

# 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

It is with great pleasure that I am writing as the 121st President of NAS. I have been at Wayne State College since 1997, I am a Professor in Chemistry and an advisor to many students. I hope my perspective and experience will allow me to help NAS continue to grow and be an integral part of Science in Nebraska. As president I hope to increase volunteerism associated with NAS and NJAS; and ensure NAS has an integral part in the success of Nebraska hosting the National Science Olympiad in 2015.

The Nebraska Academy of Sciences was established in 1880 and this year held its 123<sup>rd</sup> Annual Meeting on April 19 and commemorated its 133<sup>rd</sup> Anniversary on the campus of Nebraska Wesleyan University. There were 436 registrants at the collegiate academy and about 171 (45 students, 22 teachers, parents and judges) total attended the State NJAS Science Fair competition and awards reception. Please read elsewhere in this newsletter about the results of the state science fair.



This year's Friend of Science Award Recipients were Aurietha M. Hoelsing and Dr. Jim Carr.

Aurietha M. Hoelsing received her Bachelors and Masters degrees from Creighton University in Omaha. She is a former teacher and administrator with Omaha Public Schools. She has worked with the Banneker Project,

an NSF funded initiative awarded to the Omaha Public Schools and as an adjunct for the University of Nebraska at Omaha where she taught an Action Research course. Aurietha's professional activities include being past president of the Nebraska Academy of Sciences, past president of the Nebraska Association of Teachers of Science and past president Metro Science and Engineering Fair. She also served on the National Science Teachers Association board. Aurietha is currently pursuing her on-going goals of promoting participation in science education by working with students K-12 and serving as president and coordinator of the Nebraska Junior Academy of Sciences.

Dr. Jim Carr grew up in Ames, Iowa and received his B.S. in chemistry at Iowa State in 1960. He received his Ph.D. in analytical chemistry from Purdue University in 1965. After a post-doc at University of North Carolina he was hired as a professor of chemistry at University of Nebraska until he retired 2007.



Over the years he has had significant impact on science education in NE; he directed the research of over 40 graduate students and taught courses in all levels of coursework from freshman to advanced graduate students thus having taught well over 10,000 UNL students. For

his excellence in teaching he was honored by receiving the University of Nebraska Distinguished Teaching Award (1981), University of Nebraska Outstanding Teaching and Instructional Creativity Award (1996) and was selected to be a member of the UNL Academy of Distinguished Teachers (1996). He was also selected as an outstanding faculty member by the Women of Sandoz and the Delta

Upsilon fraternity. He served the department as vice chairman and general chemistry coordinator and took an active part in university governance by serving on numerous university committees. He was also a 5 time recipient of the Recognition Award for Contributions to Students sponsored by the UNL Parents Association and the Teaching Council.

Two students, Yasmine Farhat of the University of Nebraska at Omaha and Kaitlin Weskamp of Nebraska Wesleyan University, Lincoln, were each awarded a \$3000 scholarship from the C. Bertrand and Marian Othmer Schultz Endowment of the Academy. Yasmine plans to work in an academic research setting and study marine conservation. Kaitlin's goal is to major in Biochemistry and Molecular biology and have a career related to biomedical research. Four other High School Scholarships ranging \$100 to \$1000 were presented during the 2013 Awards Reception: Brittany Schraeder of Bellevue received the Loren Eiseley Scholarship; Marrison Nutter, Geneva, received the Kubicek Scholarship; Julia Mitchell, Milford, received the Marian Schultz Memorial Environmental Scholarship; and Veronica Bair, McCook, received the Marion O. and Bertrand Schultz Memorial Scholarship.

In support of undergraduate research in Nebraska and the Nebraska Academy of Sciences, the University of Nebraska Medical Center (UNMC) provides two \$500 awards and a plaque for outstanding research presented at the annual Nebraska Academy of Sciences meeting. This year's Outstanding Undergraduate Research in Biology award went to Rachel Coburn of University of Nebraska-Lincoln and to Carrie Brown of Wayne State College for Outstanding Undergraduate Research in Biomedical Sciences.

This year NAS also showed its appreciation to Jim Woodland by giving him a special award recognizing his lifetime contributions to science. Jim Woodland has served as the Director of Science for the Nebraska Department of Education since 1986. Please see elsewhere in this in this newsletter about his lifetime of dedication to science education in Nebraska.

The Maiben lecture was presented by Bob Feurer of North Bend High School. His lecture was titled, "Making People Smarter Using Habits of Mind". Mr. Feurer was the 2011 Nebraska Teacher of the Year.

My thanks go out to Past-President Ross Dinwiddle, NAS Executive Secretary Cecelia Dorn, the members of the Executive Committee, and Aurietha Hoelsing, President of NJAS. Everyone made last year great for me as President Elect; getting to see so many dedicated and excited people working for the advancement of Science was a pleasure and a great learning experience. With people like this, and

the many students, teachers, and parents who participated in NAS and NJAS, it is easy to see that the future of science in Nebraska is in great hands for years to come.

David Peitz, NAS President

## GREETINGS FROM THE NATS PRESIDENT

As the school year winds down and you make plans for summer, think about how you can add some professional development to your schedule. There are many great opportunities to increase your content knowledge or add something new to your current curriculum. Attending workshops or conferences are great ways to network with colleagues and re-energize for the new school year. Check out the NATS website for current professional development opportunities.

I hope you will also put the NATS Fall Conference on your schedule, this year's conference is September 26-28 and the theme is "**Science Puts It All Together, Education Makes It Possible**". The Fall Conference is only as strong as its members; please consider submitting a proposal for presenting and sharing the great things that go on in your classroom. You can email your proposal (form included in this newsletter) to NATS at [nebacad@unl.edu](mailto:nebacad@unl.edu) or fax it to 402/472-8899 or mail your proposal to NATS, 302 Morrill Hall, 14<sup>th</sup> and U Streets, Lincoln, NE 68588-0339. Presenters need to pay a registration fee. Get involved in the NATS organization by considering running for the board or an officer position; it is a very educational and rewarding opportunity.

Mary Moser, NATS President



## Junior Academy State Competition, April 19, 2013

The Nebraska Junior Academy of Sciences state science fair was held Friday, April 19, 2013, at Nebraska Wesleyan University. A total of 45 students from 6 regions across the state of Nebraska competed on the junior and senior high school levels. The goals of the competition are to encourage scientific research and promote interest in careers associated with Science, Technology, Engineering, and Mathematics.

The top ten winners for the Junior High Division are as follows:



Lauryn Caster from Brownell-Talbot Middle School, Aubrey Gras from Lifegate Christian-Omaha, Marcella Jurotich and Martha Pulfer from Wayne Jr/Sr High School, Rachel Kneifl from Allen Consolidated Schools, Priya Kukreja from Omaha Buffett Magnet Middle School, Garrett Ortgiesen from Wilcox-Hildreth Middle School, TJ Sherod from Waverly Middle School, and Jackson Van and Alec Ziebarth from Wilcox-Hildreth Middle School.



The Senior Division top ten winners include: Amanda Dale from Central City High School; Andrew Fanning St. Cecilia's High School-Hastings; Isaiah Friesen, Mackenzie James, and Selene Knobel from Beatrice High School; Jake Kasik from Schuyler High School; Brooke Pieke from Newman Grove High School; Michael Roe from Lakeview High School; Elena Thornhill from the Zoo Academy (Papillion-LaVista South High School). The top five Senior Division winners are Amanda Dale, Isaiah Friesen, Mackenzie James, Selene Knobel, and Brooke Pieke.

The students with projects ranking in the top ten of the Senior Division have been selected as Nebraska delegates to attend the American Junior Academy of Science (AJAS) will hold its annual meeting in conjunction with the National Association of Academy of Sciences (NAAS) and American Association for the Advancement of Science

(AAAS) meetings during February of 2014. These student delegates will present their scientific research, meet with internationally renowned scientists, and collaborate with other young scientists. The February, 2014 meeting will convene in Chicago, IL.

Aurietha M. Hoelsing, President/State Director  
Nebraska Junior Academy of Sciences  
[beton@cox.net](mailto:beton@cox.net)

## LIFETIME ACHIEVEMENT AWARD TO JIM WOODLAND

Congratulations to Jim Woodland who has received the first Nebraska Academy of Science Lifetime Achievement in Science and Science Education Award for his years of service that directly support the goals of the Academy. Throughout the course of his career, Mr. Woodland has facilitated cooperation among scientists and science educators, encouraged young people to be involved in science, recognized high achievements in science and science education, and fostered the positive interaction among stakeholders in science.



Mr. Woodland has served as the Director of Science for the Nebraska Department of Education (NDE) since 1986. Prior to that time, he was an Instructor of Science Education at the University of Nebraska–Lincoln for three years. He began his career in science education as a science teacher for Fremont Public Schools. In the thirteen years he was at Fremont he taught science classes in grades 8-10 including general science, earth science, physical science, and biology. He also developed and conducted a summer geology field course at Fremont and coached the Fremont Eco-meet team. His duties at NDE include the coordination, development, and implementation of Nebraska Science Standards and Assessments; technical advisor for



science NCLB; Title II Math/Science Partnership Grants; and is the Advisor to NATS, NAS, and NJAS. In addition, Jim coordinates various teacher and student awards and competitions including the Presidential Award for Excellence in Science Teaching, the National Youth Science Camp for Nebraska, and Nebraska Science Olympiad. He is a national science facilitator for the Web Alignment Tool, a process to document alignment between state standards and assessments. Mr. Woodland has also played an active role in establishing Science Olympiad in Nebraska by coordinating the state tournament, supporting the development of regional tournaments, and leading the charge for Nebraska to host the 2015 National Science Olympiad Tournament.

Mr. Woodland is a member of the Council of State Science Supervisors (President 2000-03), National Science Teachers Association (Director of Supervision 1993-95), Nebraska Association of Teachers of Science (President 1982-83, Advisor to NAS and NATS 1986-present), and the National Science Olympiad (Arbitration Committee 1991-present, Executive Board 2005-present). He has received the NATS Catalyst Award, the GWB Pinnacle Award, NSTA Search for Excellence in Science Education, and the Science Olympiad Distinguished Service Award.

Jim's wife Ruth is a fourth grade teacher at Paddock Road Elementary School in Westside District 66. His daughter Sarah teaches vocal music at Aldrich Elementary School in Millard. His youngest daughter, Leah has just accepted a position as Kindergarten teacher at OPS Bancroft Elementary School.

Mr. Woodland has often said, "Science is a verb," and he has worked to make this true in Nebraska. Thus, he is very deserving of this new and prestigious award. I was honored and humbled to present this award to Mr. Woodland on behalf of the Nebraska Academy of Science, and I hope that his example continues to inspire those in science and science education for years to come.

Chris Schaben  
Past-President, NAS

## **PUBLIC INFORMATION AND EDUCATION MINI-GRANTS UPDATE**

The Nebraska Academy of Sciences (NAS) received nine applications for the second quarter 2013 PIE minigrant program. Applications were received from King Science

and Technology Center, Introduction to Zoology; Five Rivers Resource, Conservation and Development, Weed Pocket ID Guide; Southeast Flagship Initiative-Northern Prairies Land Trust, Restoration of Nebraska's Oak Woodlands; Conestoga High School, Switching to Sustainable; Nebraska Alliance for conservation and Environment Education, Nebraska Environmental Literacy Youth Assessment; Pheasants Forever, Train the Trainer Prescribed Fire Program; University of Nebraska-Lincoln, NaturePalooza; Nebraska Game and Parks Commission, Sensory Safari: Inclusive Science Education for all Learners; and Northeast Nebraska Juvenile Services, INC., Garden Project. Grant recipients will be announced in mid-June, 2013.

Please consider submitting an application for the third quarter 2013 grant period, due July 5<sup>th</sup>, 2013. Grant forms and information can be found on our website, [www.neacadsci.org](http://www.neacadsci.org). Click on NAS and then click on Grants and Scholarships.

The Nebraska Environmental Public Information and Education MiniGrant Program awards 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 grant expands dialogue on important current conservation topics and provides information on emerging or highly useful conservation methods. All Nebraska individuals, private organizations, and public entities are eligible to apply for these funds.

The Nebraska Legislature created the Nebraska Environmental Trust in 1992. Using revenue from the Nebraska Lottery, the Trust has provided over \$191 million in grants to over 1,400 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/>



The Nebraska Science News is a publication of the Nebraska Academy of Sciences, a private foundation associated with the American Association for the Advancement of Science.

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NJAS President: Aurietha Hoelsing

NAS Executive Secretary: Cecelia Dorn

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## MAIBEN LECTURER BOB FEURER

Bob Feurer, North Bend High School presented the Maiben Lecture this year entitled "Using Habits of Mind to Make People Smarter." His sponsorships over the years include seventh grade and junior class, Future Teachers of America and the North Bend Central Science club which has 67 members this year. He has been the curator of the Franklin-Cotterell Greens Arboretum, a Nebraska Statewide Arboretum Affiliate site found on the school grounds, for 20 years, acquiring over \$100,000 of funding for the site.



Bob has been a member of the Nebraska Association of Teachers of Science for his entire career and served as the president in 1997-98 after a stint on the board of directors in 1993-1995. He is a frequent presenter at the fall conference.

Feurer was the Nebraska Rural Community School Associations Secondary Teacher of the Year in 1992, a recipient of the Nebraska Presidential Award for Excellence in Math/Science Teaching in 1994 and the 1996 Tandy Technology Scholar Award winner. He earned the AKSARBEN Good Neighbor award for his work in the arboretum in 2009. He was selected as the 2011 Nebraska Teacher of the Year by the Nebraska Department of Education.

With the advent of the Common Core and Next Generation Science Standards one thing stands true, educators are to teach students, regardless of age, how to think and how to learn. Bena Kalick and Arthur Costa interviewed hundreds of people gauged to be "intelligent" in all walks of life. From that research they determined 16 traits or behaviors that all those people shared; they called them intelligent behaviors. As their development of those behaviors progressed they determined that they did not just want those capacities to be behaviors but to become habits because they contributed to a person's success both in school and in life. From that thinking, Habits of Mind became the strategy for approaching situations where no clear solution existed.

Thinking and learning is discipline independent and a requirement in the 21st century environment. Habits of Mind give the user an attack strategy for solving those new problems. The 16 habits have been given descriptive names that any age learner can "hook into to"; "managing impulsivity" is describing executive function and "thinking interdependently" is collaboration, terms an elementary student might not understand.

A quote from Alvin Toffler points to the fact that it is not what we know but that we can learn that is important. "The illiterate of the 21st century are not those who cannot read and write but those who cannot learn, un-learn, and re-learn."

## 2013 NEBRASKA SCIENCE OLYMPIAD

The 26<sup>th</sup> Nebraska Science Olympiad tournament was our largest to date. We had 33 middle schools and 29 senior high school teams participating. Bellevue Mission Middle school, coached by Melody Kjerstad and Norma Thompson, won for the 9<sup>th</sup> consecutive year. Lincoln Southwest, coached by Mark Shearer, Greg Cooper, and Jason Thomsen won for the third year in a row. Both of these teams will represent Nebraska at

the National tournament in Dayton Ohio. For the first time students competed in all 23 events offered at the National Level.

The state planning team is appreciative of these sponsoring organizations. Regional Tournaments: ESU 10, 16, and Omaha's Henry Doorly Zoo and Aquarium. State Tournament: University of Nebraska–Lincoln (College of Agriculture and Natural Resources, Institute of Agriculture and Natural Resources, Center for Science Mathematics and Computer Education), Nebraska Association of Teachers of Science, and the Nebraska Department of Education.

Nebraska is gearing up to host the National Science Olympiad Tournament at UNL in May of 2015. If you would like to be involved in next year's state tournament or the 2015 national competition contact Jim Woodland ([jim.woodland@nebraska.gov](mailto:jim.woodland@nebraska.gov)).

## ACADEMY WEB SITE UPDATES

The NAS/NATS/NJAS web site is adding new content all the time. NATS Fall conference attendees were able to register on line last fall, and registration was also available this spring for the NAS Annual Meeting. Payment can be made with a credit card or through Paypal. At this time presenters cannot register on line. Since they are submitting abstracts (Spring Annual Meeting) and proposals (NATS Fall Conference) which must be approved the process for presenter registration is still done by mail, email, or fax.

Our newsletter is available to members and can be downloaded saving money and resources. The Transactions has been converted to on-line digital copy available through UNL Digital Commons as well as EBSCO Publishing. Publishing digitally allows us to upload research articles as they are submitted resulting in more timely distribution of research information. For information about accessing or submitting Transactions articles go to our website: [www.neacadsci.org](http://www.neacadsci.org). Click on NEWS; then click on Publications (found on the left side bar).

## FULLBRIGHT CANADA SCHOLARSHIP OPPORTUNITIES

Fulbright Canada, part of the worldwide Fulbright Program, supports focused academic exchanges between Canada and the United States. Along with joining the prestigious Fulbright network, all grantees receive a cash award (\$12,500 - \$25,000), a health

benefit plan, a three-day orientation in Ottawa, and can apply for [enrichment opportunities](#) such as mobility funding (up to \$800) to participate in academic activities outside of their host region, the Alumni Internship Program, the Eco-Leadership Program and the Community Leadership Program.

Fullbright Canada is currently seeking applicants for our various research chairs, all valued at \$25,000 for one semester. Fulbright Canada offers an outstanding 43 different visiting research chairs which are available at 22 Canadian Institutions. Please visit the website with a catalogue of our awards:

<http://www.fulbright.ca/programs/american-scholars/visiting-chairs-program.html>

These chairs offer an extraordinary opportunity to scholars seeking to do comparative research in a welcoming and engaging environment.

We are also recruiting American scholars and students for our self-placed traditional awards that can be held at any institution across Canada. For more information about all of our awards, please visit our website at [www.fulbright.ca](http://www.fulbright.ca). Please note that the deadline to apply for the 2014-15 academic year is August 1, 2013 for scholars and October 17, 2013 for graduate students.

- Flyers can be downloaded here:  
American Scholars:  
<http://www.fulbright.ca/programs/american-scholars.html>
- American Students:  
<http://www.fulbright.ca/programs/american-students.html>

For general information about programs, please contact Kaitlyn Innes, Program Officer, Recruitment, Outreach and alumni Relations at [kinnes@fulbright.ca](mailto:kinnes@fulbright.ca). If you have specific questions about the Fulbright Visiting Research Chairs, please contact Brad Hector, Program Officer at Fulbright Canada, at [bhector@fulbright.ca](mailto:bhector@fulbright.ca).

## KICKS<sub>2</sub> SUMMER INSTITUTES

The Nebraska Science KICKS<sub>2</sub> Summer 2013 dates and locations have been finalized and the institutes are filled to capacity. The summer "kicks" off in early June with the Secondary Physics Institute hosted by Millard West Senior High. Elementary Institutes will be hosted

at ESU 10 in Kearney and the Henry Doorly Zoo in Omaha, in June and July respectively. The Middle Grades Institute at UNL's Cedar Point Biological Station at Lake McConaughy near Ogallala completes the KICKS2 2013 workshop series.

The KICKS<sub>2</sub> professional development institutes are designed to build teacher content knowledge, develop teacher skills with guided inquiry instruction, integrate instructional strategies that support diverse learners and develop a network of science educators across the state of Nebraska.

**K-5 Elementary Kicks<sub>2</sub> Institutes:**

Educational Service Unit 10, Kearney  
June 17-20 and June 24-27  
Omaha Henry Doorly Zoo  
July 8-11 and July 15-18

**Middle Level Kicks<sub>2</sub> Institute:**

Cedar Point Biological Station, Ogallala  
June 18-21 and June 24-27

**6-12 Physics Science Kicks<sub>2</sub> Institute:**

Millard West Senior High  
June 10-13 and June 17-20

## REMINDERS

- 1) Register to attend the 2013 NATS Fall Conference.** You can register using the form in this newsletter or you can also register on line from the Events tab on our website: [www.neacadsci.org](http://www.neacadsci.org). There will be sessions in all the different science disciplines as well as numerous sessions for elementary teachers.
- 2) Presenters at Fall Conference need to send in their proposal by August 1<sup>st</sup>.** Don't delay. Late submissions are accepted on a case by case basis. Proposals must be accompanied by payment. Mail, email, or fax (402-472-8899) your proposal. The proposal form is included in this newsletter.
- 3) The next Public Information and Education mini-grant deadline is July 5<sup>th</sup>.** Grants are awarded in any amount up to \$3000.00. Fourth quarter deadline is October 4, 2014.

## SCIENCE EDUCATION EXCHANGE AND VISIT TO CHINA



Join K-16 science educators for an extraordinary professional opportunity to visit China (Beijing, Xi'an, and Kunming) this fall. Page Keeley, Past President of NSTA invites K-12, university, and informal science educators to join the 2013 Science Education Delegation to China. The delegation, volunteer-led by Page Keeley, will participate in a number of unique opportunities, including exchanging ideas with science educators in China; visits to K-12 classrooms, universities, and museums; and cultural activities that highlight the unique history and natural wonders of China, including the Stone Forest in Kunming and visits with the ethnic minorities. You can find more information about the program content and itinerary at [www.peopletopeople.com/pagekeeley](http://www.peopletopeople.com/pagekeeley). There is also a guest itinerary for family or friends accompanying a delegate. If you would like more information about the program or a formal letter of invitation to obtain funding or release time for professional travel, please feel free to contact Page Keeley at [pagekeeley@gmail.com](mailto:pagekeeley@gmail.com).