

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 PRESIDENTS' DESK

The end of spring is always filled with lots of exciting events and meetings to celebrate and recognize some of the great science being done across the state. This year was no exception to this with an array of gatherings and meetings, including the Nebraska Science Festival, the Nebraska Science Olympiad and Science Fairs, a very exciting SciComm festival, and our own academy's annual meeting. The 128th annual meeting of the Nebraska Academy of Sciences was held at the Nebraska Wesleyan University on April 20. This year, the meeting featured 238 presentations of research by over 500 professionals, graduate students and undergraduate students from across Nebraska. We also hosted a 3-D printing workshop where participants experimented with some of the tools to design and ultimately 3-D print anatomically accurate molecular models. And, we had one of hopefully many more to come member round-table discussions to do some brainstorming about the NAS network and the great potential we have to become an academy that is even more vibrant and better than the sum of our parts.

Each year, the Academy recognizes one or two people with high achievements in attaining the historical and current objectives of the Nebraska Academy of Sciences. The Friend of Science Award is the highest recognition bestowed by the Academy. This year the Friend of Science Awards were presented to Mary Kalen Romjue-Orlando, FL and Michael Sibbensen-UNL. Details of their careers can be found on page 4.



One of the objectives of the Nebraska Academy of Sciences is to encourage and recognize young budding scientists. Two collegiate scholarships for \$1500 were presented to Sean Watson-UNO, and Samantha Sack-UNO. Sean plans to earn a Ph.D. in Immunology, with an emphasis in the molecular biology of parasitic infections. With this, he aspires to conduct research on vaccine development against parasites and teach at the university level. Samantha plans to pursue a career in immunology. To accomplish this, she will finish her undergraduate degree in biotechnology and then go on to pursue a Ph.D. and postdoctoral fellowship.



Three high school scholarships were awarded this year. Anna Kay Sitzman-Omaha North High Magnet School, received the Loren Eiseley scholarship for \$500. The Robert S. Kubicek scholarship for \$500 went to Charlie Brockhaus from Sidney High School. Thanks to monies donated by C. Bertrand and Marian Othmer Schultz a scholarship for \$750 was awarded to Crystal Andersen-Aurora High School

Two \$500 awards were presented to Audrey Codina-UNK for the outstanding presentation in undergraduate research in Biology; and Harim Won-UNO for outstanding research in Biomedical Sciences. These awards are funded by UNMC. The Nebraska Geological Society awarded three students for best paper in the Earth Science section. Wilhelm Fraundorfer, Nicole Smith, and Lucas Hartford, all from UNL, received these awards.

This year's Maiben Lecture featured Thomas Clemente, Eugene W. Price Professor of Biotechnology at UNL. His engaging talk, titled "Agriculture Biotechnology," was about interdisciplinary science, translational research and the approval process. He discussed what the term GMO really means, how GMOs are made, and guided us through some of the bottlenecks, misunderstandings and flawed regulatory processes involved in getting GMOs to market. In his concluding remarks Tom had a wise message to all students in the audience: "Students, you need both a deep knowledge of your area and broad knowledge to be a member of a team. Take that class out of your area; you have the opportunity to be cross-trained, which help you in your future careers ". I wholeheartedly agree with Tom! Science is done in collaboration and great advances can happen when many minds work together to solve problems and answer questions.



Along the same lines of collaboration, I would like to say a special thanks to the entire Nebraska Academy of Sciences Executive Committee and the past and current Executive Secretaries, Celia Dorn and Michelle Lopez, for their dedication and hard work to promote and support science and science education on behalf of our academy. I very much appreciate their guidance throughout this past year that I have had the honor and privilege to serve as your President. I am also happy to turn over this privilege to our

incoming president, Todd Young from Wayne State, and am happy to announce that the 2018-2019 President-Elect is Doug Golick, from UNL, and that Kirsten Smith, from the Lincoln Public Schools, will stay on as Secretary for another term. In closing, I encourage each of you to think of ways we can keep vibrant this special and possibly unique position we as an academy have where the pipeline of all sciences and science education across the entire state is represented.

Karin van Dijk, NAS President
University of Nebraska–Lincoln

NATS PRESIDENT NEWS and VIEWS

Wow, I am not sure about everyone else but it seems like it was just yesterday that we were preparing for the solar eclipse and now we are looking at the end of another school year. This time of year always forces me into time to reflect upon the school year. As I think about this school year I want to say "thank you" to the members of our organization who provided me with the opportunity to be president this year. It has been an amazing year for science in our state. We started the school year having the opportunity to share a solar eclipse with our students. In September we moved our fall conference to Kearney and worked with our math organization to provide a conference for both math and science educators across the state in one building. While our conference was being held, we also had the opportunity to share in our state science standards being adopted. It truly was wonderful to share in this moment because I know that so many people were involved in getting our new standards to where they are today. The work continues with our new standards and NATS is trying to provide opportunities for our members to continue to learn about how best to implement the new standards. We continue to provide Professional Learning Network (PLN) which is a once a month zoom meeting that has a variety of different topics. This spring we started pop-up conferences across the state. The pop-up conference is an opportunity for our organization to provide professional development to our members throughout the year. I look forward to continuing to provide opportunities to our members for the next school year.

Jodi L. Bahr, President
Harvard Public School



NJAS NEWS

The Nebraska Junior Academy of Sciences (NJAS) held the annual State Science and Engineering fair, on April

19th at Nebraska Wesleyan University's Weary Center. A total of 66 projects by 73 students from 40 Nebraska schools qualified for NJAS through six regional fairs held earlier this spring across Nebraska. Students competed in two divisions: Grades 6-8 in the Junior Division; Grades 9-12 in the Senior Division. Judges selected ten Senior Division students to advance to the American Junior Academy of Sciences Conference next February in Washington, DC. While there, students will present their research to scientists and peers from across the country, tour area STEM-related academic facilities, monuments, attend sessions at the AAAS Annual Conference, and have their research published by AAAS. The top 10 Senior Projects receiving the "2018 Finalist Senior High Plaque" were:

- Jasmine Galvin, Laurel-Concord-Coleridge School
- Sydnie Reeves, Central City High School
- Daniel Stara, David City Aquinas High School
- Hanna Olson, Omaha Zoo Academy
- Morgan Baker, Adams Central High School
- Amirtha Arun, Omaha Marian High School
- Bria Gilmore & Christina Gilmore, Omaha Central High School
- Levi Woodward, Allen Consolidated Schools
- Anjali Pullabhotla, Millard North High School

Reeves, Arun, Woodward and Stara have previously presented their research at AJAS.

The top 10 Junior Projects receiving the "2018 Finalist Junior High Plaque" were:

- Daniel Bashtovoi, Sidney Middle School
- Elaina McHargue, Central City Middle School
- David Johnson, Central City Middle School
- Bronson Long, Gothenburg Middle School
- Courtney Brink, Wayne Community Schools
- Maiah Davis, Wayne Community Schools
- Jenna Cecrle, Adams Central Public Schools (Hastings)
- Carson Miller, Pender Public Schools
- Alixis Bodlak, Pender Public Schools
- Hope Lowe, Omaha McMillan Magnet Center

Twenty businesses, educational institutions and military provided additional awards including books, medallions, backpacks, cash prizes and scholarships.

Randall Lienemann
NJAS President

PARTICIPANT SURVEY

If you attended the 2018 NAS Annual Spring Meeting, please take a short survey to share your thoughts and opinions about your experience. [CLICK HERE](#) to access the survey. We'd love to hear from you!

DATES TO REMEMBER

Click on the date below to learn more

[3D Formative Assessment Task Event – June 12, 2018](#)
[PIE Grant 3rd Quarter Application Deadline – July 6, 2018](#)
[NATS Fall Conference Call for Proposals Deadline – August 31, 2018](#)
[NATS/NATM Fall Conference – September 20-22, 2018](#)

SUMMER GEOSCIENCE COURSE

This course, directed toward in-service teachers, comprises a 16-day inquiry-based field course and science-immersion discovery experience in Wyoming, Nebraska and South Dakota. The primary aims of this course are to improve educators' ability to teach inquiry, gain knowledge and understanding of geoscience, and to demonstrate effective teaching methods that teachers can integrate into K-12 science learning environments. [CLICK HERE](#) to learn more!

CANCER AND 21ST CENTURY LEARNING SKILLS

This new workshop will help teachers explore cancer biology topics and learn ways to integrate them into their existing curriculum. [CLICK HERE](#) to learn more and to register!

AAAS SEEKING STEM PROFESSIONALS

[AAAS](#) needs STEM professionals to assist K-12 teachers in the DC metro area during the 2018-19 school year. Volunteer support may involve giving demonstrations, assisting with lab experiments, lecturing on special topics, or helping with homework. Hours are flexible. Volunteers attend a one-day orientation session before being assigned to schools. Watch the videos at www.stemvolunteers.org to see our volunteers in action. If you care about K-12 STEM education and have time to share your knowledge with students and teachers, please email bcalinge@aaas.org or call 202-326-6629.

2018 FRIEND OF SCIENCE AWARDS



Michael Sibbersen is a Lecturer of Astronomy at the University of Nebraska- Lincoln, co-founder and CEO of Branched Oak Observatory, and a NASA Solar System Ambassador for the state of Nebraska. Working in an ad-hoc capacity, Michael and his wife Kendra facilitate the NASA Nebraska High Altitude Ballooning (N-NHAB) Program launching scientific payloads into near-space.

Before working at the university, Michael was the Science & Technology Coordinator for the Strategic Air Command & Aerospace Museum, and before that, the Outreach Coordinator for the NASA Nebraska Space Grant. Michael has traveled throughout the state delivering hundreds of hands-on science & astronomy demonstrations and workshops for teachers and students under the auspices of NASA, 21st Century Community Learning Centers, and the Nebraska Department of Education. Michael has appeared on national television, and was for some time, a regular fixture as “the science guy” on the local “Morning Blend” talk-show in Omaha.

In September of 2017, the Nebraska Association of Teachers of Science awarded Michael their “Catalyst Award,” the organization's highest honor in recognition of significant contributions to science and science education in the state of Nebraska. Michael lives with his wife, Dr. Kendra Sibbersen and identical twin sons, Matthew and Lucas.

Dr. Mary Kalen Romjue graduated from William Jewell College in Liberty, MO with a Bachelors of Arts Degree in Biology. She returned to Nebraska to teach Middle School Sciences, General and Advanced Biology at Naponee Public Schools and Franklin Public Schools (1963-1987). She organized School wide Science Fairs in both schools and her students competed in the Nebraska Junior Academy of Sciences, Junior Science and Humanities Symposiums, the Greater Nebraska Science and Engineering Fair (GNSEF), the Central Nebraska Science & Engineering Fair (CNSEF), and the International Science and Engineering Fairs (ISEF) throughout those 24 years.

A new committee, the Scientific Review Committee (SRC) was formed in 1974. Dr. Ritter, Dr. Rhodes and Mary wrote rules for student research involving Vertebrate Animals, Human Subjects, Pathogens, and Recombinant DNA etc. Any science fair affiliated with the ISEF worldwide is required to follow these rules. All research submitted to ISEF is reviewed for compliance. She served on the SRC until 2002.

Mary was awarded the Henzlik Award for Outstanding Teacher in Nebraska and the Presidential Award for Excellence in Science and Mathematics Teaching Certificate of Honor, State Award Winner in 1985.

She earned her Ph. D. at the University of Nebraska/Lincoln (UNL) in 1991 and then taught Elementary Science and Social Studies Methods at Fort Hays State University. In August 1993 she joined the Faculty at the University of Central Florida (UCF) where she taught Elementary Science Methods and Space Science for Educators on Orlando, Cocoa, Daytona Beach and Palm Bay Campuses until retirement in 2010.

Currently Dr. Romjue volunteers at the Brevard Zoo Dinosaur Exhibit and in a Fossil Lab (The Academy of Natural History Preparation).

SHARE YOUR STEM ACTIVITIES WITH LPS TEACHERS

Join Lincoln Public Schools science teachers on August 8th from 9:00 to 10:30 am for an opportunity to make connections and plan cooperative programs. Co-coordinated by James Blake, LPS science curriculum specialist, and UNL professors, Julia McQuillan and Judy Diamond, this annual event invites you to the University of Nebraska State Museum's Elephant Hall to share STEM activities with over 150 science teachers. The first 20 groups to sign up will be provided with tables for displays. Contact Judy Diamond at jdiamond1@unl.edu to sign up or for more information.

WORKSHOP ON RENEWABLE ENERGY FOR NEBRASKA TEACHERS

Interested in teaching students about renewable energy? Enroll in the 2018 REcharge Academy – you can even win a scholarship! The [REcharge Academy](#) is a week-long educator training workshop on renewable energy. The intensive training blends lectures from experts and tours of energy facilities with replicable hands-on K-12 lessons to give educators content, as well as context. Participants learn how to build solar-powered cars and boats and wind turbines, as well get a deep understanding of the science behind these projects so they can teach renewable energy concepts in their classrooms. [CLICK HERE](#) to learn about the scholarship opportunity.

3-D LESSON PLANNING WORKSHOP

On June 11-12 or June 13-14, a workshop that focuses specifically on the question of how to write quality 3-D lesson plans for the new Nebraska Science Standards is being offered at ESU 16. [CLICK HERE](#) to learn more and to register!

PIE GRANTS REPORT

NAS announced that it will receive \$57,600 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 April 5, 2018 in Lincoln. The project is one of the 105 projects receiving \$18,301,819 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 \$289 million in grants to over 2,000 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/>

Eleven second quarter 2018 PIE grant applications were received and processed in April. Applicants include the Nebraska Recycling Council – Community Recycling Toolkit Project and Annual Awards Lunch and Workshop Project; Phelps County Historical Society – MoMS Smithsonian Water/Ways Exhibit; Nebraska Wildlife Federation – Nebraska's Climate Future for Civic and Business Leaders; Nebraska Humanities Council – Water Ways Exhibit; Lexington Middle School – Investigating Water Quality; Lincoln Community Foundation – Southern Heights Food Forest Signs; Tri-Basin Natural Resources District – Prescribed Burn Communication Radios; Middle Niobrara Natural Resources District – Efficiency in Irrigation "Know Your Flow;" Wachiska Audubon Society of Southeast Nebraska – Prairie Discovery Days; and Adams Central High School – Lab Equipment Sterilization. Recipients will be selected in June.

Third quarter 2018 applications are due July 6, 2018.

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



2018 SCIENCE OLYMPIAD

Thirty-six middle school Science Olympiad teams and thirty-four high school teams came together to compete in the 31st Science Olympiad tournament on Saturday, April 21, on the East Campus of UNL.



Teams from all over the state competed in 23 competition events and 7 trial events in both the high school and the middle school divisions. Student teams earned medals by scoring in the top 6 of an event and earned team points as well. The high school and the middle school who earned the most points overall in the competition events will represent Nebraska at the national tournament at Colorado State University in Fort Collins on May 18-19.

Science Olympiad teams consist of up to 15 students with up to 7 twelfth graders on a high school team and up to 5 ninth graders on a middle school team. Teams also bring alternates who compete in the trial events.

Science Olympiad events range from study events such as Anatomy, Meteorology, Crime Busters/Forensics, and Herpetology. There also are engineering events such as Tower Building, Electric Vehicle, Mousetrap Car, and Hovercraft. Inquiry events such as Experimental Design and Technical Writing (Write It-Do It) also challenge the students.



We were fortunate to have event supervisors from UNL, Nebraska Wesleyan, Creighton University, UNMC, and the Educational Service Units. These supervisors were joined by about 100 volunteers from across the state.

Nebraska Science Olympiad is sponsored by the volunteer state committee, UNL and CASNR, NAS, the Henry Doorly Zoo and Aquarium, and Education Service Units 9, 10, and 16. A special thanks goes to State Farm Insurance and the A.J. Woollam Foundation for their support.

Congratulations to Lincoln Southwest High School and their coaches Jason Thomsen and Greg Cooper for winning the high school division and to Bellevue Mission Middle School and their coaches Norma Thompson, Suzanne Nolte, and Matt Thompson for winning the middle school division.

The 2019 Nebraska Science Olympiad tournament will be held on Saturday, April 27, on the East Campus of UNL.



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