

Nebraska Science News



Nebraska Academy of Sciences



Nebraska Association of Teachers of Science

Serving Scientists and Science Educators Across the State of Nebraska

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FROM THE NAS PRESIDENT'S DESK

I'm not sure, but I think autumn missed us, or, did we miss it? It is indeed a beautiful scene at WSC with the fresh snowfall across campus. I'm not sure I'm ready for winter to begin, but it gives me a sense of calm when I watch the snow fall and take time to enjoy a cup of hot chocolate. (I am awaiting that time to arrive!)

Looking ahead to 2021, NAS is anxious to renew contact with our membership, peers, and students who have been busy with research. Planning for the spring 2021 NAS conference is now in its infancy, however it will really take form in December and January. I can tell you that due to the uncertainty of the COVID-19 virus, we have decided to move forward by planning a virtual conference. This will bring a few changes in format but will also allow you to attend more sessions and keep everyone as safe as possible. Rather than holding the virtual conference on one long day, we are contemplating spreading the disciplinary sessions over several days. This would enable the opportunity to attend multiple presentations across the disciplines that normally would be impossible when using concurrent sessions. We also have several other innovative ideas, therefore this may not be the final plan.

We are hopeful that the section coordinators will have a full slate of presenters. I hereby request that the previous Section Coordinators begin soliciting presenters for your disciplines. Regardless of the format, your work and experience are essential for us to have a successful conference. We will do our best to keep you updated on the format and the date(s). Please contact us with any questions, concerns, or suggestions you may have.

Just a quick reminder; we need your nominations for the NAS scholarships. Applications and instructions are available on the NAS website. The deadline for application submission is February 1, 2021.

All of us at NAS wish you and yours a safe and wonderful holiday season!

Sally Harms, NAS President
Wayne State College

NATS PRESIDENT NEWS and VIEWS

Change is inevitable and NATS is changing.

Over the past 3 years we have seen many changes with NATS moving the conference from Camp Calvin Crest to Kearney, joining forces with NATM and a new Executive Secretary. Fast forward to this year and we are seeing all of those change yet again.

Due to COVID, NATS and NATM offered separate virtual conferences this year. The NATS conference was attended by 117 educators and had amazing speakers from across the country. Mark Windschitl, from the University of Washington and Ambitious Science Teaching, was our Keynote Speaker and spoke on engaging students in productive science talk in the classroom. While we were slightly smaller in number and spread out across the state, our conference was a professional and financial success.

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Next year our new president elect, Christine Gustafson, will be organizing our conference and will be looking for a new venue and opportunities for us to change as we continue our mission of *Enhancing Science Education for All Nebraskans*.

Change can be scary at times as we forge into the unknown. But change also allows us an opportunity for growth. Change allows us to reevaluate practices, streamline operations, and potentially reach new members in new ways.

At the conference, NATS members approved a bylaw change to become our own independent 501c3 organization. This process has started and will take some time to finish. Look for more details in the coming months.

In the past year, NATS has embraced change as we have worked with new and old partners on new endeavors. NATS leadership continues to reach out regionally by partnering to present during *MINKS & Co* (Missouri, Iowa, Nebraska, Kansas, South Dakota, and Colorado) webinar series. We have made new connections with informal science education providers across the state creating a shared Professional Development Calendar for teachers. A teacher development grant through the Nebraska Environmental Trust was postponed due to Covid, but we are proceeding with that opportunity next year. NATS has also provided several virtual conferences this year and continued our focus on equity issues.

The NATS board is still excited and ready to pursue new endeavors in the coming year as we continue to change and provide more for our members.

Scott King, NATS President
North Platte Public Schools



NJAS NEWS

Values of Science Fair

Science fair is designed to promote science and technology across America

by providing incentives for students to apply creativity and critical thought to solutions of science, technology, engineering, and mathematics (STEM). It offers an opportunity for students to meet, exchange ideas, and discuss career possibilities with scientists and engineers from colleges and industries. Science fairs have received even political notice when President Barack Obama mentioned them in his State of the Union Address on

January 25, 2011, “We need to teach our kids that it’s not just the winner of the Super Bowl who deserves to be celebrated, but the winner of the science fair.”

Many students who showed interest in the natural world since childhood proudly recalled winning a science fair. If students follow the scientific method as they carry out experiments for their science fair projects, it will help them understand scientific concepts, and with proper guidance from their teachers, it will lead them to a lasting interest in both science and engineering. Science fair involves hands-on research and learning. Students demonstrate the ability to identify a problem, formulate a hypothesis, determine a procedure, gather data, interpret the results, and draw conclusions. Science fairs can be instrumental in making science make sense to children who may otherwise miss the opportunity.

Students who participate in science fairs could develop an interest in science that goes well beyond a motivation gratified only by prizes or rewards. Each participant gains an interest in the fairs and a sense of self-efficacy. Also, students find gratification, achievement, and reward through participation. They like both the prizes and the feeling that their ideas are well received by others. Moreover, students participate in science fairs do so for the possibility of traveling, meeting and sharing their ideas with other people. Finally, the participants acquired learning strategies.

Given that science fairs promote student-led project work, which tends to be de-emphasized in schools, they may be viewed as a positive educational phenomenon. Although research reports about science fairs are relatively rare, one can imagine other important learning outcomes from participation in them, such as deeper understanding of subject matter knowledge, awareness of some characteristics of science, the competitive nature of science, and technical skills such as measurement techniques.

Students can gain significantly in six specific theme areas: scientific research and design, oral and written communication, career direction, lifelong connections, personal satisfaction, and financial gain. It can be concluded that the skills and experience acquired through science research and science fair competition provides students with real life learning opportunities and critical thinking skills that they can apply immediately and in their future studies and life experiences.

Students can enter their projects at six different NJAS regionals across Nebraska. Each regional will select six junior high and six senior high to compete at the state level on April 22, 2021. Students can win many scholarships, cash awards and special awards. Visit

www.nebraskajunioracademyofsciences.org for rules, dates of the regionals and other information.

Randall Lienemann
NJAS President

DATES TO REMEMBER

Click on the date below to learn more

[PIE Grant 1st Quarter Application Deadline – January 11, 2021](#)

[Collegiate Scholarship Application Deadline – February 1, 2021](#)

[NAS Open Board Position Application Deadline – February 5, 2021](#)

[High School Scholarship Application Deadline – March 1, 2021](#)

[2021 NAS Virtual Spring Meeting – April, 2021](#)

ARCHIE AND THE MAIBENS

By Daniel Sitzman, Omaha Public Schools



Top: Children view the original Archie at Morrill Hall. Photo credit: Craig Chandler, University Communication.

Left: undated photo of Hector Maiben, published in 1924 *Bulletin of the Nebraska State Museum*.

Right: Photo of Ben and Rachael Maiben, published in a 1950 *Sunday World-Herald* feature on the couple.

Whether by life-sized sculptures near Lincoln's Memorial Stadium or in Omaha's Henry Doorly Zoo and Aquarium, the articulated skeleton in Lincoln's Morrill Hall, logos for the state museum, or learning about the Nebraska state fossil,

youngsters and newcomers to Nebraska are quickly introduced to the state's most famous prehistoric mascot: Archie the Mammoth. Archie is directly connected to a family who is the namesake for our annual Maiben Lectures. Hector and Benjamin Maiben, two brothers born in Wisconsin to a Scottish father and English mother, grew corn near Palmyra, Nebraska, in the early 20th century. Both brothers enthusiastically supported science research in Nebraska during their lives.

Hector was instrumental in funding fossil research and displays by Nebraska State Museum director Erwin Hinkley Barbour and assistant curator Carrie Barbour (Erwin's sister, a professor of paleontology, and NAS member). Charles Morrill, for whom Morrill Hall is named, and Hector Maiben were described in Erwin Barbour's *A Preliminary Report on the Nebraska State Museum* (1924) as "generous contributors" to the Nebraska State Museum, not just financially, but for sharing their fossil collections to display at the museum, which included Hector's "giant fossil tortoises of the state" and his elephant bones collection. Barbour would soon announce his most famous "find" as "The World's Largest Elephant" at the H. S. Karriger farm 16 miles north of Curtis. Mrs. Karriger had noticed her chickens preferred a limey substance on the ground. As she investigated, she discovered a huge tusk and head that she exhumed and displayed at the county fair, drawing Hector and Barbour's attention. Barbour, with Hector Maiben's funding, made further excavations at the Karriger farm, and in 1925 authored the first of the scientific papers of the find. The species of a "prehistoric elephant" that eventually was named *Archidiskodon maibeni* to honor Hector, is the specimen that we in Nebraska know commonly as "Archie."

While passionate about ensuring that Nebraska paleontology finds were available for public display, Hector also made a name for himself in the national science community. When Hector died in 1931, a bequest of \$37,833.40 (equivalent to about \$500,000 in the year 2020) was donated to AAAS to fund the national conference's annual lecture, an arrangement which apparently ran through 1940.

Benjamin (a graduate of the University of Nebraska College of Agriculture) and his wife Rachael (an 1898 graduate of the University of Nebraska College of Chemical Engineering and a NAS member) established in their will that their possessions would be sold so that, as *The Lincoln Star* headline of May 24, 1959, proclaimed, "Every Nebraskan to Benefit from Maiben Legacy." The intent of their financial and land donations to the Nebraska Academy of Sciences through the University of Nebraska Foundation "is to expose Nebraska children to the wonders of the natural science world." Starting in 1960, NAS and, later NATS, named the keynote lectures at annual meetings to

honor the Maiben family legacy that cover lecturers' expenses and honoraria.

Under the Academy's direction, the Maiben land became part of the U.S. Department of Agriculture Soil Bank Program and Conservation Reserve Program that provided a yearly rental payment in exchange for the Academy removing environmentally sensitive land from agricultural production and planting species to improve environmental quality. In the mid-1990's, landlocked by expanding communities that increased the value of the land, the federal payment no longer covered the costs associated with the property. After three years of debate amongst Academy leadership, the Nebraska Academy of Sciences opted to sell the 160 acres of Maiben land near Palmyra in 1999. The funds from that sale, combined with the bequeathment from C. Bertrand Schultz, Ph.D. and Marian Othmer Schultz, are a bulk of the assets that continue to fund scholarships and mini-grants dispersed by the Academy.

Special thanks to Dr. Mary Ettel for contributing her insights and recollections.

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Year: 1910; Census Place: Palmyra, Otoe, Nebraska; Roll: T624_852; Page: 7A; Enumeration District: 0140; FHL microfilm: 1374865

2021 NAS EXECUTIVE COMMITTEE ELECTIONS

Would you, or someone you know, be interested in joining the NAS Executive Committee? NAS is accepting nominations for the next President-Elect as well as the next Treasurer to join the board in the spring of 2021. [CLICK HERE](#) for more information and to access the application form. Applications are due to the NAS office by **February 5, 2021**. We'd love your participation on the board!

2021 COLLEGIATE AND HIGH SCHOOL SCHOLARSHIP OPPORTUNITIES FROM NAS

NAS administers five scholarships for high school students totaling \$2150 each year. Two collegiate scholarships totaling \$1500 are also awarded each year. The deadline to apply for the collegiate scholarship is **February 1** and the deadline to apply for high school scholarships is **March 1**. [CLICK HERE](#) to learn more and to access the application forms.

CHEMICAL EDUCATIONAL FOUNDATION "YOU BE THE CHEMIST" CHALLENGE

CEF's *You Be The Chemist* Challenge® is a collaborative, multilevel student science competition that celebrates the science of chemistry and elevates STEM careers. 5th-8th grade students are eligible to compete in teams of four (4). All students must be from the same school/organization. Registration is currently open! [CLICK HERE](#) to learn more and to register.

VIRTUAL SCIENCE WORKSHOPS HOSTED BY UNIVERSITY OF WYOMING

The Science and Mathematics Teaching Center at the University of Wyoming is hosting virtual science workshops and would like to invite Nebraska teachers to attend. These professional development opportunities are for K-12 science educators across the nation. [CLICK HERE](#) to learn more!

PIE GRANTS REPORT

NAS announced that it will receive \$60,580 from the Nebraska Environmental Trust for the “Nebraska Environmental Public Information and Education Minigrant Program”. The Trust Board announced funding for the project at its meeting on June 11, 2020 in Lincoln. The project is one of the 118 projects receiving \$20,000,000 in grant awards from the Nebraska Environmental Trust this year.

The Nebraska Environmental Public Information and Education Minigrant Program will award Minigrants of up to \$3,000 each, to support the presentation and dissemination of information and perspectives that will stimulate enhanced environmental stewardship in any category eligible for Nebraska Environmental Trust (NET) funding. These categories are habitat, surface and ground water, waste management, air quality, and soil management. The grants seek to expand dialogue on important current conservation topics and to provide information on emerging or highly useful conservation methods. All Nebraska individuals, private organizations, and public entities are eligible to apply for these funds. This program will be administered by the Nebraska Academy of Sciences.

The Nebraska Legislature created the Nebraska Environmental Trust in 1992. Using revenue from the Nebraska Lottery, the Trust has provided over \$328 million in grants to over 2,300 projects across the state. Anyone – citizens, organizations, communities, farmers and businesses – can apply for funding to protect habitat, improve water quality and establish recycling programs in Nebraska. The Nebraska Environmental Trust works to preserve, protect and restore our natural resources for future generations. <http://www.environmentaltrust.org/>

Ten fourth quarter 2020 PIE grant applications were received and processed in October. Applicants include Kregel Windmill Factory Museum – Windpower 101: A Weekend of Windmills, Wind Chargers, & Wind Turbines; Board of Regents UNL – Master Gardener Driven Landscape Water and Soil; Upper Niobrara White NRD – Range Day 2021; West Nebraska Arts Center – Enrivot-Art; Norfolk Public Schools – Development and Support of the NPHS Watershed Dynamics Program; Kearney Visitors Bureau – Nebraska Spring Migration Campaign; Wachiska Audubon Society – Birds, Habitat, and Community; Sarchet Ventures LLC – Locate, Stimulate, and Propagate Heritage Fruit Trees in Western NE; David Johnson & Central City High School – Study to Determine the Effects of Greenhouse Gasses on Crops Commonly Grown in NE; Chelle Gillan & Central City High School – Analysis of the Effects of the Size and Type of Wetlands on Algal Growth in Lakes in Eastern NE; Asian Community & Cultural Center – Connecting Refugee Youth

to the Necessity of Water; Lori Paulsen – Bright Lights. Recipients will be selected in December.

First quarter 2021 applications are due January 11, 2021.

Grant forms and information can be found on our website by [CLICKING HERE](#).



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