

PROGRAM and PROCEEDINGS

THE NEBRASKA ACADEMY
OF
SCIENCES
1880-2025



145th Anniversary Year
One Hundred-Thirty-Fifth Annual Meeting

THE NEBRASKA ACADEMY OF SCIENCES, INC.

April 25, 2025
Hybrid Meeting
UNIVERSITY OF NEBRASKA EAST CAMPUS UNION | ONLINE

GENERAL INFORMATION

The Nebraska Academy of Sciences was organized on January 30, 1880. The Academy was reorganized on January 1, 1891 and annual meetings were held thereafter.

AUTHORS ARE INVITED TO SUBMIT MANUSCRIPTS OF THEIR WORK FOR PUBLICATION IN THE *TRANSACTIONS OF THE NEBRASKA ACADEMY OF SCIENCES*, a technical journal published periodically by the Academy for 56 years. Articles in all areas of science, science education, and history of science are welcomed, including results of original research as well as reviews and syntheses of knowledge.

The Transactions is kept on a digital format and is available to anyone through the Digital Commons at the University of Nebraska–Lincoln. Manuscripts should be submitted via the online submission system at <http://digitalcommons.unl.edu/tnas/guidelines.html> using the Submit your paper or article link.

	Nebraska East Union Floor 2	Remote	Remote	Prairie Suite A	Prairie Suite B	Prairie Suite C	Legacy A	Legacy B	Arbor Suite A	Arbor Suite B	Bluestem	Great Plains A	Great Plains B	Great Plains C	Garden Room				
		AERO										BMS							
time	NAS	AERO-A	AERO-B	AST	ANT	SCI EDU/PHY	EAR	EAR	BIO	CHM	INBRE	BMS-A	BMS-B	BMS-C	BMS-D				
7:40	Conference Headquarters, for assistance call Executive Secretary 308-641-9342	set-up	set-up	set-up	set-up	set-up	set-up	set-up	set-up	set-up		set-up	set-up	set-up	set-up				
8:00		MORNING SESSION 1A	MORNING SESSION B1	MORNING SESSION 1	MORNING SESSION 1	SCI EDU MORNING SESSION 1	MORNING SESSION 1		MORNING SESSION 1	MORNING SESSION 1	Exit Interviews	MORNING SESSION 1A	MORNING SESSION 1B	MORNING SESSION 1C	MORNING SESSION 1D				
8:15					break	break	break	break											
8:30					break	break	break	break											
8:45				MORNING SESSION 1	MORNING SESSION 2	PHY MORNING SESSION 2	MORNING SESSION 2A	MORNING SESSION 2B	MORNING SESSION 1	MORNING SESSION 1	Exit Interviews	MORNING SESSION 1A	MORNING SESSION 1B	MORNING SESSION 1C	MORNING SESSION 1D				
9:00																			
9:15																			
9:30		MORNING SESSION A2	MORNING SESSION B2	MORNING SESSION 1	MORNING SESSION 2	PHY MORNING SESSION 2	MORNING SESSION 2A	MORNING SESSION 2B	MORNING SESSION 1	MORNING SESSION 1	Exit Interviews	MORNING SESSION 1A	MORNING SESSION 1B	MORNING SESSION 1C	MORNING SESSION 1D				
9:45																			
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11:00		Maiben Lecture: Dr. Mary Ann Vinton "Roots, Research, and Resilience: Exploring the Future of the Nebraska Sandhills" Great Plains Room																	
11:15		Awards and State of the Academy - Great Plains Room																	
11:30		INBRE Steering Committee Arbor Suite A																	
11:45		Lunch in East Campus Cafeteria / Graduate School Preparedness Panel, Great Plains Room A																	
noon		Conference Headquarters, for assistance call Executive Secretary 308-641-9342			ENV	EAR		BMS-Forensics		BIO	CHM	INBRE	BMS-A	BMS-B	BMS-C	BMS-D			
12:15					AFTERNOON SESSION 1	AFTERNOON SESSION 1		AFTERNOON SESSION 1		AFTERNOON SESSION 1	AFTERNOON SESSION 1	AFTERNOON SESSION 1	AFTERNOON SESSION 1	AFTERNOON SESSION 1	AFTERNOON SESSION 1A	AFTERNOON SESSION 1B	AFTERNOON SESSION 1C	AFTERNOON SESSION 1D	
12:30																			break
12:45																			break
1:00					AERO IN PERSON POSTER SESSION	POSTER SESSION		AFTERNOON SESSION 2		POSTER SESSION 3:45-4:45pm Some Sessions May Overlap				POSTER SESSION	POSTER SESSION	POSTER SESSION			
1:15										POSTER SESSION	POSTER SESSION 3:45-4:45pm Some Sessions May Overlap					POSTER SESSION	POSTER SESSION	POSTER SESSION	
1:30																			
1:45			Social Event / Reception - Morrill Hall, UNL Main Campus 14th and U Streets																
2:00																			
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Program and Proceedings of the 135th Annual Meeting

2024-25 ROSTER - NEBRASKA ACADEMY OF SCIENCES, INC. - April 19 2024

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**Executive Committee members*

2025 MAIBEN LECTURER

Dr. Mary Ann Vinton, Professor of Biology and Director of Environmental Science at Creighton University



Dr. Mary Ann Vinton grew up as a member of a five-generation family of cattle ranchers in the Nebraska Sandhills. She has received an undergraduate degree in Biology at the University of Wyoming, a MS at Kansas State University, and a PhD in Ecology at Colorado State University. She is now Professor of Biology and Director of Environmental Science at Creighton University in Omaha. Dr. Vinton teaches courses in biology, ecology, and environmental science. Her research program revolves around the ecosystem consequences of human impacts on plant communities, such as impacts wrought by invasive plants or the demise of once-common plants. Her research has been supported by the National Science Foundation, NASA-Nebraska Space Grant, and Nebraska Environmental Trust, and involves close mentoring of undergraduate research students. Recently, she has returned to the Sandhills to reconnect with her roots and study how landscapes are changing with management and climate.

Dr. Vinton inherited a section of land on the Dismal River from her mother and “Kinkaided” by her great, great aunt, Mary Crouch.

The section is known as the “Aunt Mary” and is surrounded by family. She has used the Aunt Mary as a study site for biodiversity work and analyses of the landscape diversity inherent in the wet meadows and dry dunes in the Sandhills. In talking with friends and family, Dr. Vinton has become interested in the factors that affect land management and how decisions and attitudes are often not based on science or economic optimization, but often involve feelings of obligation and connection, stemming from long relationships between one another and land. In her presentation, she will blend ideas from natural and social science to explore the status and future of the Nebraska Sandhills as one of the most intact grasslands in the world.

2025 FRIENDS OF SCIENCE AWARDS

Since 1971, the Board of the Nebraska Academy of Sciences has taken great pride in recognizing those in the state who have made exceptional contributions to science. By shining a spotlight on these trailblazers, the Academy hopes to encourage continued innovation and discovery, ensuring that Nebraska remains at the forefront of scientific progress.

DR. DAVID CROUSE, PhD



David A. Crouse, Ph.D. is an Emeritus Professor in the Department of Genetics, Cell Biology and Anatomy at the University of Nebraska Medical Center in Omaha (courtesy appointments in Radiation Oncology and in Radiology). Dr. Crouse was born in Canton, Illinois and grew up as an “Army Brat” all over the world. He received his BS in Physics in 1966 and MS in Zoology (genetics emphasis) in 1968 from Western Illinois University. His graduate education was interrupted by two years (January 1969-Dec 1970) in the US Army including a year of service in Vietnam (June 1969-June 1970). In January 1971, he returned to graduate school, completing his PhD in Radiobiology at the University of Iowa in August 1974.

In 1977, after a three-year post-doc at the Argonne National Laboratory in Chicago, studying the late effects of radiation, Dr. Crouse moved to the University of Nebraska Medical Center as a very new Assistant Professor and progressed up the traditional academic ladder. His research interests, mostly funded by the NIH, were related to the re-development of the immune and hematopoietic systems following radiation exposure and bone marrow or peripheral blood stem cell transplantation.

Beyond his research, Dr. Crouse has had teaching experience and recognition in many areas of cell biology and radiation biology. His teaching emphasis for medical and graduate students was in hematology and immunology. He has also taken a lead role in promoting an understanding of the science and ethics that relate to stem cell biology. He developed programs and taught courses related to “Responsible Conduct in Research” and other important career issues for graduate students, post-docs and junior faculty (e.g., mentoring, authorship and publication ethics, promotion and tenure issues, guidelines for animal care and use, etc.). He also continues to lecture on topics related to late effects of radiation exposure.

He spent the entire 1994-1995 academic year working as American Council on Education Fellow with the Chancellor and Academic Vice Chancellor at the University of Nebraska - Lincoln. He returned to UNMC as the Associate Vice Chancellor for Academic Affairs and Executive Associate Dean for Graduate Studies and spent seventeen years in those roles. During that time, he also served a total of nearly 5 years as the Interim Vice Chancellor for Academic Affairs and Interim Dean for Graduate Studies under both Chancellor Berndt and Chancellor Maurer. He retired in late 2012 but remains active with occasional lectures at UNMC or elsewhere as well as serving on several science or health science related boards.

His interests outside of the academic world include travel, photography, genealogy, woodworking and cooking. He also spent considerable time building and /or rebuilding homes for Habitat for Humanity as well as building cinder-block homes for very poor families in the rural communities just outside Quito, Ecuador (elevation, just over 10,000 ft).

DANIEL SITZMAN



Dan Sitzman, a life-long Omaha resident, currently is a Program Coordinator at Kiewit Luminarium, initiating the school field trip program at Nebraska's largest STEM discovery center. Dan's science educator career began with 32 years in the Omaha Public Schools, first as an eighth grade science teacher at J. Sterling Morton Junior High. While at Morton, Dan first presented at the Nebraska Association of Teachers of Science Fall Conference, as well as Nebraska Science and Math Initiative and Nebraska Operation Chemistry.

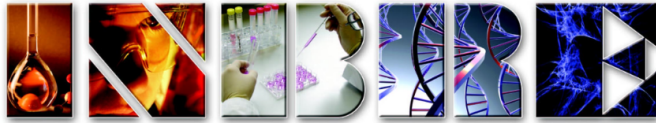
After eight years at Morton, Dan transferred to Omaha North High School, teaching biology and chemistry when he received the 2003 Presidential Award for Excellence in Science Teaching.

Dan then served as Curriculum Specialist at Omaha North for 12 years. He remained directly involved with students as co-sponsor for the school's Science Olympiad and Science Bowl teams and Science Fair students and director/teacher of Omaha North STEM Summer Camps. For seven years, Dan served as a districtwide Science Instructional Coach, supporting science teachers at 12 middle schools and seven high schools. He concluded his Omaha Public Schools career by teaching at the High School Alliance on the campus of University of Nebraska Medical Center. He continues to mentor student science researchers, including many who have represented Nebraska at the American Junior Academy of Sciences, International Science and Engineering Fair, and National Youth Science Camp.

His professional leadership at the local, state, and national level includes terms as President of the Nebraska Academy of Sciences, Nebraska Association of Teachers of Science, and the Metropolitan Science and Engineering Fair. Dan has presented at National Science Teaching Association's national and regional conferences, Magnet Schools of America, and many state conferences. He has been published in *Science Scope* and *The Learning Professional*. His service on boards and planning teams over the years includes Nebraska Science Festival, Nebraska Sci Comm, Nebraska Science Olympiad, Nebraska Building a Presence in Science, Nebraska Junior Academy of Sciences, National Science Teaching Association Regional Conference, and the National Association of Academies of Science. For two decades, he taught at University of Nebraska Omaha's Aim for the Stars Summer STEM Camps. As the Maiben Lecturer for the 2021 Annual Meeting, Dan presented part of his research on the history of the Nebraska Academy of Sciences, Nebraska Association of Teachers of Science, and Nebraska Junior Academy of Sciences.

Dan has received several other awards, including the Nebraska Association of Teachers of Science Catalyst Award, GW Brown Pinnacle Award, Peter Kiewit Foundation Nebraska Achievement in Teaching Award, and Phi Delta Kappa Showcase Teacher. Dan earned a B.S. in Natural Science from Saint John's University (Minnesota) and an M.S. in Curriculum and Instruction from University of Nebraska Omaha.

Thank you to the Sponsors of the 135th Annual Meeting of the Nebraska Academy of Sciences



Nebraska's Institutional Development Awards (IDeA) Networks
of Biomedical Research Excellence (INBRE)



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