

Nebraska Science News



Nebraska Academy of Sciences



Nebraska Association of Teachers of Science

Serving Scientists and Science Educators Across the State of Nebraska

Summer, 2015-2016

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FROM THE NAS PRESIDENTS' DESK

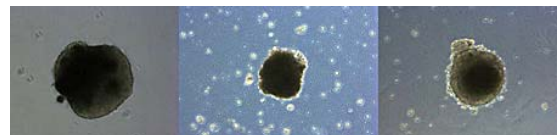
As I begin my NAS and NJAS Presidents term; my goal is to work together with these two organizations and with NATS. During the year my goal is to visit the colleges that host the six NJAS Regional Science Competitions. Many of you will begin your summer vacation soon, so travel "S A F E", especially abroad. I want to share this article by Meghan Rosen on Zika.

Zika: How The Virus Kills Brain Cells & More

One year ago, Brazil reported the first laboratory-confirmed cases of Zika. The virus had cropped up elsewhere in a few earlier outbreaks, too, but it didn't seem all that threatening at the time. Zika symptoms were generally pretty mild — or even nonexistent, the Pan American Health Organization and the World Health Organization reported in an epidemiological alert May 7, 2015. The alert made no mention of pregnant women, babies or microcephaly. In fact, it noted: "Complications (neurological, autoimmune) are rare." What a difference a year makes.

Now scientists have convincingly tied Zika infection to birth defects, and suspect it's behind an uptick in neurological disorders in adults, too. But researchers are still figuring out how the virus acts, and how to stop it. A vaccine is in the works, but could take years. So Zika-fighting tactics have gotten creative. A new billboard in Brazil lures mosquitoes in with spritzes of humanlike scent, and then traps them inside a chamber to die. (It kills hundreds of mosquitoes a day, the billboard's makers tout, but scientists have yet to weigh in.) Researchers have recently explored other methods to rein in Zika. This and more from recent research:

- The best weapon against Zika may be a mosquito-infecting bacteria. Mosquitoes harboring *Wolbachia pipientis* resisted infection from two strains of Zika virus circulating in Brazil, researchers report May 4 in *Cell Host & Microbe*. And if *Wolbachia*-carrying mosquitoes do get infected, they're less likely to transmit the virus. Releasing these mosquitoes in the wild could help halt Zika's spread.
- An antimalarial drug called chloroquine could also work against Zika. When added to human brain cells and mouse minibrains in the lab, the drug helped prevent Zika infection. It also kept minibrains looking somewhat healthy, researchers report May 2 at bioRxiv.org. Chloroquine is a promising candidate for clinical trials, the authors write, because it's safe for use in pregnant women.



- **STOP SHRINKING** Human minibrains grown in the lab (left) shrink when infected with Zika (middle). The virus triggers a protein that tells cells to self-destruct. Blocking the protein helps cells in the minibrains survive infection (right). UC SAN DIEGO HEALTH Zika kills brain cells by cranking up production of a protein that triggers cellular self-destruction, researchers report May 6 in *Cell Stem Cell*. Scientists knew that infection with the virus could kill cells, shrinking minibrains grown in the lab, but until now, they didn't understand how. The protein, an immune molecule called TLR3, could act as a target for therapies.

- A new paper-based Zika test could offer doctors a quick and easy way to detect the virus. The test senses Zika RNA and can differentiate between African and American strains, scientists report May 6 in *Cell*. Though still in the proof-of-concept stage, the test was able to confirm Zika's presence in samples from an infected macaque. The news comes on the heels of the FDA's recent approval of a commercial test for Zika.

Randall Lienemann, NAS President
Acting NJAS President, Hildreth NE

GREETINGS FROM THE NATS PRESIDENT

In a recent conversation I had with Steven Wolfram, CEO and founder of Wolfram Research and the chief designer of *Mathematica* and the *Wolfram Alpha Answer Machine* (think Siri), he made the comment that one day there will be no need to go into a forest to study leaves ... you will be able to do it digitally. I've been contemplating this comment a lot.

There is no doubt that the digital world has opened up avenues for learning about and experiencing our universe that has not been available to all. Where were you on July 20, 1969? I was watching Neil Armstrong take his first steps on the moon on our black-and-white cathode ray tube TV, then running out to the backyard to look at the full moon shining above our house. In-and-out, in-and-out filled with joy as I witnessed the first human walking on the moon. Although this experience was actually in analog, it clearly illustrates the power of technology in letting us have experiences that would normally be impossible.

Experiential learning has the power to change the heart of the learner as well as the mind. My husband and I were teaching 6 and 7 year olds in a Bright Lights class titled *Math and Science Adventures* when we had the following experience: In preparation for tropism experiments, students placed their Fast Plant seeds on paper towels, moistened them, and put them in a zip-lock bag overnight. We were amazed by the awe and wonder they expressed the next morning when they saw that their seeds had germinated. Immediately they got out their Magiscopes and began taking a closer look at their sprouts, witnessing root hairs that had not been seen with their naked eye. They took utmost care in planting their sprouts not wanting to cause any harm to their "baby plants." These students were forever changed in the way they viewed seeds and plants. Most students took their plants home wanting to witness its complete life-cycle. Although we have the capacity to view seeds germinating and plants experiencing tropism via time-lapsed photography, any gardener or

farmer will tell you there is something more, a personal connection, in experiencing it first-hand.

My 7th and 8th grade science curriculum (*Science Fusion*) comes with a digital side which includes digital labs. Throughout the year, I am faced with this decision: providing an experiential vs digital learning experience for my students. There are many benefits to the digital lab: safety, immediate feedback, can be done anywhere, does not need set-up time, and all materials are readily available. The benefits for the experiential lab are numerous too: collaboration with peers, practicing skills (measuring, following written directions, safety guidelines etc.), and using scientific equipment. Every time I choose an experiential lab, I am immediately rewarded with student cheers, engaged students, and their deepened interest in science and learning. For students who miss the lab, the digital side provides them the learning experience on their time.

The experiential learning vs the digital/mathematical world is not a new concept. In the late 19th century, when quantum mechanics was in its infancy, Oliver Sacks writes in his book *Uncle Tungsten: Memories of a Chemical Boyhood* his reaction to a statement made by Sir William Crookes:

"Chemistry," wrote Crookes, "will be established upon an entirely new basis.... We shall be set free from the need for experiment, knowing a priori what the result of each and every experiment must be." I was not sure I liked the sound of this. Did this mean that chemists of the future (if they existed) would never actually need to handle a chemical; might never see the colors of vanadium salts, never smell a hydrogen selenide, never admire the form of a crystal; might live in a colorless, scentless, mathematical world? This, for me, seemed an awful prospect, for I, at least, needed to smell and touch and feel, to place myself, my senses, in the middle of the perceptual world. (pp. 312-313)

Does looking at the moon, planets, and stars through a telescope enhance your experience when you view digital images of these and other astronomical places? Do sink/float experiments in your backyard swimming pool deepen your understanding of density? Will your ability to diagram circuits increase after actually using a battery, wires, and light bulbs to build series and parallel circuits? Does playing with Legos improve your ability to design and understand a variety of three dimensional models?

What is the proper balance between experiential learning and the digital world? The beauty of this question is that there is no one-size-fits-all answer. My only apprehension is that this question won't be asked. As you begin planning

for next year's classes, I hope that you will ask yourself this question and make decisions to provide the best experiential/digital balance for your students.

Lee Brogie, NATS President



2016 NEBRASKA JUNIOR ACADEMY OF SCIENCES SCIENCE FAIR RESULTS

The Nebraska Junior Academy of Sciences State Science Competition was held Thursday, April 21st, 2016 at the Strategic Air & Space Museum at Ashland, NE. Students were selected from the six regions from across Nebraska to participate in this State competition. The State competition brought brilliant young minds together with students and teachers from Nebraska to compete for and win various awards, establish new collaboration for future research, and make a host of new friends. Twenty-nine junior high and twenty-five senior high projects competed in this competition.

The fair was designed to promote science, technology, engineering and mathematics in Nebraska by providing incentives for students to apply creativity and critical thought to solutions of science, technology, engineering and mathematical problems. It offered an opportunity for students to meet, exchange ideas, and discuss career possibilities with scientists and engineers from universities and industries. Students developed a scientific research project, wrote an abstract of the project, and gave an oral presentation. Students won many special awards.

The judges selected twelve outstanding junior high projects and fourteen students to be finalists. Student receiving a NJAS plaque were:

Gunnar Jorgensen	Wayne Community
Isaac Davis	Wayne Community
Kaitlyn Harrison	Gothenburg
Samuel Aden	Gothenburg
Cole Woodward	Allen Consolidated
Flopateer Habib & Issac Miesbach	Waverly Middle
Meagan Dauel & Haylee Young	Waverly Middle
Anjali Pullabhotla	Millard Peter Kiewitt
Jillian Ehlers	Leyton Public/Dalton
Audrey Anderson	Omaha King Science & Technology Magnet
Shruthi Kumar	Omaha Buffett Magnet
Katelyn Cecrle	Hastings Middle



In the senior high division the judges selected eight projects and nine students to receive the NJAS finalist plaque and an invitation to present their research in February, 2017 at the AAAS conference in Boston, Mass.

The students with the opportunity to represent the State of Nebraska at this conference are:

Keylee Bruck	Zoo Academy
Emily Skinner	Zoo Academy
Marcella Jurotich	Wayne Community
Allison Kohl	Central City
Amanda Macke & Jasmine Wilson	Central City
Brent R. Miller	Lyons-Decatur Northeast
Edward Nieman	Omaha North
Daniel Stara	Aquinas Catholic



Randall Lienemann, Acting NJAS President/State Coordinator

ACADEMY WEB SITE UPDATES

The NAS/NATS/NJAS web site is adding new content all the time.

Our newsletter is available to members and can be downloaded saving money and resources. The Transactions and the Program and Proceedings 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. Click on NEWS; then click on Publications (found on the left side bar). Proceedings articles will continue to be submitted through section chairs. Don't forget to "friend" the NATS Facebook as well.

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.
NAS President: Randall Lienemann
NATS President: Lee Brogie
NJAS Acting President: Randall Lienemann
NAS Executive Secretary: Cecelia Dorn
Nebr. Sci. News Editor: Cecelia Dorn
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Website: www.neacadsci.org Donations are tax deductible.

FAREWELL TO AURIETHA HOESING

Aurietha Hoelsing was an integral part of the Nebraska Academy of Sciences and especially the Nebraska Junior Academy of Sciences for many years. She received the Nebraska Academy of Sciences Friend of Science award in 2013. Aurietha's professional activities included being past president of the Nebraska Academy of Sciences, past president of the Nebraska Association of Teachers of Science and past president of the Metro Science and Engineering Fair in Omaha. She also served on the National Science Teachers Association board. Aurietha was a teacher and administrator with Omaha Public Schools.

She will be remembered by all of us at the Academy for her tireless and selfless work with the Junior Academy regional and state science competitions. The hosting of the State NJAS Science Competition this year at the Nebraska Air and Space Museum was due to Aurietha's hope to increase the visibility and prestige of the NJAS state science competition.

Aurietha's obituary in part shared the following: "Aurietha (Fulghem) "Mary" "The Worker Bee" Age 73 Preceded by mother, Harriet Cecil. Survived by husband, Neal; son, Jay; daughter, Carmen Bradley; grandson, Kelly Bradley, Jr.; granddaughter, Corene Bradley; great-granddaughter, Jaela; brothers, E. Robert Cecil and James Cecil. Aurietha called herself "The Worker Bee" because she practiced service to others without expectation of recognition or compensation. She is a hero to so many, young and old.



PIE GRANTS UPDATE

The Nebraska Academy of Sciences received 20 applications for the 2nd quarter. Applications were received from Lancaster County Weed Control, PlayCleanGo Education and Outreach on Invasive Plants; Willa Cather Foundation, Prairie Pollinators Workshop; Omaha Henry Doorly Zoo, School to Home Connections: Making Science a Family Affair; The Nebraska State Fair, Interactive Sustainability Display; The Groundwater Foundation, Groundwater Education Gateway; City of Lincoln-Sustainability Office, 2016 Heartland Sustainability Network Meeting; Elkhorn Valley Museum, Our Wild Neighbors; Board of Regents/UNL, Control of Caucasian bluestem: Demo and Education Plots; NE Section-Society for Range Mgt, Capitalizing on Range Management Opportunities Workshop and Tour; WasteCap Nebraska, 2016 Mission to Zero: Annual Recognition and Zero Waste Planning; Bright Lights, Plant Yourself in the Garden, Arts & Nature, Outdoor Adventures and Fishing Classes; Lyons-Decatur NE Public Schools, Avian Education, Conservation, and Ecology Project; Lauritzen Gardens, Heartland Native Plant Summit; Lancaster County Ag Society/Event Center, Lancaster County Super Fair-Recycled Garden; Board of Regents/UNL/State 4-H Camp, Outdoor Education Program; The Nature Conservancy, The Great Platte River Comic Book; Keep Chadron Beautiful, Chadron Recycling Education; Five Rivers RC&D, Managing Stock Density for Better Soil Health and Production; Center for Rural Affairs,

Environmental Engagement: Gardening with Region V Employment First Agency; and the Omaha Childrens' Museum, Pirates and Mermaids: Adventure to Creature Cove. Applications are currently under review and recipients will be announced in late May

The Nebraska Academy of Sciences has received confirmation to administer the last year of grants during the current three year cycle. NAS will be submitting a new grant application for the coming three year cycle in September of this year.

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 \$250 million in grants to over 1,700 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/>

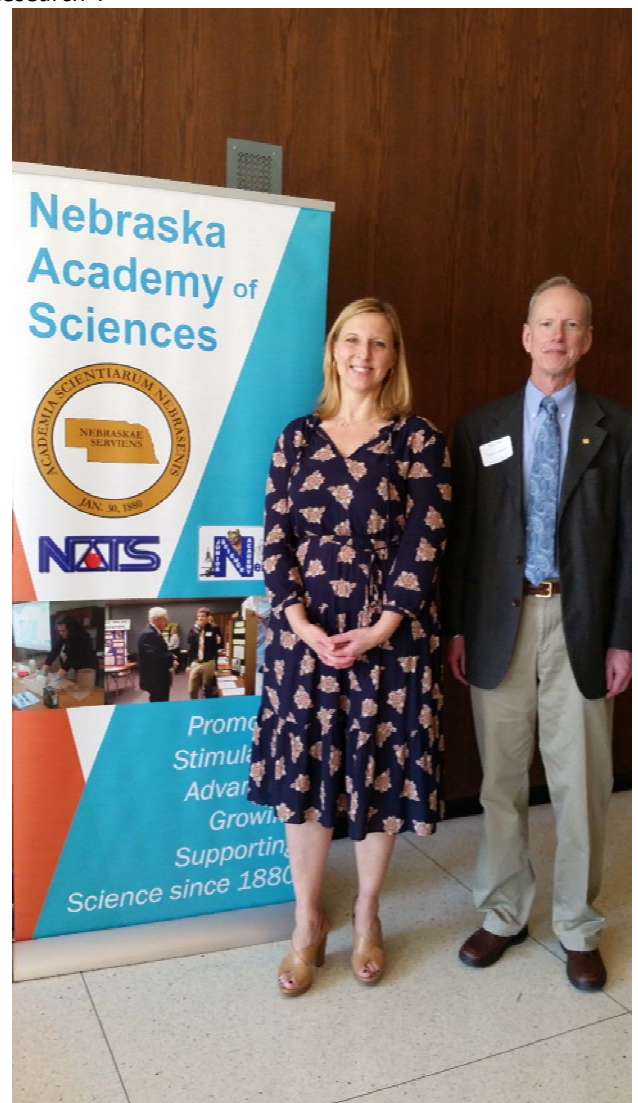
Third quarter 2016 applications are due July 8, 2016.

Grant forms and information can be found on our website, www.neacadsci.org. Click on NAS and then click on Grants and Scholarships.



136TH ANNIVERSARY YEAR 126TH ANNUAL MEETING OF THE NEBRASKA ACADEMY OF SCIENCES

The 126th Annual Meeting of the Nebraska Academy of Sciences was a big success. Over 400 people attended this year and 203 abstracts and posters were presented in 12 different sections. Highlights of the meeting included the Maiben Lecture by Juliane Strauss-Soukup, Ph.D., Professor of Chemistry, and Director of the Center for Undergraduate Research and Scholarship at Creighton University will be the 2016 Maiben lecturer. She started at Creighton in 2000 as the Clare Boothe Luce Faculty Chair for Women in Science. Her lecture was entitled “Riboswitches Turn Students On To Research”.



Two Friend of Science awards were presented to Randall Lienemann, Hildreth, NE; and James Turpen, Ph.D. UNMC.

Randall Lienemann graduated from Hildreth High School and received his Bachelor of Science degree from Kearney Sate College with endorsements in Biology, Chemistry and Physical Science. He began his thirty-four years of teaching science at St. Paul Public School, then onto Hildreth, Wilcox/Hildreth, and Franklin before retiring in 2012.

He has been involved in science education activities for over forty years. Mr. Lienemann actively promotes quality science programs that involved students in doing in-depth science research projects. His students were always selected for Regional, State, National and International competitions. He had many students that received first place in their category at the International Science Fairs.

In 2001, he was selected as the International Outstanding Science Educator. He has received the Distinguished Alumni Award from the University of Nebraska-Kearney and the NTV Honorable Mention award.

Mr. Lienemann is currently the Science Fair Director of the Central Nebraska Science and Engineering Fair at the University of Nebraska School of Technical Agriculture in Curtis, NE. This is one of the two affiliated fairs with ISEF in Nebraska.



He is the Acting President of the Nebraska Junior Academy of Sciences and President-Elect of the Nebraska Academy of Sciences.

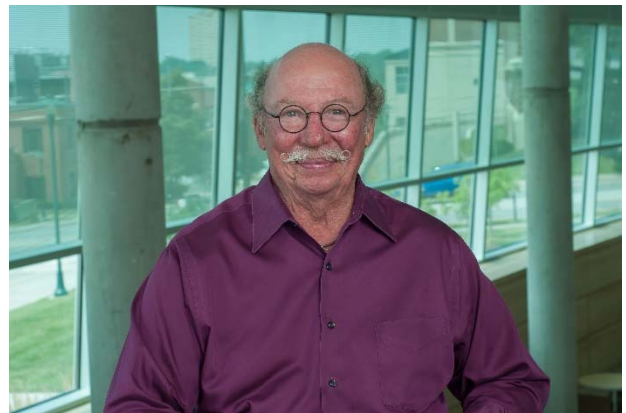
He holds membership in many professional organizations, including the Nebraska Association of Teachers of Science. He has facilitated professional development science research sessions

at NATS and across the state for science teachers. He currently farms with his son south of Hildreth. He is married and has three grown children and six grandchildren.

Jim Turpen was born in Wyoming and grew up in the suburbs of Denver Colorado. Jim was fascinated by biology, especially tadpoles and frogs, from an early age and was drawn to advanced biology classes starting in junior high school. Jim's first teaching experience was as a laboratory assistant in both biology and advanced zoology classes at Littleton Senior High School. He received his B.S. and M.S degrees in zoology from the University of Denver and his Ph.D. in biology from Tulane University in New Orleans,

Louisiana. Jim held teaching assistant positions at both Denver University and Tulane University. Following a year as an instructor of biology at Tulane, Jim pursued postdoctoral studies in immunology at the University Rochester School of Medicine. Jim's first position as an assistant professor was at Pennsylvania State University where he taught general biology and developmental biology. Jim was recruited to the University of Nebraska Medical Center in 1983 and continued his research on the development of hematopoietic stem cells. Jim taught embryology and basic cell biology to first year medical students from 1983-2013 when his administrative responsibilities took him out of the class room.

During his early days in graduate school, Jim worked in a laboratory that was among the first to use somatic cell nuclear transfer as an experimental tool. Jim's subsequent 30 year research career focused on stem cell biology, the



development of hematopoietic stem cells in the frog embryo and stem cell-thymus interactions. Jim is currently the Associate Vice Chancellor for Academic Affairs, Executive Associate Dean for Graduate Studies and Professor in the Department of Genetics, Cell Biology and Anatomy. Jim is also the Principal Investigator on the NIH supported Nebraska INBRE Project. This project, which is in its 15th year of NIH support, focuses on developing the research infrastructure and capacity at the primarily undergraduate institutions (PUIs) in Nebraska. INBRE funds are used to support faculty research in biomedical areas at eight PUIs. Support for faculty and their research laboratories is essential for providing opportunities for undergraduate students to have meaningful scientific research experiences during their academic years. A cornerstone of the NE-INBRE is the INBRE Scholars Program. Students on the participating campuses are selected during their sophomore year and INBRE support enables them to do full time research during their two summers in the program as well as part time research during the academic year. Over 300 Scholars have completed the program and over 75% of the Scholars have pursued careers in biomedical research, the health professions or the scientific workforce in Nebraska.

Six scholarships were announced at the 2016 Annual Meeting, four to high school seniors and two to collegiate recipients.

High School Scholarships:

Loren Eiseley Memorial Scholarship: Mia Hernandez, Sidney High School, Sidney, NE

Robert S. Kubicek Memorial Scholarship: Kathryn Scanlan, Platteview High School, Platteview, NE

Marian Othmer Schultz Memorial Environmental Scholarship: Logan Uhler, Sidney High School, Sidney, NE

M.O. and Bertrand Schultz Memorial Scholarship: Jessica Harms, Bellevue East High School, Bellevue, NE

Rachel Lukowicz, Doane College, Crete and Cleofes Sarmiento, Wayne State College received the C. Bertrand and Marian Othmer Schulz Collegiate Scholarships for \$3000 each.



Rachel is majoring in biology and is hoping to pursue a career in neuroscience research.

Cleofes is majoring in biology and is also planning a career in research.



UNMC AWARDS FOR OUTSTANDING UNDERGRADUATE RESEARCH IN BIOMEDICAL OR BIOLOGICAL SCIENCES

In recognition of the important contributions made by emerging scientists in the state of Nebraska, the University of Nebraska Medical Center (UNMC) is pleased to provide two awards for research presented at the 2016 Nebraska Academy of Sciences meeting. Each award comes with a plaque and a \$500 cash prize.

The award for Outstanding Undergraduate Research in Biomedical Sciences is sponsored by UNMC's MD/PhD Scholars Program and is being presented to Mr. Nicholas G. Fisher from Creighton University for the project "Comparison of self-etch adhesives with atomic force microscopy and optical profilometry and its implications". Co-authors were Andrew Baruth, Department of Physics; and Wayne Barkmeier, School of Dentistry, Creighton University, Omaha, NE; and Toshiki Takamizawa, School of Dentistry, Nihon University, Tokyo, Japan.

The award for Outstanding Undergraduate Research in Biological Sciences is sponsored by UNMC's Biomedical

Research Training Program and is being presented to Ms. Carlie J. Pickrel from Nebraska Wesleyan University for the project "Epstein-barr virus and the role of mdm2 in viral transformation". Her co-author was Dr. Luwen Zhang, Nebraska Center for Virology at the University of Nebraska-Lincoln.

The Biomedical Research Training Program and the MD/PhD Scholars Program at UNMC provide PhD and MD/PhD training opportunities in the Biological/Biomedical Sciences in more than 130 research laboratories at UNMC.

2016 Nebraska Science Olympiad Tournament Summary

On Saturday, April 23rd Nebraska Science Olympiad held its 29th state tournament on UNL's East campus. It was a great day of science competition.

Division B

1st Bellevue Mission
2nd Bellevue Logan Fontenelle
3rd Aquinas Catholic
4th Lincoln Scott
5th Hastings St. Cecelia
6th Omaha King Science

C Division

1st Lincoln Southwest
2nd Lincoln East
3rd Bellevue East
4th Lincoln Science Focus
5th Bellevue West
6th Omaha North

The Tournament in Numbers

- 31 B Division Teams Competing; 34 C Division Teams
- 701 Competitors in State Tournament
- 225 Competitors in Exhibition Tournament
- 50 Event Supervisors
- 58 Events
- 60 + Volunteers

We are looking forward to the 2016-2017 competition year and a celebration of 30 years of the Nebraska Science Olympiad April 22, 2017.

NATS PRESENTER PROPOSALS

Now is the time to consider presenting at the NATS Fall Conference in September. You can present as an individual or team and we strongly encourage you to consider especially if you have never done so before. Presentations are needed in varying subject areas and grade levels. Presenters do need to complete a registration form and pay the registration fee as well. Please click on the following link to submit your proposal. The deadline for submissions is August 1st, any proposal submitted after that time will be accepted as space allows.

[NATS 2016 Fall Conference Proposal Form](#)

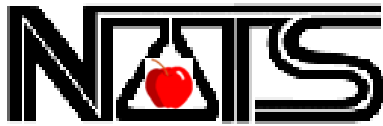
NATS FALL CONFERENCE GENERAL REGISTRATION

Consider registering early for the NATS Fall Conference. We will be at Camp Calvin Crest in Fremont again this year from September 22 – September 24. You can register several different ways, use the form included in this newsletter and mail your payment in or include your billing information. Use your credit card and mail or fax (402-472-8899) your form. You can also register on line on our Events page and pay using PayPal or indicate that you would like to have your school invoiced.

[NATS 2016 Fall Conference On-line Registration Link](#)

CONGRATULATIONS!!!

Congratulations to our own Joe Myers, the next NSTA District XI Director!!! Joe is a science teacher and soccer coach at Norfolk High School and a past president of NATS.



NATS PROGRAM PROPOSAL

2016 Fall Conference

www.neacadsci.org

FOR OFFICE USE ONLY

Session Type _____

Day _____

Time _____ Length _____

NOTE: All Presenters are asked to register for the Conference. Registration fee includes membership.

Please complete a registration form and include with your program proposal. On line proposal link: NATS Fall Conference Proposal

CAMP CALVIN CREST DOES NOT HAVE INTERNET ACCESS. PLEASE PLAN ACCORDINGLY FOR YOUR PRESENTATION

Please Type or Print (legibly in black) Information as You Wish It to Appear in Convention Program

Principal Presenter

Second Presenter

Name, Dept., School/Business, Preferred Mail Address, City, State Zip(+4), Phone: Work, Cell, Fax, Email

NOTE: For any additional presenters, please include the information requested above on an additional page.

Session Data

Session Title _____

Brief Description (50 words or less) _____

State Standard(s) Address in Presentation Please list Standards in the following form: 4.7.4 or 8.2.1 or 12.3.2. It is recommended that in your presentation you include assessment ideas for the standards you address. This is absolutely necessary!

NATS Bookstore Item The NATS bookstore can arrange to sell publications from the NSTA catalog. If appropriate, provide the Title and Author of an NSTA catalog item that closely links to your presentation. Presenters may also sell publications during their presentation time.

I have a publication suggestion for the NATS bookstore that is linked to my presentation.

Title: _____ Author(s): _____

Description of Session Types (Check One that describes your presentation):

- Demonstration, Hands-On Workshop, Make It Take It, Field Trip, Contributed Paper, Short Course

Length of Session:

- Three Hour Thursday Afternoon Workshop (1:30 – 4:30)
- One Hour - (the standard length presentation)
- Two Hour –

Please Mark your choice:
 3 hour Thursday only
 Friday Only
 Saturday Only
 Friday or Saturday

Science Area: (Check only one for listing in final Program.)

- | | | | |
|---|---|-------------------------------------|---|
| <input type="checkbox"/> Biology/Life Science | <input type="checkbox"/> Physics/Physical Science | <input type="checkbox"/> Integrated | <input type="checkbox"/> Elementary Science |
| <input type="checkbox"/> Chemistry | <input type="checkbox"/> Environmental Science | <input type="checkbox"/> Inquiry | <input type="checkbox"/> Technology |
| <input type="checkbox"/> Earth/Space Science | <input type="checkbox"/> General | <input type="checkbox"/> Assessment | <input type="checkbox"/> Science/Technology/Society |

Intended Audience:

- K-3 4-6 Middle/Junior High Senior High Post Secondary All

Maximum number of participants for your session? (Room assignments based on space availability)

- 15 or fewer 16 - 30 31 - 50 No Preference

AV Equipment: (NOTE: Equipment not listed below is to be provided/arranged by the presenter.)

- Screen

Internet Access:

- Yes, definitely Would be nice but not necessary Do not need access

Fees may be charged for the cost of materials only. Presenter(s) are responsible for collecting fees for the session.

- The fee for this session is \$_____. There is no session fee.

Fee pays for: _____

Repeat Session:

Would you be willing to present your session twice? YES NO

Safety Issues

As a NATS presenter, you must comply with the "Minimum Safety Guidelines to NATS Presenters and Workshop Leaders" and you must agree to comply with the guidelines during your presentation. This compliance form will be sent when we send you the program confirmation letter.

Special Room Arrangements: Normal arrangements will include tables and/or chairs unless otherwise requested. Special set ups dependent on availability of resources. List any special needs you will have:

Only the *principal presenter* will be contacted concerning confirmations. All correspondence will be sent to the email address of the principal presenter. The principal presenter must share information with his/her co-presenter(s).

If you or any member of your team would like an administrator, division chief, etc. notified of your participation post-conference, please indicate below. Use additional sheets if necessary. Be certain to designate which presenter's administrator, etc. matches with which presenter if there is more than one presenter in your group.

Name _____	Name _____
School _____	School _____
Position _____	Position _____
Address _____	Address _____
City _____	City _____
State, Zip (+4) _____	State, Zip (+4) _____

**Return one copy of this proposal by August 1:
(later proposals will be accepted only as space allows)**
NATS
302 Morrill Hall, 14th and U Streets
Lincoln, NE 68588-0339
nebacad@unl.edu 402/472-2644 fax 402/472-8899
[On Line Proposal Link](#)

Photocopy this form
as needed



Please TYPE or Print
Legibly in INK

This conference is partially supported by NSEA and NSTA
<http://www.neacadsci.org/nats/Events>

Early Registration, 2016 Conference Dates are Sept 22- Sept 24

ECLIPSING SCIENCE IN NEBRASKA

Register on line at www.neacadsci.org/ Click on Events

Name _____	School _____	ESU _____
Home Address _____	School Address _____	
City _____ State _____ Zip _____	City _____ State _____ Zip _____	
Email _____	School Ph _____	Home Ph _____

Teaching Assignment Elementary Middle/JR High Senior High College Pre-service

If you received any science teaching awards between November 2015 and September 2016 please list _____

May we use pictures of you taken at Fall Conference in our newsletter, on our website or in publications to promote NATS? Yes No

We would like to forward you information about science opportunities, grants, conferences, camps via email unless you decline. No

CONFERENCE REGISTRATION (Postmarked or on line/email by September 2)

- \$125 Includes conference & NAS/NATS Memberships
- \$70 Saturday only conference & NAS/NATS Membership
- \$55 Pre-Service Teacher, Student, or Non-teaching spouse

LATE REGISTRATION (On-site or after September 2)

- \$150 Includes conference & NAS/NATS Memberships
- \$80 Saturday only conference & NAS/NATS Membership
- \$65 Pre-Service Teacher, Student or Non-teaching spouse

WORKSHOP REGISTRATION FOR THURSDAY, SEPTEMBER 22nd to be posted in August

ACCOMMODATIONS – NATS is only providing lodging at Camp Calvin Crest. Hotel arrangements are on your own!!!

Roommates must submit together!

Camp space is limited, so register early. Camp space is assigned on first come, first reserved basis.

LODGE: Bedding and towels provided.

CABINS: Bring your own bedding and towels.

Hotel arrangements by NATS are no longer an option; you must make your own payment and reservations for a hotel.

Staying 2 nights? **The BEST DEAL**

INCLUDES ALL LODGING AND MEALS

- Lodge \$165 (Bedding and Towels Included)
- Cabin \$ 135 (Bedding and Towels Included)
- Cabin \$ 115 (Bring Your Bedding And Towels)

- Thursday Night Lodge \$ 55
- Thursday Night Cabin \$ 40
- Thursday Night Cabin \$ 30

For Lodging Assignment Purposes Only
<input type="checkbox"/> Female <input type="checkbox"/> Male

Special accommodations required, handicapped, etc.
Specify _____

One-night LODGING ONLY (CHECK THE LODGING YOU WILL NEED)

- Friday Night Lodge \$ 55
- Friday Night Cabin \$ 40
- Friday Night Cabin \$ 30

MEALS ONLY (CHECK THE MEALS YOU WILL NEED)

- Thursday Steak Fry \$15.00
- Friday Breakfast \$8.00
- Friday Lunch \$9.00
- Friday Dinner \$11.00
- Saturday Breakfast \$8.00
- Saturday Lunch \$9.00

Complementary T-Shirts available on site: Small _____ Medium _____ Large _____ Extra Large _____ 2xl _____ 3xl _____

Return forms to: nebacad@unl.edu, or NATS, 302 Morrill Hall, 14th and U Street, Lincoln, NE 68588-0339, fax 402-472-8899, questions 402-472-2644

Registration Total	\$ _____	Organization to be Billed	_____
Lodging and Meals Total	\$ _____		_____
TOTAL	\$ _____	Do you need a Receipt?	
Amount Enclosed	\$ _____	Yes	____ No

CREDIT CARD PAYMENT	<input type="checkbox"/> Master Card	<input type="checkbox"/> Visa	<input type="checkbox"/> Discover
Card Number	_____		
3 Digit Security Code (on back of card)	_____	Expiration Date	____/____
Name on card	_____		
Address of cardholder	_____		