve, if at all possible, programs central to the UNL mission.

As a paleontologist, faculty at the University of Nebraska have been highly respected, central figures in my field since my undergraduate days nearly 50 years ago. Bob Hunt and Michael Voorhies, and later Ross Secord and Peter Wagner, are legendary paleontologists, investigating not only the rich and diverse fossil record in Nebraska, but making extraordinary contributions to paleontology globally. Eliminating the programs that they have developed and nurtured for so long will give the state of Nebraska a serious academic "black eye" both nationally and internationally, with negative reverberating consequences to the state for years to come.

2. Reduce programs with excess capacity.

It is my understanding that there is no other graduate program in earth sciences in the state of Nebraska. Eliminating this program at UNL will force talented young Nebraskans interested in pursuing a career in earth sciences, including paleontology, to thrive in programs in other states, rather than in their home state. It is inconceivable that the earth sciences would not be considered an essential program for every university, particularly if there is no redundancy elsewhere in the state of Nebraska.

3. Eliminate peripheral programs.

The earth sciences cannot in any way be considered peripheral to the mission of UNL. As I am not a Nebraska citizen, I cannot list specifics, but the elimination of the earth science program at the flagship university in the state of Nebraska will certainly have a very serious negative impact on the economy and health of the state of Nebraska, well beyond what might be imagined in 2025. Nebraska has even designated three species of extinct proboscideans as state fossils: *Mammuthus primigenius*, *Mammuthus columbi*, and *Mammuthus imperator*. Without a doubt, these fossils have given the University of Nebraska-Lincoln, and thus the entire state, its distinctive character.

4. Improve or eliminate programs of lower quality first.

The quantity and quality of paleontological research being conducted in the department at UNL is known and valued nationally and internationally and has been so for many decades. I would predict that the level of teaching and service at UNL is equally high. I do not know this for a fact, but the Earth & Atmospheric Sciences program at UNL may be smaller relative to other physical science

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eps.ucdavis.edu

departments on campus in terms of student majors and student credit hours; this is not an uncommon occurrence at large public universities (e.g., University of California). Clearly, simply being large does not necessarily confer quality. UNL earth sciences have excelled in quality in spite of size.

In sum, I strongly and vigorously object to the prospective elimination of the Department of Earth & Atmospheric Sciences at the University of Nebraska-Lincoln. Please do not hesitate to contact me if you require additional information in support of my position.

Thank you for your consideration.

Sincerely,

Sandra J. Carlson
Professor Emerita of Geology
Past-President, The Paleontological Society
Department of Earth and Planetary Sciences
sjcarlson@ucdavis.edu
University of California
One Shields Avenue, Davis, CA 95616-8605

MONTANA STATE UNIVERSITY
College of
LETTERS & SCIENCE

Department of
Earth Sciences

September 19, 2025

Chancellor Rodney D. Bennett
University of Nebraska-Lincoln
Lincoln, NE 68588

Dear Chancellor Bennett:

As Regents Professor Emerita of Earth Sciences at Montana State University and a member of the National Academy of Sciences, I am writing to express my deep concern over the proposal to eliminate the Department of Earth and Atmospheric Sciences at UNL. Earth and atmospheric sciences are absolutely critical at this time of rapid planetary change, and it would be short-sighted indeed for a state institution to abandon their investments and current national stature in this area.

Scientific questions about the planet's changing and interconnected systems requires robust teaching and research programs that create new knowledge and teach students about real-world challenges and solutions. UNL Department of Earth and Atmospheric Sciences has a long history of leading fundamental research on vital topics of water resources, climate change and natural disasters, mineral and energy resources, sediment transport, and carbon sequestration. Through the years, the Department has worked with state and federal agencies to provide information about the region's geology, water, weather, and climate in a timely and responsible manner. The excellent degree programs in the Department include both field, lab, and computational experiences necessary to equip the next generation of Earth Scientists with the skills needed to meet real-world challenges. The graduates I've known have made significant contributions in academia, government, and industry.

The UNL Department has been a leader in the integration of physical and atmospheric sciences, and this merger of disciplines has uniquely positioned them for diverse funding initiatives. It is notable that one of the faculty was recently recognized by election to the National Academy of Sciences. The Department should be applauded for its interdisciplinary excellence and upscaled with new investment, not dismantled.

At a time when the country faces an accelerating need for physical and atmospheric sciences, I urge UNL to recognize the important role that the Department of Earth and Atmospheric Sciences continues to play at a regional, national, and international level.

Sincerely yours,

Cathy Whitlock
Regents Professor Emerita of Earth Sciences
Fellow, Montana Institute on Ecosystems

226 Traphagen Hall
P.O. Box 173480
Bozeman, MT 59717-3480
www.montana.edu/wwes

Tel 406-994-3331
Fax 406-994-6923
Email earth@montana.edu

10.3.6 Letters from Nebraska Science Teachers or Related

A. Bryan High School, Omaha – Katie Miller-Krivanek
B. Boys Town Education Center, Science Dept. Chair - Jolyne Zigler
C. Lincoln Northwest High School – Anton Olbricht
D. Millard Public Schools, Russell Middle School – Amanda Taylor
E. Betsy Barent, Curriculum Specialist for Science, Lincoln Public Schools

September 28, 2025

Dear UNL Academic Planning Committee,

I am a science teacher at Bryan High School in Omaha, and I am a current Ph.D. student in the UNL Noyce Master Teaching Fellows program in the Department of Teaching, Learning, and Teacher Education. While the NU system budget cuts certainly pose challenges, the proposal to terminate the Department of Earth & Atmospheric Sciences will directly harm Nebraska's economy and K-12 science education.

According to the 2021 report, "Vision and Change in the Geosciences," a substantial portion of the geoscience workforce will retire in the near future and we will face shortages of geoscientists. Nebraska requires geoscientists for future economic projects, including those in renewable energy, geohazard mitigation, hydrogeology, and land management. Additionally, the meteorology-climatology degree is the only pathway in Nebraska for students to gain employment by the National Weather Service. For geoscience students to remain in Nebraska, we must retain a robust Department of Earth & Atmospheric Sciences and associated degree programs.

However, student interest in earth and atmospheric sciences does not begin in post-secondary education. All Nebraskan K-12 students must receive a rigorous science education to be college and career-ready, and this includes an understanding of earth sciences. Without the longstanding partnerships between the Department of Earth & Atmospheric Sciences and science teachers, many K-12 educators, including myself, would be unaware of how essential earth science is in the scope of science education. The professional development I receive from this department has revolutionized my teaching practices and views of geosciences.

Since 2004, the geology field course led by Dr. David Harwood and Dr. Mindi Searls has impacted over 230 teachers. As a participant in June 2023, I gained a new perspective on teaching using inquiry-based methods and the importance of questioning, modeling, and constructing explanations in science education. In my own classroom, I have observed significant improvements in student engagement and learning as a result of this professional development.

Additionally, Dr. David Harwood and Dr. Mindi Searls's partnership with the UNL Noyce Master Teaching Fellows (MTF) program has a profound impact on K-12 science education in Nebraska. As part of the UNL Noyce MTF program, I completed Dr. Harwood's geoscience pedagogy course on effective use of online resources in Earth science education in the spring of 2025. Through this course, I came to understand how essential understanding earth sciences is for Nebraskan students. If students are to understand the impacts of geological hazards and climate change on their lives, they must learn how Earth's systems are interrelated.

Frequently, Nebraskan students receive a weak earth science education, as there are not many teachers with expertise in this discipline. Over the last two years, I participated as a master teacher leader in Dr. Mindi Searl's *Connecting and Expanding the Nebraska Geoscience Teacher Network* (GeoNET) project. The goal of this project is to create a network of science teachers across the state that support each other in integrating earth science education into their science disciplines. Through this program, more than 30 Nebraskan science teachers will have the opportunity to integrate earth science phenomena into the science curriculum with the support of colleagues and geoscience experts.

The Department of Earth & Atmospheric Sciences is vital to Nebraska's future. Its programs directly support K-12 science education and ensure workforce readiness for critical economic sectors. Eliminating this department would jeopardize Nebraska's preparedness for severe weather and sustainable growth. I strongly urge the UNL Academic Planning Committee to retain the Department of Earth & Atmospheric Sciences to protect our state's future.

Sincerely,

Kathryn Miller-Krivanek

Kathryn Miller-Krivanek
Kathryn.millerkrivanek@ops.org

Jolyne Zigler
12804 Eagle Run Drive
Omaha, NE 68164
jzigler2@unl.edu
10/01/2025

UNL Academic Planning Committee
University of Nebraska–Lincoln

Dear Members of the Academic Planning Committee,

I am writing to express my deep concern about the proposed elimination of the Department of Earth & Atmospheric Sciences (EAS) at the University of Nebraska–Lincoln. As an educator, UNL graduate student, and participant in professional development opportunities led by EAS faculty, I can attest to the critical role this department has played in strengthening science education across the state and beyond.

One of the most impactful experiences of my teaching career was participating in the geology field study course led by EAS faculty Dr. David Harwood and Dr. Mindi Searls. This experience was life-changing because I not only gained first-hand knowledge of the geological history, but I also brought that excitement and relevance back into my classroom, where students could see science as a dynamic process rather than static facts. Had I experienced this field study as an undergraduate, I would have chosen geology as my primary field of study.

Additionally, the GeoNet teacher mentor program is providing me with invaluable opportunities to mentor other teachers and a connection to a valuable professional learning community. Through GeoNet, I built confidence in weaving geoscience phenomena into chemistry, physical science, and biology lessons, and I was able to mentor other teachers in making science more integrated and relevant to students' lives.

In addition to field-based learning and mentoring, I have also significantly benefited from the innovative online coursework offered through the EAS department. These courses challenged me to use Earth science phenomena as anchors for teaching concepts in integrated physics and physical science. By creating presentations, discussion board responses, and Packback entries on topics such as the Ice Age Floods, the ocean conveyor belt, and Zealandia, I was able to expand my knowledge and share with students how different sciences connect to explain real-world issues, which made my teaching more engaging and my students more curious. This integrated approach not only enriched my pedagogy but also provided practical strategies for aligning instruction with the Next Generation Science Standards (NGSS) and improving science literacy for all learners.

These programs, along with the department's long-standing commitment to professional development, demonstrate how EAS has directly elevated teaching and learning in Nebraska. Since 2004, over 230 teachers have benefited from their summer field courses, and countless

more have been reached through initiatives like the Noyce Program and GeoNet. Potentially the most critical consideration is the unique status of the EAS program concerning K-12 science teachers in Nebraska. It is the only program in the state that offers degrees at any level in Meteorology/Climatology and the only program that provides graduate degrees in Geology. If eliminated, Nebraska would no longer be able to certify professionals and teachers in these fields without requiring them to undergo training outside the state. This would create barriers for future educators and scientists, weaken our ability to cultivate local expertise, and risk a long-term shortage of qualified teachers in Earth and Space Science. In an agricultural state so dependent on understanding weather, climate, water, and natural resources, losing this program would be both irresponsible and short-sighted.

EAS also fulfills a broader mission vital to Nebraska's future. The department's research and education in geology, meteorology, and climatology provide critical expertise in areas that directly impact our state's wellbeing—groundwater, drought, severe storms, climate change, and natural hazards. As an agricultural state deeply dependent on understanding and managing natural resources, Nebraska cannot afford to lose this expertise.

As an educator, I also see firsthand that students want to understand the challenges facing our planet and to be part of the solutions. Removing the EAS program would take away an essential pathway for Nebraska students to learn from experts who can prepare them to address climate, weather, and resource challenges in meaningful ways.

I strongly urge you to reconsider the proposal to eliminate the Department of Earth & Atmospheric Sciences. The department not only advances research but also invests in teachers, students, and the future of Nebraska. It would be short-sighted and damaging to cut a program that is so foundational to both education and our state's environmental resilience.

Thank you for considering my perspective and for your service on this critical committee.

Sincerely,
Jolyne Zigler
Science Teacher and Department Chair
Boys Town Education Center

Anton Olbricht
Science Teacher, Lincoln Northwest High School
Lincoln Public Schools, Lincoln, NE
October 4, 2025

To the UNL Academic Planning Committee (APC),

I am writing to express my unequivocal support for the continued—and fully funded—operation of the Department of Earth and Atmospheric Sciences at the University of Nebraska–Lincoln (UNL). As a science educator whose own professional path was profoundly shaped by the geosciences, I can attest to the essential role this department plays in fostering scientific literacy, preparing the next generation of scientists and geoscience educators, and advancing our collective understanding of the planet we depend on.

During my own academic journey, the courses, fieldwork, and mentorship I experienced through UNL's Earth and Atmospheric Sciences program laid the foundation for how I teach science today. Creating a field notebook while hiking the cliffs of Wildcat Hills in western Nebraska helped me learn to differentiate learning for all of my students. Creating stratigraphic columns, culminating in my final assessment, taught me more about using formative assessment to build to summative assessments. Working in a team over a two-week period, sharing a van also improved my leadership and cooperative skills. Concepts like systems thinking, data interpretation, and evidence-based reasoning—core to the geosciences—now underpin my classroom instruction. My students learn not only how the geologic history of Nebraska influences the agricultural productivity that fuels our state economy, or why groundwater resources (and the litigation that protects it) matter, but also how to think critically about human impact and resilience in the face of environmental change.

The reach of UNL's Earth and Atmospheric Sciences department extends far beyond the university itself. Its research informs local and regional decision-making on agriculture, climate adaptation, and water management—issues that directly affect every Nebraskan. Its graduates become educators, researchers, and public servants who strengthen our state's scientific and civic capacity. Reducing or eliminating funding for this department would not only diminish a vital academic program but would also undercut Nebraska's long-term investment in sustainability, innovation, and education.

As an educator, I see firsthand how exposure to the Earth sciences inspires curiosity and responsibility in young people. They begin to view their communities through a scientific lens—connecting soil to food systems, weather to safety, and human choices to global outcomes. That inspiration starts in programs like the one at UNL, where research, outreach, and teaching intersect to empower future leaders.

For these reasons, I urge the University of Nebraska administration and state decision-makers to retain and strengthen funding for the Department of Earth and Atmospheric Sciences. Supporting this department is not just an investment in academic excellence; it is an investment in Nebraska's future resilience, workforce, and stewardship of the environment.

Academically,
Anton Olbricht, BS, MA, and proud UNL Alum
Science Teacher, Lincoln, NE
Email: abolbricht@gmail.com
aolbric@lps.org
Phone: (308) 383-4334

Millard Public Schools | Where Opportunity Ignites Excellence

Russell STEM Middle School · 5304 S. 172nd Ave. · Omaha, NE 68135 · (402) 715-8500 · Fax (402) 715-8368

To the Academic Planning Committee at the University of Nebraska-Lincoln,

In 1994, my brother, Nick Wiltgen, began his collegiate career at the University of Nebraska-Lincoln to become a meteorologist and journalist. For a Nebraska-raised boy, who began his weather broadcasting in our basement in South Sioux City, the Meteorology program at UNL jump started a career that ended as a Senior, Digital Meteorologist at the Weather Channel by the time of his death in 2016. At his memorial service, Jim Cantore described him as a "weather geek of the highest order."

Nick's interest in weather began at an age around those of my students in Millard. Since 2022, Dr. Adam Houston and his graduate students have visited my district's six middle schools. During these visits, high-ability learners have the chance to extend their knowledge of oceans, atmosphere, and climate by touring weather radar trucks and engaging in a lesson on radar patterns indicating severe weather. Our sixth grade students delight at the images the weather radar projects, and many inquire about the ways this work impacts them on severe weather days, especially since severe weather impacted areas in and around our school district of late. In the last three years, this outreach has engaged around 340 students. Additionally, Russell Middle School in Millard is now a STEM middle school, and once again, the Meteorology program at UNL has provided an experience for 8th grade students to understand the use of weather drones in collecting important data at certain levels in the atmosphere.

Each year, we celebrate the "weather geeks" with the Nick Wiltgen Memorial Scholarship, and as a public educator, I can tell you there are more Nick Wiltgen's in the state ready to pursue this career field. In fact, one of my seventh grade students eagerly awaits the next weather seminar to explore his passion. I would hate for our state to miss the chance to tap into this resource and enrich the lives of local students like my brother.

Sincerely,

Amanda Taylor

Russell Middle School
High-Ability Learner Facilitator/Literacy Coach

October 5, 2025

Subject: Support of Earth and Atmospheric Sciences

UNL Academic Planning Committee
135 Alexander Building
Lincoln, NE 68588

Dear Members of the UNL Academic Planning Committee:

I write with deep concern and strong conviction to urge you to reconsider the proposed termination of the Department of Earth and Atmospheric Sciences. This department has long been a cornerstone of science education in Nebraska, providing essential preparation and support for science teachers across the state. Its elimination would have far-reaching negative consequences for both educators and students, ultimately weakening Nebraska's capacity to prepare young people for the scientific challenges that lie ahead.

The UNL Department of Earth and Atmospheric Sciences is one of the few programs in the state authorized to certify teachers in Earth and Space Sciences—disciplines that comprise nearly one-third of Nebraska's College and Career Ready Standards for Science. Our students' understanding of Earth and Space Science concepts is critical as they grapple with issues related to climate, water resources, and sustainability—topics that directly affect our agricultural economy and the well-being of our communities. Without this program, Nebraska risks losing the expertise necessary to equip teachers, and therefore students, with the knowledge and problem-solving skills these global and local issues demand.

Moreover, the impact extends beyond Earth and Space Science. Concepts from the Earth and Atmospheric Sciences are deeply integrated into Biology, Chemistry, and Physics instruction. Many of the crosscutting phenomena and design challenges used to engage students in these subjects rely on a geoscience perspective. Programs like Dr. Harwood's work with the Noyce Program and the NSF-funded GeoNET initiative exemplify the department's leadership in helping teachers meaningfully connect geoscience with other scientific disciplines. Eliminating this department would undermine such interdisciplinary innovation that benefits students statewide.

For these reasons, I respectfully and urgently ask the committee to reconsider this decision. Preserving the Department of Earth and Atmospheric Sciences is not only an investment in Nebraska's educational system, but also in the scientific literacy, problem-solving capacity, and future prosperity of our state.

With sincere appreciation for your consideration,

Betsy Barent
Past President-NATS
Past Region E Director-NSELA
(402) 770-9506, betsylynn71@gmail.com

10.3.7 Letters from Employers of EAS Graduates

A. Dept. Of the Air Force, Offutt AFB, 16 WS Chief of Science and Services - Evan Kucera
B. KLKN News, Lincoln, Chief Meteorologist – Rusty Dawkins
C. U.S. Army Corps of Engineers, Chief of Geology and District Geologist – Jason Wagner
D. Great Plains Energy, Lincoln, President – Dan Blankenau
E. National Weather Service Central Region, Deputy Chief – Jennifer Pittman
F. Lower Elkhorn Natural Resources District, General Manager - Brian Bruckner

DEPARTMENT OF THE AIR FORCE
557TH WEATHER WING (ACC)
101 NELSON DRIVE
OFFUTT AFB, NE 68113

27 September 2025

To Whom It May Concern,

I am writing to provide information about the impact graduates of the University of Nebraska-Lincoln (UNL) Earth and Atmospheric Sciences (EAS) program have had on national security via their work in the 16th Weather Squadron (16 WS) at Offutt Air Force Base near Omaha.

16 WS is unique in the Air Force as the only 24/7 provider of automated environmental information generated by numerical weather models and mission-tailored algorithms. This information serves over 20K decision makers with 200M information products and 200 TB of data annually to protect and exploit $87 billion dollars of weather-sensitive mission assets and property annually. 16 WS supports not only the Air Force but also the Army, the Intelligence Community, the Navy, The White House, the Department of State, and foreign partners like NATO. 16 WS also rapidly adapts its capabilities in response to urgent national security needs and to ensure information advantage over adversaries, as evidenced by over 400 operational software implementations in the past year.

The numerical modeling mission in 16 WS is highly complex, requiring advanced scientific understanding in addition to the ability to develop software, work with supercomputing, adapt to rapidly changing technology and cyber security constraints, and communicate effectively with collaborators and mission partners. Only personnel with the highest levels of knowledge, skills, and abilities can execute this fast-paced mission successfully, and few candidates are available when positions come open due to the substantial competition for these talents across other industries.

The availability of well-educated graduates of UNL EAS has been vital to successful mission execution in 16 WS for over 20 years. Currently 4 of 15 civilian leaders in 16 WS are EAS graduates:

- Chief of Science and Services
- Chief of Stakeholder Engagement
- Technical Lead for Scientific Capability Integration
- Co-Lead of Tailored Modeling Operations

This is the highest proportion in leadership for any university in the unit. Additionally, the current Commander of the 1st Weather Group at Offutt is also a graduate of the UNL EAS program, further evidence of the leadership that EAS has helped produce that is steering this national security mission based in Nebraska.

As warfare becomes increasingly information-centric and adversaries challenge advantages that we have recently taken for granted, the need for a workforce that can continue to execute and enhance the 16 WS mission is vital to the future security of our nation. For many years a successful pipeline of talent has been established from UNL EAS to 16 WS and eliminating the EAS program risks substantial harm to the long-term future of environmental information advantage for the United States.

I am happy to be contacted for more information at evan.kuchera@us.af.mil.
Sincerely,
Evan Kuchera
16 WS Chief of Science and Services

KLKN-TV
3240 S. 10th ST
LINCOLN, NE 68502
WWW.KLKNTV.COM

Rusty Dawkins
Chief Meteorologist, KLKN-TV
rdawkins@klkntv.com

September 30, 2025

To Whom It May Concern,

I am writing to express my enthusiastic support for the outstanding graduates from the University of Nebraska-Lincoln Earth and Atmospheric Sciences program, particularly as they serve in roles across the media landscape throughout the State of Nebraska. Their specialized training, scientific rigor, and commitment to public service make them exceptionally valuable employees, particularly when compared to the broader, more general applicant pool.

Graduates from this program bring a unique blend of technical expertise and practical communication skills that are critically important in television broadcasting, especially when it comes to weather reporting and science communication. Unlike general communications or journalism graduates, our alumni are grounded in meteorology and climatology, enabling them to interpret complex atmospheric data and communicate life-saving information clearly and accurately to the public. This is especially vital in a state like Nebraska, where weather events, from severe thunderstorms and tornadoes to winter storms and drought, have a direct and substantial impact on public safety, agriculture, infrastructure, and daily life.

What further sets our alumni apart is their deep familiarity with Nebraska's regional climate and weather patterns. Their localized knowledge enables them to offer context-sensitive forecasts and risk assessments that out-of-state professionals may miss. Their educational background includes not only theoretical knowledge but also practical experience through forecasting labs, fieldwork, and collaboration with emergency management agencies, skills that translate directly into high-value performance on air and behind the scenes. They are not just communicators, they are trusted sources of information, able to explain not just *what* is happening, but *why* it matters.

For any television station or public agency operating in Nebraska, hiring UNL Earth and Atmospheric Science graduates is not just a smart decision, it is an investment in public trust, regional expertise, and scientific excellence.

Sincerely,
Rusty Dawkins
Chief Meteorologist, KLKN-TV
Lincoln, NE

Jason Wagner

Chief of Geology and District Geologist

U.S Army Corps of Engineers-Omaha District

Omaha, NE

26 September 2025

Earth and Atmospheric Sciences Department
University of Nebraska–Lincoln

Dear EAS Faculty,

I am writing to express my staunch support for the Earth and Atmospheric Sciences (EAS) Department at UNL and my concern about its proposed elimination.

The EAS program at UNL is the largest most comprehensive geology program in Nebraska. The Department produces highly trained professionals who serve communities across the state and region. The EAS program at UNL provides highly trained geologists to the workforce in Nebraska and across the country.

I supervise a group of 30 Geologists, Geophysicists, and Drillers in the Omaha District office of the US Army Corps of Engineers. Currently, I employ four Geologists from the EAS department. Having that local availability of professionally qualified candidates is critical in being able to sustain a consistent workforce. My group is responsible for geotechnical and geological investigations for our dams, levees, and military installations within the region and across the country.

Geologists in the Corps of Engineers need to have a vast array of geological experiences and knowledge and the EAS department at UNL provides students with that experience. The department emphasizes hands on learning that incorporates field trips, field camp, and knowledge from a vast complement of highly qualified professors from all across the world.

I graduated from the Geology (EAS) Department with Bachelor of Science Degree in Geology in 1997. While going to school at UNL I took as many classes as I could, and I went on every Geology Field trip I could. Many of these trips and the Geology Field Camp were provided by the Department or funded by Alumni of the department. Those experiences were critical in my education, my success in Graduate school and later at my job with the

U.S. Army Corps of Engineers. After UNL, I received my Masters in Geology at the University of Idaho and immediately got a job with the Corps of Engineers. For the first six years of my employment with the Corps, I travelled the country with our drill crews. I attribute my success working in the field and getting to where I am today to my education and experiences at the UNL EAS department.

My experiences traveling on field trips and at field camp included measuring sections, mapping outcrops, and being exposed to a significant amount of the country s geology. This helped prepare me for the workforce. I have worked for the Corps of Engineers for 24 years. I m currently in the position to hire Geologists, Geophysicist and Drillers. Having a local program like EAS is a great advantage. Hiring, especially in the government is difficult. We do not necessarily pay as much as the private sector and Omaha is not exactly the location everyone wants to come too. The EAS department gives me a local option that can make a difference.

I m also on the EAS Alumni Advisory Board and have been on the board since 2013. Again, I have found that connection to the department and Alumni can be a critical tool in getting the word out when I need new hires. Those connections have helped me hire some EAS alumni in the last 5 years.

Eliminating the EAS department would cause harm to Nebraska s ability to supply the workforce with highly trained Geologists and Geophysicists at a critical time in this juncture. Nationwide, there is a shortage of qualified Geologists. As our infrastructure gets older, the need for more surface and subsurface geological, geotechnical, and environmental work will be needed. The ability to hire qualified Geologists will become critical here in Nebraska and nationwide.

Sincerely,

Jason Wagner P.G.

US Army Corps of Engineers and EAS Alum

GREAT PLAINS ENERGY

Clinton Rowe
Professor & Chair
University of Nebraska–Lincoln
Earth and Atmospheric Sciences
Lincoln, NE

September 29, 2025

Clint,

I felt compelled to write this letter when I heard that there was consideration by the Academic Planning Committee at UNL to eliminate the Earth and Atmospheric Sciences Department. Once I moved past my initial astonishment at the notion, I began to contemplate my concerns as an employer of Geologist. I have hired and continue to hire professional geologists and interns from UNL's department and am always impressed with and appreciative of their knowledge and abilities they obtain through your excellent program.

As a geology alumnus nearing the end of my career I reflect often, fondly,and gratefully for my Geology education at UNL.

I have been involved in oil production, water resources, environmental and geotechnical projects in Nebraska for over 35 years. More recently I have participated in carbon sequestration and helium exploration projects in our state. I've also been in communications with individuals from outside the state looking for hydrogen in Nebraska. Geology is obviously very important in Nebraska. It is my understanding that UNL is a flagship institution in the University system. To maintain this status isn't it imperative UNL has a fully functioning Geology and Geography Department?

I am not familiar with the committee's process; however, if the Academic Planning Committee would benefit from hearing comments or testimony from those of us practicing Geology in Nebraska, I would be happy to speak with anyone. Please let me know if there is anything I can do to assist or anyone I should contact to share my concerns outside the department. Thank you for what you do for the University and our students!

Regards

Dan Blankenau
President
Great Plains Energy, Inc.
6121 South 58th Street, Ste. "B"

Delivered via email

Good evening,

I'm writing to you both as an alum of the EAS program, and also a hiring official in the National Weather Service. The University of Nebraska's Atmospheric Science program is highly regarded in the research and operational meteorology community, and its elimination would be an incredible loss in our field. I understand that graduation rate is one of the factors that went into the selection of potential programs to be eliminated. Atmospheric Science is an incredibly difficult field of study, and many weather enthusiasts who declare the major are unprepared for the rigor of the coursework. However, the students who successfully complete their degree are highly intelligent, highly motivated, well rounded, and well prepared for their future in Atmospheric Science/Meteorology. I would encourage you to research other highly-regarded universities' graduation rates in equivalent programs, as they are likely similar or lower. Over the next several years, the National Weather Service will need to fill hundreds of meteorologist positions tasked with the protection of life and property, and UNL grads are highly sought for these very competitive and very important positions.

As the Deputy Chief of the Science & Technology Integration Division at the National Weather Service's Central Region Headquarters, I am responsible for the transfer of new and emerging research into National Weather Service products and services, and for bringing relevant research findings into training initiatives. Field projects like TORUS and VORTEX-2, of which Dr. Adam Houston was a lead Principal Investigator, are revolutionizing the way we understand tornado formation and behavior. Findings from these studies have been and are still being used to improve Severe Thunderstorm and Tornado Warning decision-making, and to improve communication with key decision-makers in public safety and emergency management departments. These field projects -- especially TORUS -- have also provided quite a bit of publicity and notoriety for the University, as video from the project has been used in the University's own commercials, and in social media posts shared around the globe. Additionally, professors in the Atmospheric Science department frequently interact with our National Weather Service meteorologists during seasonal symposia and other training sessions, and are highly regarded for their knowledge and research.

Please reconsider the future of the EAS program. I transferred into this program as a sophomore (from Iowa State) because of its reputation and its professor-student ratio, and chose it again over three other offers for Graduate School because of its faculty and research. I have always wanted to study meteorology, and I know with certainty there are children in Nebraska now, affected by the Lincoln-Elkhorn tornadoes of 2024, who will find the same passion. They should be able to stay in their home state and pursue their passion for service and life safety.

If there is any additional information I can provide, please reach out at any time.
Sincerely,

Jennifer M. Pittman, Deputy Chief
National Weather Service Central Region
Science & Technology Integration Division
UNL EAS Alum 2007 (B.S.) and 2010 (M.S.)
(jenni.pittman@noaa.gov; 402-613-8633)

LOWER ELKHORN
Natural Resources District

1508 Square Turn Blvd.
Norfolk, NE 68701

402.371.7313
FAX 402.371.0653
www.lenrd.org

October 8, 2025

Dear Academic Planning Committee,

I write on behalf of the Lower Elkhorn Natural Resources District, a local subdivision of state government that manages natural resources in all or part of 15 counties in Northeast Nebraska, asking you to reject the recent recommendation to cut the Department of Earth and Atmospheric Sciences from the University of Nebraska-Lincoln.

A solid knowledge base in earth and atmospheric science is fundamental to understanding the earth and earth processes, both chemical and physical, and understanding earth processes is fundamental to natural resources management. These are inseparable.

The UNL Earth and Atmospheric Sciences Department is the primary source of training for talented young Nebraskans to research, analyze, and publish graduate level work that is relevant to the natural resources of Nebraska, and this body of work represents primary source material for providing the knowledge base and the various perspectives necessary for NRD staff and directors to make policy decisions informed by the best local analyses possible. If we eliminate the department and effectively outsource this function to surrounding states' universities, we risk diminishing the applicability of the research to Nebraska's unique regulatory framework that places Natural Resources Districts at the forefront of natural resources policymaking.

Additionally, graduates of the Earth and Atmospheric Science Department provide a knowledge base from which future policy makers for Nebraska will be drawn, and if we must draw entirely upon the talent pools of other states, we will either spend extra time and resources to integrate foreign talent with local institutional knowledge, or be forced to adopt the practices and norms learned in other parts of the country. A local talent pool would not require a similar investment of time and resources to integrate into the unique Nebraska regulatory framework and would continue to serve as a solid means to preserve the economy and culture of Nebraska.

Thank you for your dedication to Nebraska education and your consideration of these thoughts.

Respectfully submitted,

Brian Bruckner

Brian Bruckner
General Manager, Lower Elkhorn Natural Resources District

10.3.8 Letters from EAS Alumni

A. Ben Wolfe, Dean, College of Applied & Prof. Studies, Kansas State Univ. Olathe
B. Brian Nicklen, Geosci Manager, Groupment Berkine, Algeria, Occidental Petroleum
C. Hebah Alkhasoneh, Asst. Professor of Meteorology & Climatology, Univ. of Jordan
D. Emily Campbell, Martin Marietta Materials, Omaha & NioCorp Development- Elk Creek
E. Kelly G. Nash, Professional Geologist, Retired, Dallas, B.S. geology 1970, M.S. 1978
F. W.B. Walker, Jr., President & Geologist, Walker Corporation, B.S. 1965, M.S. 1967
G. Ron Hosek, Former Member, Indiana Board Licensure for Prof. Geologists, M.S. ‘75
H. Brian Beck, Program Manager, NOAA Coral Reef Conservation Program
I. Denise Kulhanek, Professor, Institute of Geosciences, Kiel University, Germany
J. Steve Bohaty, Managing Director, Inst. of Earth Sci., Heidelberg Univ., Germany

KANSAS STATE UNIVERSITY | Olathe

Academic Planning Committee
University of Nebraska-Lincoln
135 Alexander Building
Lincoln, NE 68588-0471
September 29, 2025

Subject: Letter of Support for the UNL Department of Earth and Atmospheric Sciences

Dear members of the Academic Planning Committee,

As a proud alumnus of the University of Nebraska–Lincoln (UNL), having earned my B.S. in Geology in 1999, I write in strong support of the Department of Earth and Atmospheric Sciences. The program was foundational to my academic and professional career. It prepared me exceptionally well for graduate school, gave me the scientific grounding to work successfully as a project geologist in the environmental science industry, and ultimately positioned me to serve as a faculty member teaching geoscience at Metropolitan Community College in Kansas City and later in the Environmental Studies program at the University of Kansas. Today, in my current role as a Dean at Kansas State University and Chief Executive Officer of the Kansas State Olathe Innovation Campus, I continue to draw upon the training and perspective I first gained at UNL.

I understand firsthand the budgetary challenges that institutions face, and the difficult decisions leaders must make when confronted with low-enrollment programs. In my own administrative role, I too have had to make tough decisions related to program discontinuance. In each case, however, I have asked two central questions: (1) What will best serve students? and (2) how will our decisions ensure continued access to a quality education in the affected field? In this situation, rather than closing the department entirely, I would advocate for exploring alternatives such as merging Earth and Atmospheric Sciences with Environmental Studies or the Institute of Agriculture and Natural Resources. These units already engage in related teaching and research, and a more integrated model could strengthen the visibility of earth and atmospheric sciences boosting enrollment while reducing costs. I am confident UNL can identify a path that preserves a strong, robust avenue for students to pursue earth science and atmospheric science education.

Geology and atmospheric sciences are not only about producing future specialists; they are foundational sciences that serve the broader student body. These disciplines provide high-quality natural science general education courses that thousands of students rely upon to complete their degrees, while also preparing K–12 educators who will carry earth science literacy into classrooms across Nebraska and beyond. Removing access to these fields would have ripple effects well beyond majors, limiting both scientific literacy and the state's ability to prepare the next generation of science teachers.

KANSAS STATE UNIVERSITY | Olathe

Equally important, Earth and Atmospheric Sciences are central to addressing Nebraska's most urgent challenges. Faculty and students in these disciplines advance research and teaching directly tied to energy resources, water availability and quality, soil systems, landscape processes, climate change, drought, and natural disasters. These issues affect Nebraska's economy, agriculture, and communities every day. Eliminating this program risks weakening the state's ability to respond to these grand challenges, at precisely the moment when the need for geoscience expertise is greatest.

Furthermore, as a land-grant university with R1 status and membership in the Big Ten Conference, UNL is an institution where one would expect to find programs in geoscience and meteorology. Beyond their practical importance, these fields represent a storied part of Nebraska's academic and scientific identity. The state is world-renowned for its Cenozoic fossil record and for producing some of the most respected paleontologists in the field, including Drs. Robert Hunt, Mike Voorhies, Erwin H. Barbour, and Morris Skinner. It was the pioneering research and fieldwork of UNL geoscience faculty that uncovered, documented, and ultimately placed Nebraska's fossils in the world's leading natural history museums. Today, specimens from Nebraska are prominently displayed at the Field Museum of Natural History in Chicago, the Smithsonian National Museum of Natural History in Washington, D.C., the American Museum of Natural History in New York City, and the Natural History Museum in London, among others. The global visibility of these collections underscores Nebraska's unmatched contribution to the understanding of earth history made possible through the scholarship of UNL geoscience faculty.

For these reasons, I strongly urge reconsideration of the proposed elimination of the Department of Earth and Atmospheric Sciences. The program's contributions to scientific knowledge, higher education, and Nebraska's reputation in the geosciences are too significant to lose. Most importantly, Nebraska students deserve continued access to these opportunities at their flagship university, where they can learn, discover, and contribute to the state's proud legacy in the earth and atmospheric sciences.

Sincerely,

Ben Wolfe, Ph.D.
Dean, College of Applied and Professional Studies
Kansas State University

September 26, 2025

Dear Academic Planning Committee:

A native of Omaha, I graduated from the Department of Earth and Atmospheric Sciences (EAS) at the University of Nebraska-Lincoln (UNL) in 2001 with a Bachelor of Science in Geology. While I began my academic career at UNL in another college, I decided to consider changing majors after taking Geology 101 in the spring semester of my freshman year. After speaking with the EAS undergraduate advisor, he invited me on his post-semester field trip to the southwest US. This was the first of many field trips during my time in EAS and solidified my decision to major in geology. After the course, another faculty member who attended the trip asked if I would be interested in a student employment opportunity, working under one of her grant awards. At the beginning of my sophomore year at UNL, mere months after my first interaction with the EAS department, I found myself having visited several classic geologic field locations and working in a research laboratory—experiences that sparked my excitement for hands-on learning and confirmed my decision to pursue a degree in geology.

Another critical point of my EAS experience was being invited to enroll in the E.F. Schramm Course in Economic Geology. This alumni-funded course provides students with the opportunity to take classroom workshops and field courses with academic and industry experts. I was a three-time enrollee, with experiences that spanned snorkeling over carbonate reefs in the Turks and Caicos Islands to viewing ancient deep-water sand deposits in a Californian mine. In addition to the learning opportunities, these courses were great opportunities for an undergraduate to spend time with department faculty and graduate students, learning more about the skills needed to be a successful geologist. As I've moved through graduate school and my professional career, it's become clear how unique the Schramm Course is. Many fellow graduate students and professional colleagues were envious of the experiences I gained in the course as an undergraduate, and the field trips and classroom workshops were consistently highlighted during my interviews for internships and full-time positions in the oil and gas and environmental consulting industries.

In addition to field and classroom learning in EAS, I benefited greatly from participation in faculty and undergraduate research. The research project I conducted on core samples from southeastern Nebraska allowed me to put into practice the knowledge and critical thinking skills that are key to solving scientific and professional problems. I had the opportunity to give my first presentation at an academic conference, and the work I conducted led to a collaborative peer-reviewed publication.

After graduating from UNL, I was well prepared for graduate school, earning my MS and PhD degrees in geology from the University of Cincinnati. I'm currently employed by Oxy, a US-based energy, chemical, and carbon innovation company. As a geoscience manager, I'm involved with staff and projects across our portfolio. EAS provides its students with the learning opportunities and hands-on experience needed to face the challenges that my team and colleagues across the company encounter daily. From hydrocarbon exploration to carbon sequestration, we seek individuals to work challenging projects that will impact the state, country, and world. EAS alumni are providing solutions in these areas and many more. I'm certain this trend will continue. In fact, an EAS graduate student was selected for an internship this past summer to work on one of my company's most important assets.

My experiences as a student in EAS at UNL have been foundational to my academic and professional success. The department's commitment to hands-on learning, research opportunities, and industry engagement continues to prepare graduates for impactful careers. I strongly urge you to recommend the full retention of the Department of Earth and Atmospheric Sciences to Chancellor Bennett.

Sincerely,

Brian L. Nicklen, PhD

BS Geology '01

Hebah Alkhasoneh
Assistant Professor of Meteorology & Climatology
Department of Geography, University of Jordan
Amman, Jordan
DateSep,27th,2025

Academic Planning Committee
University of Nebraska–Lincoln

Dear Members of the Academic Planning Committee,

I am writing to express my strong support for the Department of Earth and Atmospheric Sciences (EAS) and my opposition to the proposed elimination of this department and its associated degree programs.

I am an alumna of EAS, having completed my PhD in Meteorology/Climatology in August 2024. I joined in 2019 on a scholarship from the University of Jordan, the oldest and most prestigious university in my country. I am proud to be the first woman in Jordan to hold a PhD in Atmospheric Sciences, an achievement made possible by the rigorous academic training, mentorship, and opportunities provided by EAS. Today, I serve as an Assistant Professor in the Department of Geography at the University of Jordan, ranked 364 globally (Shanghai 2025).

The EAS Department stands out for its academic uniqueness. It offers the only Atmospheric Science degree program in the state of Nebraska that qualifies graduates for employment with the National Weather Service. Its Geology program is the only pathway for licensure as Professional Geologists, and its MS and PhD programs are the only graduate-level Earth and Atmospheric Science degrees in the state. Such programs are not only unique—they are indispensable.

The scientific impact of EAS is equally impressive. In just the past five years, its faculty have published in Nature, Science, PNAS, and the Bulletin of the American Meteorological Society. Faculty members are nationally recognized, with multiple NSF CAREER awards, membership in the National Academy of Sciences, and prestigious career honors. They have also brought more than $17 million in active externally funded research awards to Nebraska.

EAS also demonstrates leadership in campus-wide environmental science efforts. Faculty have spearheaded major initiatives such as the Nebraska Sandhills book (2025 Nebraska Book Award), the Ice Coring and Education (ICE) Silo project (Grand Challenges planning grant), and the Community Climate Resilience on the Great Plains initiative. These projects highlight EAS as a driving force in interdisciplinary research and public engagement, benefiting both the state and broader scientific community.

EAS is equally committed to student success. Its students have earned NSF Graduate Fellowships, Fulbright awards, and UCARE fellowships. They have won regional

competitions like the Society of Exploration Geophysicists Challenge Bowl. Alumni are employed in critical agencies, including the National Weather Service, the US Army Corps of Engineers, and the Nebraska Department of Water, Energy, and Environment.

In my personal journey, EAS was far more than an academic program—it was where I truly grew into a scientist and found a second home. From my first semester, I felt welcomed by both faculty and graduate students, who created an encouraging, family-like environment that helped me adjust as an international student. The rigorous coursework tied directly to cutting-edge research and weather analysis, while fieldwork experiences connected theory to practice. The department not only trained me but also invested in me: it funded my first international conference presentation at the EGU General Assembly, an experience that launched my global scientific network and gave me the confidence to share my work in climate modeling with the broader community.

EAS also offered me a teaching assistant position, which was a transformative part of my experience. Serving as a TA allowed me to develop teaching skills, interact closely with students, and learn how to translate complex scientific concepts into clear and accessible lessons. This opportunity enriched my academic journey by strengthening my communication and leadership abilities, and it gave me a deeper appreciation for the role of education in advancing science. The experience now directly informs my work as a professor, where I design courses and mentor students in Jordan.

Because of EAS, I returned to Jordan fully equipped to contribute at the highest level. I now design scientific content and curricula for weather and climate classes that strengthen student education and awareness of forecasting and hazards. I collaborate with national institutions to raise awareness about extreme weather and climate threats, and I work with regional scientists to build resilience to future challenges.

My work is particularly critical because Jordan is located in one of the world's most climate-vulnerable regions. The impacts of climate change are already evident and are projected to intensify in the coming decades, with hazards such as flash floods, severe droughts, freezing events, and dust storms becoming more frequent and more destructive. These hazards affect agriculture, water resources, infrastructure, and public safety—areas that are vital to national security and well-being.

In this context, my role extends beyond academia. I collaborate with ministries, local agencies, and private institutions to improve hazard forecasting and early warning systems, and to build strategies for adaptation and resilience. The knowledge, tools, and confidence I developed at EAS—from climate modeling to weather analysis and from teaching to public engagement—enable me to support decision-makers in Jordan as they confront these urgent challenges.

Looking ahead, I plan to collaborate with my university's Physics Department to introduce an Atmospheric Physics course at the bachelor's and master's levels, and to partner with the Geology Department to establish the first Department of Atmospheric Sciences in Jordan. As

part of this effort, I also hope to build collaborative partnerships and student exchange programs with the Department of Earth and Atmospheric Sciences (EAS) itself, modeled on the opportunities and networks I first experienced there. My career path and future goals are direct reflections of the inspiration, preparation, and confidence that EAS gave me.

Eliminating EAS would mean dismantling the only program in Nebraska preparing students for essential roles in weather, climate, geology, water resources, and environmental resilience. It would also silence a department whose scientific contributions and community engagement have drawn national media attention, educated the public through programs like Dinosaurs and Disasters, and advanced global understanding of climate resilience.

The loss of EAS would not only impact UNL but would also resonate far beyond Nebraska, influencing the global scientific community and shaping the opportunities available to future generations of Earth scientists.

Sincerely,

Hebah Alkhasoneh
Assistant Professor of Meteorology & Climatology
Department of Geography
University of Jordan

9/29/2025
Emily Campbell
Emily.campbell26@gmail.com
813-541-2788

To Whom it May Concern,

I am writing to express deep concern over the possible elimination of the Department of Earth and Atmospheric Sciences (EAS) at the University of Nebraska–Lincoln. This department plays a vital role in supporting Nebraska's mining industry, protecting our water resources, and preparing the workforce that sustains our state's economy.

Nebraska's mining sector depends on resources such as sand, gravel, limestone, and clay, which are fundamental to construction, agriculture, and manufacturing. Geologists are essential for locating, evaluating, and responsibly developing these materials. Geologists played an important role for NioCorp Developments to develop their resource estimations for their Elk Creek Project. Without their expertise, Nebraska risks losing economic opportunities, mismanaging resources, or increasing dependence on out-of-state industries.

Having worked in several aspects of mining, exploration, surface mining, and underground mining, I was fully prepared to take on any task thanks to the education I received in the Department of EAS in geology. I am currently employed at one of the largest mining companies in Nebraska, Martin Marietta, along with 3 other EAS geology alumni. In addition to my time at Martin Marietta, I also worked on the Elk Creek Critical Minerals Project for NioCorp Developments in southeast Nebraska. This project would put Nebraska on the map as a critical supplier of Niobium, Scandium, Titanium, and other rare earth elements. When this mine goes into development, it will add numerous jobs to the workforce, including a team of geologists. EAS provides our communities and the state of Nebraska with talented and well-equipped alumni to be productive and active members of our community.

The mining and mineral industries contribute millions of dollars annually to our state and provide countless jobs. Geologists ensure these industries operate efficiently and sustainably while complying with environmental regulations. Just as importantly, Nebraska's reliance on groundwater from the High Plains Aquifer makes geology indispensable for protecting water quality and managing agricultural and industrial use.

The Department of Earth and Atmospheric Sciences trains the next generation of geologists, hydrologists, and environmental scientists. These professionals not only serve

the mining industry but also strengthen agriculture, infrastructure, environmental, and energy development across the state. Eliminating the department would create a workforce shortage, forcing companies to recruit from outside Nebraska and increasing the risk of losing talented young people to other states.

I urge you to preserve and strengthen this department so that Nebraska can continue to lead in responsible resource management, workforce preparation, and scientific innovation.

Sincerely,

Emily Campbell

Bachelor of Science – Geology – UNL 2011
Master of Science – Geology – UNL 2018

Kelly G. Nash,
Professional Geologist (Retired)
Dallas, Texas
September 30, 2025

Academic Planning Committee
University of Nebraska–Lincoln

Dear Members of the Academic Planning Committee,

I am writing to express my support for the Department of Earth and Atmospheric Sciences (EAS) and my strong opposition to the proposed elimination of this unit and its associated degree programs.

I am a 5th-generation Nebraskan and a University of Nebraska - Lincoln (UNL) alumnus (B.S. Geology, 1970 & M.S. Geology, 1978). My first job as a geologist was with the Nebraska Conservation & Survey Division in 1976-1978, working with a team of geochemists researching and mapping groundwater quality in Nebraska (e.g., Spalding, R.F.; Gormy, J.R.; Nash, K.G., 1978 Carbon Contents and Sources in Ground Waters of the Central Platte Region in Nebraska, Journal of Environmental Quality, 7, (3) 428-434.). I am still proud of being able to have a profession that helped people live healthy lives. In 1978, I moved to Dallas for a position as a geologist with the federal Environmental Protection Agency Regional Office. Over the years I was able to work on a variety of environmental projects from the perspective of a regulator, a consultant, and as an industry environmental manager. My UNL degrees provided me with a productive and rewarding career as a professional geologist until my retirement in 2013, and I was able to accumulate savings that allowed me to retire at 65.

Eliminating the Earth & Atmospheric Science (EAS) Department, as proposed, would be a very unwise decision. I will elaborate on this in the following paragraphs. I realize this is a difficult time for the University, that there have been large budget cuts for many years, and that some powerful politicians in the state are anti-education. But I implore the Academic Planning Committee to find another way, rather than the irreversible destruction of an important EAS Department. That a Land Grant University would consider eliminating the study of the land astounds me!

1) I find the proposal to eliminate the Department insulting on a personal level, because it implies that my life over the nearly 60 years since I became a geology major at UNL might have little value to the state. Much more importantly, it says that the Planet Earth, its resources and its atmosphere is not worthy of study in the State of Nebraska. This is of course very foolish and will damage the University and the State if carried through to implementation. In fact, simply announcing the plan to eliminate the EAS Dept., (and other worthy Departments and degree programs) is damaging the University right now. I

am certain that a large number of so-called "high-performing" faculty members are busily sending out their resumes.

2): Why was no consideration given to mergers and collaborations with other Departments? This has been done effectively at UNL and elsewhere. I think there are probably several Departments that might be considered - for example only, the EAS Department could be merged with the Geography Department. Or a Water Resources Department could be created from existing departments. There are all sorts of paths this could take, but I'm not aware of any such considerations with the current budget process at UNL.

3) The decision to pursue separate budget cuts for each campus (I understand UNO will face its blood-letting next year) obscures the fact that there is a significant cost from duplicative administrative expenses for each campus. Instead, a decision has been made to pit academic departments against each other. I understand that red-lining EAS will free up about $1.8 million. The total salary expense for administrators at UNL, UNO & UNK for 2025-2026 is $5.6 million (Source: Personnel Roster @nebraska.edu). Utilities, healthcare and insurance are probably roughly equivalent if not more. Has anyone looked at the real need for 12 Vice and Assistant Vice Chancellors at these three campuses?

4) I have a personal stake in this decision that is in addition to my long career. Last year I offered a substantial collection of mineral & rock specimens I have collected over many years to the State Museum at the University of Nebraska (Morrill Hall). This began with a collection of unique Nebraska specimens and a donation of more than $10,000 (which was matched by a grant from the Hubbard Foundation). This is documented in the Summer issue of "The Mammoth" publication by the museum ("Alumnus Kelly Nash to help bring back Morrill Hall geology exhibit", p. 10). It was my desire that young people might be inspired to pursue a career in Earth Science by interesting and attractive displays in the Geology Section of the museum, and UNL Geology students could access more rare mineral species than are currently available. The museum staff has been supportive of this endeavor, and my plan was to increase my donation in the next years. I plan to support the Museum regardless, but if the Administration eliminates the EAS Department, visitors with children enjoying the world-famous geology and fossil exhibits may need to tell them that they will have to leave the state to pursue their interest.

5) The University and the state government have long lamented the exodus of young people from Nebraska, and this permanent elimination of six vital programs is a good example of acting against a solution. Incoming students in several departments are now forced to look at other options. I hope the Administration will choose wisely.

6) Regarding the quantitative metrics that the EAS and all departments have supposedly undergone - although the Budget Process section on the nebraska.edu

states that "Details about the metrics-based approach is available elsewhere on the website", that is not so. There is no data available to the public such as numerical data for the departments evaluated. The fact that these metrics have not been released indicates to me that the exercise was flawed.

Chancellor Bennett has spoken of a few metrics (e.g., "future demand") that seem semi-quantitative at best. There is, in fact, currently a significant shortage of graduating geoscientists available for vacant positions due to environmental changes, shortages of strategic metals, and retirements in the field.

7) With specific regard to Geology (my field) - is water not the most important resource of the State? Most of it is underground. As geologist, the vast majority of my work involved ground-water quality and quantity, critical resources in Nebraska.

8) Geology is very important to the Engineering Department. The first person I spoke to about this proposal to eliminate the EAS department was a Civil Engineering graduate at UNL. He said, "Civil engineers build bridges and other major structures - we have to know what is under the ground they rest on - and we ask geologists!"

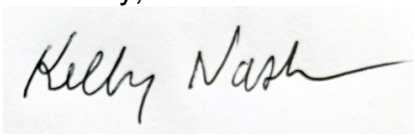
9) Climate and the weather have always been of extreme importance to Nebraskans. Growing up, I witnessed several tornadoes that caused major damage. As I understand it, eliminating the EAS Departments means no more certified Weather Forecasters from Nebraska. The state will have to recruit out-of-state talent to predict and mitigate the increasing problems with the kinds of storms and floods that make Nebraska unique.

10) I mentioned above that shortages of strategic metals are drivers of job growth in the geosciences. I would point out that much of the recent research on what the U.S. Geological Survey has called one of the most important rare earth deposits in the world, and the largest niobium deposit in the U.S. - the Elk Creek Deposit in Gage County, Nebraska, has been carried out by UNL Geology graduate students in conjunction with the Conservation & Survey Division (CSD), which will also suffer from the loss of the EAS Department. As will the State Museum, which employs undergraduate and graduate students, and graduates, to help with curation of the world-famous collection there. The famous first curator of the museum, Professor Erwin Barbour, also taught geology there in 1891. There is a long history of significant scientific achievement and Public Extension linked to the Geology Department and museum research and expeditions which continues to this day, and which should not be cancelled.

11) Chancellor Bennett, on August 4, indicated that philanthropists will be targeted to help make up the shortfall. This is as it should be. My wife (on her own) and myself have contributed a good deal to UNL in the past and the University is a major benefactor in our current will. But as a donor, I must say that when the Administration lops off critical academic programs, it gives us pause about our continuing support.

I wish you well in your deliberations. Please feel free to contact me if you have any questions. I can be reached by telephone at (214) 629-0102, or at the addresses below.

Sincerely,



Kelly Nash, Geologist, (B.S. Geology UNL, 1970, M.S. Geology, UNL 1978)
6327 Vickery Blvd.,
Dallas, TX 75214
kellygnash@gmail.com

W B Walker, Jr.
Walker Corporation
1571 Colt Circle – Castle Rock, Colorado 80109

September 29, 2025

Academic Planning Committee
University of Nebraska – Lincoln

I would like to add my voice in vehement opposition to the proposed elimination of the EAS department and all of its programs. From my standpoint, the mere suggestion of such a plan has already done irreparable damage to EAS, UNL and the university Foundation – thoughtless damage from which it is unlikely to recover for years! Many of us donors have contributed millions of dollars to the department and its programs through the Foundation and otherwise. What is to become of the servicing of these funds and programs in the absence of EAS? Over the years, I personally have brought over $600,000 to EAS and expected it to be used for the department, specifically geology. If this elimination plan proceeds, I will expect a full refund and will seek such. Many others have contributed as much, or more, only to be stabbed in the back by the very university we sought to help! I have been told by university staff that EAS alumni are some of the most generous donors for the university. This is the gratitude they receive.

Having graduated from UNL in 1965 & 1967 with BS and MS degrees in geology, I went on to have a very successful career in the energy industry. My gratitude to the geology department and its staff was so great that I swore that someday I would give back to the department which helped make me so successful. I and many others have donated to aid, upgrade, and improve the department. I would imagine that they are likewise reviewing options for restitution.

The geology department has been a part of this university since its early days, establishing a distinguished record for excellent teaching, work and research. Its graduates have gone on to lead industry and academia worldwide. Some of them have even recently played a role in extending our country's energy independence by 30-50 years!

Such a valuable resource to squander! I would urge this administration to abandon any attempt to eliminate one of the finest aspects of its very being.

Sincerely:

W. B. Walker, Jr.
President/geologist

Ronald J. Hosek
Retired (Former Board Member of the Indiana Board of Licensure for Professional Geologists)
Carmel, Indiana
September 23, 2025

Academic Planning Committee
University of Nebraska–Lincoln

Dear Members of the Academic Planning Committee,

As a 1973 (BS, Geology) and 1975 (MS, Groundwater Geology) graduate of UNL, I am writing to express my unwavering support for the Department of Earth and Atmospheric Sciences (EAS) and my very strong opposition to the proposed elimination of this unit and its associated degree programs.

The EAS Department offers the only Atmospheric Science degree in the state, let alone the University of Nebraska system, that qualifies recipients to work for the National Weather Service. The Geology degree is the only avenue at UNL for students to qualify for licensure as Licensed Professional Geologists. The graduate programs are the only Earth and Atmospheric Science graduate programs in the state.

As a graduate student in the Department in the 1970s, my thesis in groundwater resources was used by the Bureau of Reclamation to assist in securing congressional funding for the construction of the Calamus Reservoir in Central Nebraska. That reservoir has since contributed so much to recreation and the beneficial use for irrigation in that part of the State. Upon graduation, my education in the Department prepared me for a successful and rewarding career in both the petroleum and the environmental industries within the United States.

The EAS Department has a long history of producing exceptional graduates that fill critical jobs in the public and private sectors both in Nebraska and elsewhere. These are the individuals that warn us of impending severe weather, help to secure adequate supplies of clean water and strategic minerals, and identify the energy resources needed now and in the future.

Faculty in the EAS Department have led high-impact research that advances understanding of the Earth system while bringing in high-dollar grants into Nebraska and preparing the next generation of Earth scientists.

I cannot imagine a university of UNL's stature to be devoid of a degree program in the natural resources, which are so integral to the State of Nebraska. I urge you to recommend that the Department of EAS and its programs be maintained and even enhanced in the future.

Sincerely,
Ronald J. Hosek, LPG (IN)

To the members of the Academic Planning Committee,

As a proud 2002 graduate of the University of Nebraska-Lincoln and now a program manager for the NOAA Coral Reef Conservation Program, I am writing to urge you to reconsider the proposed elimination of the Earth and Atmospheric Sciences (EAS) department—the very program that provided the foundation for my entire career. As someone who manages spend plans at a national level I can appreciate the difficult decisions you face, but I would like to offer my opinion on why the EAS department should not be eliminated.

The EAS department's intimate scale is not a weakness but a strategic asset that allows for quality, personalized mentorship. Unlike peers in larger programs, I had meaningful conversations with my advisor about my career path and learned to collaborate effectively in a close-knit cohort —a critical skill that has proven indispensable in my professional life. Studying alongside the same small group of Geology majors for four years taught me how to work effectively with diverse individuals on long-term projects. This ability to adapt and collaborate has been vital to my success in graduate school and at NOAA.

I came to the EAS program with a clear career path in mind, but the department's emphasis on exposing students to a varied mix of opportunities opened my eyes to possibilities I had never considered. My first introduction to coral reef science happened within the department, and that single exposure completely altered my professional trajectory. Without that pivotal moment, I would not have pursued the future studies that led to a career studying reefs from the Galapagos to the Red Sea, and ultimately, to my current role leading national coral reef conservation for NOAA.

The department's emphasis on hands-on learning is what truly sets its graduates apart. The unparalleled field experience received—mine spanned 12 states and the Turks and Caicos —teaches students how to be scientists in the real world. This is not just an academic benefit; it is a direct pipeline to employment. My first boss explicitly stated that the extensive fieldwork on my undergraduate record was a primary factor in my hiring.

Beyond the direct benefits to its students, the EAS department is fundamental to UNL's mission as a land-grant university and is critical to Nebraska's future. Our state's economy is built on agriculture, which is entirely dependent on understanding soil conditions, weather patterns, and water resources—the core disciplines of this department. To eliminate the university's primary capability in Earth and Atmospheric Sciences would be a profound disservice to the farmers, communities, and industries that rely on this essential expertise to thrive.

I appreciate the difficult financial decisions you face. However, cutting the EAS department is a short-term saving that creates a long-term deficit in expertise and opportunity. I urge you to see this department not as a line item to be cut, but as a vital engine of science and a cornerstone of the university's commitment to Nebraska. Please, preserve this essential department and empower it to continue producing the leaders and problem-solvers our state and our world so desperately need.

-Brian Beck-

Dear UNL Academic Planning Committee,

I'm a native Nebraskan and 2-time alumnus of the Earth and Atmospheric Sciences Department (EAS) at UNL, where I received my BS in geology in 1997, followed by my MS in geosciences in 2000. The news that the chancellor recommended eliminating this department left me in disbelief – how is the state of Nebraska going to meet tomorrow's challenges without the capacity to train the next generation in critical areas of the Earth Sciences?

My time in the department at UNL shaped my career and really my entire life. When I started as a freshman at UNL in 1993, I didn't know what I wanted to do. But, because I'd collected so many rocks on childhood vacations to Colorado, I signed up for my first geology class hoping I could learn how to identify them. After that I was hooked, and I changed my major to geology. The department's small size and close-knit community helped me to step out of my comfort zone (I was extremely shy and quiet growing up) and opened my eyes to the wider world. I hadn't really thought seriously of leaving Nebraska, but after receiving my MS, I was offered an internship at BP in Houston, which led to a permanent position. After ~3 years in the petroleum industry, I left BP to pursue my PhD at Florida State University, which I received in 2009. Since then, I've had a post-doc and worked for the Integrated Ocean Drilling Program management office in Japan, I spent 2 years as a micropaleontologist in New Zealand, and then returned to the US as a staff scientist with the International Ocean Discovery Program at Texas A&M University. I was there for 8.5 years, during which time I participated on multiple research cruises, including one to Antarctica, and I worked with scientists from all over the world. In 2021, I became professor of marine micropaleontology at Kiel University in Germany, where I now teach two classes modeled on the classes that my MS advisor, professor emeritus Dr. David Watkins, taught at UNL. Although I no longer live in Nebraska, I bring its legacy with me every time I walk into the classroom or into my lab here in Kiel. I now lead a research group that includes two (soon to be three) post docs, a technician, and numerous graduate and undergraduate students who are conducting research into Earth's past climate – this work is critical to help us better predict how climate will change in the future. I also still closely collaborate with colleagues in EAS. In fact, I am a co-principal investigator along with David Harwood on a very large (>$4M) NSF grant to study how West Antarctica's ice sheet responded to past warm intervals as a window to the future.

Earth and atmospheric sciences encompass so many disciplines – many of which are vital to Nebraskans. Unfortunately, K-12 education in Nebraska rarely includes more than one or two units of Earth science, which means most young people don't even realize that it is an option or what sorts of careers Earth science can lead to. In fact, UNL's EAS is one of the only programs in the state that certifies teachers to teach Earth and space sciences at the K-12 level. Losing this program will significantly impact the number of K-12 teachers who can teach young people about our Earth and the environment.

Furthermore, Nebraska is an agricultural state that depends on groundwater for its drinking water supply. It is incredibly short sighted of the chancellor to recommend

eliminating the only program in the state that offers degrees at any level in meteorology and climatology. Meteorologists help to keep Nebraskans safe during bad weather, and they also provide farmers with crucial information about weather and climate patterns – information that the farmers need to plan their activities. Without this program in Nebraska, young people who want to become meteorologists will have to go to university out-of-state. They will have to pay more expensive tuition, AND it is also more likely that they will not return to Nebraska after graduation.

Geologists study so many different topics and can work in many different sectors of industry and government. Concerned about groundwater recharge or groundwater contamination? Geologists study this! What about all those critical minerals and rare earth elements needed to make our smart phones and electronic devices? Guess what – these are mined and geologists know how they are formed and where to look to find them. Nebraska also offers the opportunity for geothermal heat production, and in the eastern part of the state, there have been two wells drilled in search of natural hydrogen reserves that have shown promising results. With the elimination of EAS, there will quickly be a lack of trained Earth scientists to support the growth of these industries, which will bring good paying jobs to the state if they can get off the ground.

In summary, Nebraska needs meteorologists and geologists! They work in many sectors throughout the state. Losing EAS would mean that students in Nebraska would have to go elsewhere for their training – how many of them would actually return to the state? With Earth's future looking ever gloomier due to inaction by leaders all over the world, it it is even more important for students to learn about Earth and the environment and what we can do to create a better future for all Nebraskans.

Sincerely,

Denise Kulhanek
Professor of Marine Micropaleontology
Institute of Geosciences
Kiel University
Kiel, Germany
UNL Geology / Earth and Atmospheric Sciences alumnus, classes of 1997 and 2000

RUPRECHT-KARLS-
UNIVERSITÄT
HEIDELBERG

Universität Heidelberg
Institut für Geowissenschaften
Im Neuenheimer Feld 234
69120 Heidelberg
Germany

8th October 2025

Academic Planning Committee
University of Nebraska–Lincoln

RE: Proposed elimination of the Department of Earth and Atmospheric Sciences

Dear Members of the Academic Planning Committee,

I am writing to express ardent support for the Department of Earth and Atmospheric Sciences (EAS) and my strong opposition to the proposed elimination of the unit and its associated degree programs. EAS is an essential interdisciplinary science department on the City Campus of the University of Nebraska–Lincoln (UNL), with focused teaching and research activities across many areas of the geosciences. The geosciences are highly interdisciplinary and applied in nature, and the concentration of expertise in EAS therefore ties together many fundamental STEM subjects from across the College of Arts and Sciences (math, chemistry, biology, physics) – thus offering a vital link between these departments on campus. Importantly, the offering of geosciences and meteorology degrees by EAS provides an avenue for students to pursue more applied training in areas that are essential to Nebraska's economy and job market, both now and in the future.

I am currently a university professor at Heidelberg University, Germany, and EAS provided both inspiration and a solid foundation that launched my career in academia. I received both BS (1996) and MS (1999) degrees from the department. In addition to receiving high-quality education in the classroom, I had the opportunity to directly engage with active research from a very early stage in my undergraduate studies. The broad depth of knowledge and skills gained as a result of the combination of coursework, field training, and independent research projects provided me with the means to subsequently go on to more specialized training in PhD and postdoctoral studies, eventually leading to a long career in academia.

Since I am from a small town in Nebraska (Wahoo), I did not have any exposure to the geosciences in high school. I therefore would have not successfully followed a career path in academia without first encountering the geosciences as an undeclared major in the College of Arts and Sciences at UNL. My initial exposure to geology via a general credit class in Arts and Sciences led me to choosing geosciences as my main topic of undergraduate study, and then eventually to extraordinary opportunities to be deeply involved in research as an undergraduate student in the department.

While studying at UNL, I had the opportunity to participate in Antarctic research projects as a field assistant for three years as an undergraduate in the department. These trips involved travelling to Antarctica, working at remote field camps with many international collaborators, and first-hand engagement with polar research. This was a fantastic and formative experience for me as a young scientist. In hindsight, it was also an opportunity to be directly involved in research that I would not have had in any other department in the university, or at any other university for that matter. In the larger perspective, the breadth of intensive field teaching within the department is unique to the university and also, in my view, is an exceptional form of science education – offering a perspective and skills in solving scientific problems large, 3-dimensional scales – a form of experiential training that is really unique to the geosciences.

EAS has evolved since I studied at the University of Nebraska-Lincoln, but maintaining a department with concentrated expertise, research activities, and teaching in the Earth and atmospheric sciences is critical for jobs across all sectors of the economy (e.g., industry, government agencies, academia). Key areas in which EAS specializes, such as hydrogeology, meteorology/weathering forecasting, and hydroclimate modelling, are particularly important to Nebraska and Nebraska's agricultural economy. Additionally, maintaining geological and paleontological expertise within EAS is also is very important for research and training related to the conservation, study, and use of Nebraska's natural geological resources, with a long history of support for and interaction with Nebraska State Museum (and its fossil collections) and the Nebraska Conservation and Survey Division.

A final important point is that many subfields of the geosciences are also currently experiencing rapid growth and there is a growing demand for well-trained geoscientists in these areas across the country, for example in alternative and renewable energy, carbon capture/sequestration, and regional climate modelling. These are areas which UNL should be positioning itself to provide leadership and training as future strategy. Therefore, instead of eliminating EAS, the university should instead provide support to the department now to maintain its footing and then invest in the department down the road when the university's economic situation improves.

In summary, EAS is an indispensable and unique department at the University of Nebraska that provides key interdisciplinary training through its active teaching and research activities in the geosciences. A concentrated home for the geosciences within EAS is therefore extremely important to the university and the State of Nebraska, and I urge you to recommend that the Department of EAS and its programs be maintained.

Sincerely,

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