

# Nebraska Science News



Nebraska Academy of Sciences

Nebraska Association of Teachers of Science

***Serving Scientists and Science Educators Across the State of Nebraska***

Fall, 2015-2016

Volume 19, No. 1

*Published by the Nebraska Academy of Sciences*

## FROM THE NAS PRESIDENT'S DESK

Your Academy has continued work this summer disbursing Public Information and Education Mini-Grant Awards funded through the Nebraska Environmental Trust, and collecting applications for its Private Foundation Grants. At the same time, summer's science news has provided a bumper crop of interesting, even breathtaking, advances and discoveries that demonstrate the importance and promise of science in human progress.

NASA's successful nine and a half year, 4.67 billion mile [New Horizons mission](#) to Pluto made international headlines in July with remarkable images and investigations of the dwarf planet. The mission already has characterized Pluto's global geology, mapped its surface chemical composition, and examined its atmosphere. Not to be outdone, the European Space Agency robotic lander Philae, which deployed on comet 67P/Churyumov-Gerasimenko last November after a more than ten year journey from earth, has revealed rich information about the comet's composition. Some of its treasure trove of data is disclosed in a special section of the last July issue of *Science*, titled [Philae's first look](#). Remarkably, the lander detected 16 organic compounds, including methyl isocyanate, acetone, propionaldehyde, and acetamide. None of these four compounds have previously been reported in comets.

While these new Solar System explorations have been underway, CERN's Large Hadron Collider has been looking deeply into the nature of ordinary matter. Researchers there have discovered the [pentaquark](#), a new way to aggregate quarks, the constituents of, for example, neutrons and protons.

The global impact of biomedical science has been highly visible this summer, particularly in the areas of malaria and Ebola. These two diseases are of significant research interest in Nebraska. One more step on the long road to a malaria vaccine has been taken: A [large clinical trial](#) of the GlaxoSmithKline vaccine Mosquirix™ resulted in one-third fewer malaria cases, causing the European Medicines Agency to issue a positive scientific opinion of the vaccine for prevention of malaria in young children in sub-Saharan Africa. This is very encouraging, in light of the fact that a child dies every minute from the disease. On the Ebola front, at the end of July researchers described [a highly efficacious Ebola vaccine](#) which the World Health Organization thinks could be a "game-changer." Welcome news, particularly in Guinea, Liberia, and Sierra Leone: BBC News reports 20-30 new cases a week still are reported in these three countries.

The summer has been far from sleepy on the state's college and university campuses. The University of Nebraska Medical Center/Nebraska Medicine is now one of three co-leaders of the US Department of Health and Human Services [National Ebola Training and Education Center](#). Along with Emory University, UNMC has helped the CDC to train hundreds of health care workers on infection control and Ebola patient care. Busy as it is at the Med Center, there was still time this summer to host the 23<sup>rd</sup> annual State Science Meet, June 4-6. Fifty-six students from across the state participated. Neighbor University of Nebraska, Omaha hosted the [Eureka!-STEM](#) program this summer; 55 middle school girls from Omaha participated during the month of June. The Kiewit Corp. and University of Nebraska Peter Kiewit Institute held its second Kiewit Teachers Day, dedicated to STEM education in the state, on June 2-3. It was also exciting to learn that UNO's Bethsaida Archeology program is being featured in the Lost Egypt: Ancient Secrets, Modern Sciences exhibit, at the Durham Museum through September 6<sup>th</sup>, and that

Nebraska is about to be home to one of the country's few Ph.D. programs on clinical and translational science. Creighton University inaugurates this program as its newest graduate degree in the fall.

Celebrating thirteen years of undergraduate research experience programming at Chadron State College, the College of St. Mary, Creighton University, Doane College, Nebraska Wesleyan University, University of Nebraska at Kearney, Lincoln and Omaha, and Wayne State College through the National Institute of Health IDeA Networks for Biomedical Research Excellence (INBRE), Governor Ricketts proclaimed August 3<sup>rd</sup> to be Undergraduate Research Day in Nebraska. Congratulations to all of the members of the program, especially to director James Turpen, UNMC Executive Associate Dean for Graduate Studies and Associate Vice Chancellor for Academic Affairs.

Please share some of this summer's bounty of science advances and discoveries with your family, friends, and coworkers! In them are surprises, food for thought, perhaps even some wide-eyed wonder. And, as summer comes to a close, don't forget the Nebraska State Fair, August 28 - September 7 in Grand Island. The Fair will host variety of STEM-connected activities: The Institute of Agriculture and Natural Resources (IANR), the Nebraska Department of Agriculture and the Nebraska State Fair will have a large exhibit at the Nebraska Building; the Nebraska Game and Parks Commission, the Nebraska Public Power District and the Stuhr Museum of the Prairie Pioneer also will have interactive exhibits at various locations.

Martin Hulce, NAS President  
Creighton University

## **GREETINGS FROM THE NATS PRESIDENT**

I was not alive when mankind first walked on the moon but it's still an incredible feat that I can barely wrap my brain around. Jim Lovell stated that, "From now on we live in a world where man has walked on the Moon. It's not a miracle; we just decided to go." The work that we do every day in our classrooms is sort of like that. Our goal may not be to get students to the moon, although all of us could name at least one student we would like to send there, but it still takes the same process. Lots of hard work. Groups of people working together. Failure. Tears. Frustration.

Yet, just like the engineers, scientists, mathematicians, pilots, and technicians who showed up every day, stayed up late at night, and sometimes banged their heads on the wall to design, build, and launch a rocket with a pod containing several humans to the moon and bring them safely back, educators are doing the same hard work to

help their students learn difficult concepts, achieve success on college-entrance exams, get into their college of choice, or simply meet standards in order to graduate from high school. Thank you for the late nights, early mornings, weekends, and summer vacation time to help your students "reach for the moon!" Who knows, perhaps the first person who will travel to Mars will be sitting in your classroom this year!

I am excited about the future of science in our state. Even though national standards in science are unlikely to be adopted in Nebraska any time soon, districts are making positive changes such as bringing science back into their elementary classrooms, even if it is still just a couple of hours. Several districts have set the bar high by going ahead and adopting and implementing Next Generation Science Standards K-12! The Nebraska Science Festival is bringing science to the public at locations throughout the state. Local businesses are partnering with schools to provide mentoring, materials, and STEM skills to help prepare students for successful careers.

Our own association has a strong voice and should become more active in advocating for science education to our state legislators, department of education, and governor. I challenge all of our members to call, write, or email all levels of government from your local school board and businesses to your Senator and/or Congressperson to show your support for more investment in science education. The NATS board is working on our own policy statement in support of the framework of NGSS which we hope to have available for review at the Fall Conference. We need to express the importance of quality science education in all our elementary classrooms, continuing and accessible professional development for everyone who teaches science, and the materials, time, and space to teach hands-on, inquiry-based science at all levels. Stay positive by sharing your success stories while at the same time highlighting the needs that you have.

It has been an honor representing NATS at two National Congresses on Science Education and various activities. We have a strong organization with some of the best science teachers around the country! I would encourage you to nominate yourself or a colleague for many of the honors and awards that NSTA gives out each year. Our region of Kansas, Missouri, and Nebraska often does not receive many applicants for these awards and I know that it is not for lack of quality science teachers from Nebraska! More information can be found at <http://www.nsta.org/about/awards.aspx>.

I hope that I will see all of you at the NATS Fall Conference September 24-26 and that you personally invite another teacher to join you. Probably all of us can name at least

one “mentor” who personally made sure we made it to NATS that first time. We need more of that so that all science teachers can see for themselves the benefits of the conference. “Science Runs Through It” is this year’s theme and President-Elect Lee Brogie is putting together a wonderful conference that you won’t want to miss out on. We will also be trying out a conference app to provide access to presenter’s information, schedule changes, and contact information for follow-up networking opportunities. Camp Calvin Crest has assured us that their wifi system can handle use by everyone in attendance.

Joe Myers, NATS President



## OPPORTUNISM

Have you ever taken note of the public and private support and recognition provided for student-athletes?

How about for students in spelling bees, speech and debate, theater, or mock trials? These and many other activities recognize the need for students to prepare, participate, compete, or perform, utilizing and applying the knowledge and skills of their interest areas. Without the support for all these activities, interest and achievement would wither. What may seem to some to be unnecessary or trivial or purely for entertainment is actually a major component of the process of education.

Nebraska Junior Academy of Science is entirely focused on providing opportunities for students to access venues to challenge themselves in STEM activities, and thus grow in knowledge and competencies. It is not just about learning facts and tables and formulas, but also learning to appreciate the ultimate value of this knowledge and these processes. No student involved in a science fair should ever be heard saying, “What is this for?” or “Why do we have to learn this?”

Science, Technology, Math and Engineering teachers know this, probably, but might, in some cases, tend to believe that mere participation in a classroom lab is self-demonstrative. It should be, and probably is; but is it enough to encourage a student to take the next step into more advanced (and difficult) course work? Is it alone enough to convince a student to make a STEM class a center pivot for a career, overriding the other opportunities in other subject areas that may beckon?

Providing these structured opportunities is our business at NJAS. We promote competition not to cull out losers from winners, but to increase the excitement and intensity of the practice of science and engineering. We promote science fairs to help students learn to communicate (which

involves listening and research and well as verbal presentations). We can debate judging decisions and methodology, appropriateness of awards and recognition and so forth, but we are not about strife, we are about providing opportunities for all students to be winners in the process of self-education.

Aurietha M. Hoelsing, President/State Coordinator  
Nebraska Junior Academy of Sciences

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: Martin Hulce

NATS President: Joe Myers

NJAS President: Aurietha Hoelsing

NAS Executive Secretary: Cecelia Dorn

Nebr. Sci. News Editor: Cecelia Dorn

Membership information can be obtained by writing to P.O. Box 880339, Lincoln, NE 68588-0339

E-mail: [nebacad@unl.edu](mailto:nebacad@unl.edu) Telephone: (402) 472-2644

Website: [www.neacadsci.org](http://www.neacadsci.org) Donations are tax deductible.

## HIGH SCHOOL AND COLLEGIATE SCHOLARSHIP NOTIFICATION

It’s time again to think about scholarships for the coming year. The Nebraska Academy of Sciences offers six scholarships for high school seniors varying from \$100 to \$1000. Two scholarships are also available to college juniors or seniors majoring in a natural science. The collegiate scholarship is \$3000, ½ paid at the beginning of each semester. High school scholarship application deadline is March 1; the collegiate deadline is February 1.

Please consider applying for a scholarship. Information is available on the Academy website: <http://www.neacadsci.org>.

Click on NAS and then click on the Grants and Scholarships link on the left side of the screen. You can also contact the Academy office for information at 402/472-2644 or email: [nebacad@unl.edu](mailto:nebacad@unl.edu).

## Hurricanes and Adventures

Your dose of weather and Earth science from  
NOAA and NASA

It's hurricane season, and you can learn lots about these powerful tropical storms on [SciJinks](http://SciJinks). We have a new hurricane simulator, as well as articles about how hurricanes form and what the Coriolis effect is. And don't forget to check out the latest edition of our adventure comic series. Is Bot-A Bing going to be okay?!



It affects weather patterns, it affects ocean currents, and it even affects air travel. As important as the Coriolis Effect is, many have not heard about it, and even fewer understand it.



Explore the relationship between sea surface temperatures and hurricane strength in this hurricane simulator.

## COLEOPTERISTS YOUTH INCENTIVE AWARD

This is a small grants program aimed at encouraging youth (grades 7-12 only) to become involved with study of the most diverse organisms on earth - the **beetles** (one out of every 4 animal species is a beetle!).

Application deadline is November 1, 2015.

If you have any questions or would like any further information, please feel free to contact: Entomology, NHB, MRC 165; P.O. Box 37012; Smithsonian Institution; Washington, D. C. 20013-7012 or by phone (202-633-0990), FAX (202-786-2894), or Email ([furthd@si.edu](mailto:furthd@si.edu)). Also, please look at the Web Page of The Coleopterists Society

[http://www.coleopsoc.org/default.asp?Action=Show\\_SocietyInfo&ID=Youth](http://www.coleopsoc.org/default.asp?Action=Show_SocietyInfo&ID=Youth)

This is an ongoing program, so even if you are not currently directly involved with youth science education or state science/biology education programs, please forward this information to the appropriate person in your region or organization who is actively involved in such educational programs.

## 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 at the website by members. 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](http://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.

## REMINDERS

- 1) Register to attend the 2015 NATS Fall Conference. [Fall Conference Flyer](#) 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 a conference within a conference on Saturday for [elementary](#) teachers. [Elementary Flyer](#)
- 2) Register for the [Thursday workshop](#).
- 3) Register for the [Elementary Conference](#) within a conference on Saturday Sept 26<sup>th</sup>.
- 4) Apply for a [Pre-Service](#) or [New Teacher](#) Scholarship to attend the NATS Fall Conference.
- 5) The next Public Information and Education mini-grant deadline is October 9<sup>th</sup>. Grants are awarded in any amount up to \$3000.00. Be sure to submit your applications, the granting period will run from December 12, 2015 through December 12, 2016.
- 6) [NSTA Regional Convention: Kansas City, December 3-5](#)



## FALL CONFERENCE SCHOLARSHIPS

Each fall, the Nebraska Association of Teachers of Science offers scholarships to attend our fall conference to pre-service and first year teachers. We would like to encourage all pre-service teachers, current student teachers, and teachers in their first through third year of teaching to apply. A detailed letter and a copy of the application has been sent to universities and ESUs. For more information regarding this opportunity or questions, please contact Jodi Bahr at [jbahr@harvardcardinals.org](mailto:jbahr@harvardcardinals.org). We hope to see many new faces at the conference this year. Scholarship forms are available on the NATS home page.



### GOODBYE TO A GREAT FRIEND OF NATS

James A. Rynearson, 61, from Lincoln, died peacefully at home on Sunday, March 29, 2015 after a brief battle with cancer. Jim was a great friend and tireless volunteer with NATS and NAS. He served as president of NATS in 1991-92 and of NAS in 2007-08, as well as two terms on the NATS board, first in the mid 80s and then again 2013-15. He was the Presidential Awardee for Excellence in Science Teaching in 2005.

His enthusiasm for exciting students in the classroom with physics demonstrations and probing questions set a standard for his peers and mentees. Outside of the classroom, Jim sponsored the Lincoln High Science Olympiad team and individual science fair projects. He was a USHL referee, sustaining his passion for the game throughout his life. He was frequently seen riding his bike around Lincoln. But most of all, Jim was known for his smile, wit, and his ability to connect with people.

Jim was born on October 2, 1953 in Detroit to Dr. Jack and Nancy (Lane) Rynearson. He grew up in Michigan and graduated from Grand Blanc High School in 1971. He went on to graduate from Michigan State University in 1977 and Kearney State College with a Masters Degree in science education in 1985.

On July 14, 1979 Jim married Kathie Miller in Minden. Jim was a science educator for 33 years in Nebraska. He taught at Laurel-Concord Schools, Johnson-Brock Schools and for 21 years Jim taught at Lincoln High School. He spent the past five years of his career working at the University of Nebraska helping to guide future science teachers. Jim never lost his love for science or his enthusiasm for teaching and learning. Jim was an active member of St. John the Apostle parish and a Fourth Degree member of the Knights of Columbus.

### GROW EAT LEARN – Request for Proposals

STEM Engagement at the Nebraska State Fair, soliciting exhibits geared toward 3-5 grade students. Open to all organizations in Nebraska. Contact Lindsey Sabatka at 402-472-2805 or email [sfstem@unl.edu](mailto:sfstem@unl.edu). Submit your information at <http://go.unl.edu/statefairstem>.

### FORMS, FORMS, FORMS

Check out the following pages for more information about the NATS Fall Conference, “Science Runs Through It”, the elementary conference within a conference which highlights K-6 sessions on Saturday with the theme of “Promoting Literacy Through Science” and think about signing up for the Thursday workshop.

The NAS Call for Papers for the 2016 Annual Meeting is included as well as the listing of Section Chairs. We will be initiating a new section next spring highlighting the Environmental Sciences. Please consider submitting a paper.

Photocopy this form as needed



Please TYPE or Print Legibly in INK

This conference is partially supported by NSEA and NSTA

Early Registration, 2015 Conference Dates are Sept 24- Sept 26

SCIENCE RUNS THROUGH IT

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

Name, School, ESU, Home Address, School Address, 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 2014 and September 2015 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 4)

- [\$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 4)

- [\$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 24th 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 \$135 (Bedding and Towels Included)
[ ]Cabin \$ 115 (Bring Your Bedding And Towels)

- [ ]Thursday Night Lodge \$ 45
[ ]Thursday Night Cabin \$ 30

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

- [ ]Friday Night Lodge \$ 45
[ ]Friday Night Cabin \$ 30

MEALS ONLY (CHECK THE MEALS YOU WILL NEED)

- [ ]Thursday Steak Fry \$14.00
[ ]Friday Dinner \$10.00

- [ ]Friday Breakfast \$7.00
[ ]Saturday Breakfast \$7.00

- [ ]Friday Lunch \$8.00
[ ]Saturday Lunch \$8.00

Complementary T-Shirts available on site: Small \_\_\_\_\_ Medium \_\_\_\_\_ Large \_\_\_\_\_ Extra Large \_\_\_\_\_ 2xl \_\_\_\_\_

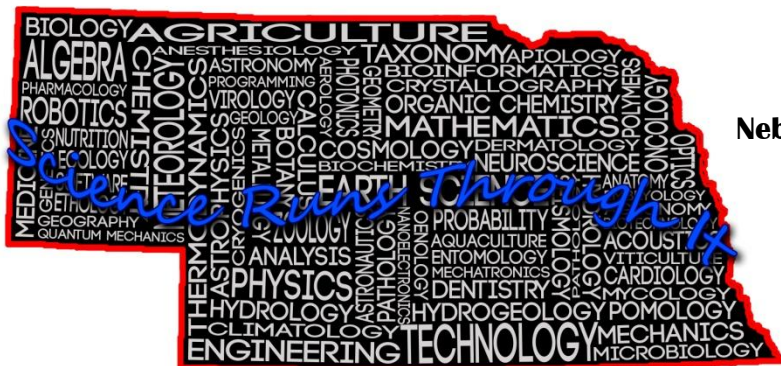
Return forms to: nebacad@unl.edu, or NATS, 302 Morrill Hall, 14th and U Street, Lincoln, NE 68588-0339, fax 402-472-8899, questions 402-472-2644

For Lodging Assignment Purposes Only [ ]Female [ ]Male

[ ]Special accommodations required, handicapped, etc. Specify \_\_\_\_\_

Registration Total \$ \_\_\_\_\_ Organization to be Billed \_\_\_\_\_
Lodging and Meals Total \$ \_\_\_\_\_
TOTAL \$ \_\_\_\_\_ P.O. No. \_\_\_\_\_ Do you need a Receipt?
Amount Enclosed \$ \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_

CREDIT CARD PAYMENT [ ]Master Card [ ]Visa [ ]Discover
Card Number \_\_\_\_\_
3 Digit Security Code (on back of card) \_\_\_\_\_ Expiration Date \_\_\_\_/\_\_\_\_
Name on card \_\_\_\_\_
Address of cardholder \_\_\_\_\_



## Register\* TODAY for the 2015 NATS Fall Conference

Nebraska Association of Teachers of Science

**Camp Calvin Crest – Fremont, NE  
September 24-26, 2015**

\*Registration includes a conference t-shirt  
featuring the *Science Runs Through It* logo.

***Science Runs Through It*** is the theme for the 2015 NATS Fall Conference at Camp Calvin Crest in Fremont, Nebraska. Just as the Platte River flows through Nebraska, science runs through our state: from Harrison to Falls City, Benkelman to Ponca, Springview to Alma, and Kimball to Omaha, ***Science Runs Through It***

**Sessions** for Elementary, Middle, and High School will be presented in \*\* Biology/Life Sciences \*\* Chemistry \*\* Earth/Space Science \*\* Physics/Physical Science \*\* Environmental Science \*\* Elementary Science \*\* Technology \*\* Integration \*\* Inquiry \*\* Best Practices \*\* Standards-Based Instruction \*\* Assessment \*\*

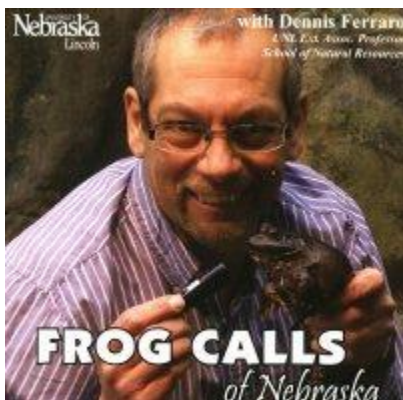
**Highlights include:** \*\* Thursday afternoon 3-hour workshops \*\* Thursday Evening Steak Fry \*\* Thursday Evening Maiben Lecture \*\* Friday and Saturday Brogie Brothers Bird Walk \*\* Friday Morning Keynote Address \*\* Friday Full Day of K-12 Sessions \*\* Friday Afternoon Chemistry Demo \*\* Saturday morning K-12 Sessions \*\* Saturday Full Day Conference for Elementary Teachers -- *Promoting Literacy through Science* \*\*

### ***Senior High Thursday Afternoon Workshop (1:30-4:30pm)***

#### **Wonder Wheat, Monster Mites, and Virulent Viruses**

**Douglas Golick, Ph.D.**, Department of Entomology, UNL; **Gary Hein, Ph.D.**, Department of Entomology, UNL; **Justin McMechan**, DPH Graduate Student, UNL  
Wheat is one of Nebraska's major crops. Learn about wheat and wheat viruses transmitted by the Wheat Curl Mite. Session attendees will focus on viewing live plants and mites and will conduct two hands-on investigations. Classroom materials will be distributed to participants free of charge. Maximum: 15 Participants

Register at: <http://nebraskaacademyofsciences.wildapricot.org/NATS> **click-on** Workshop Registration



### ***Thursday Evening Maiben Lecture (7:00-8:00pm)*** ***Herps of Nebraska***

**Dennis Ferraro, Ph.D.**, Nebraska's Expert Herpetologist  
Dr. Ferraro is Professor of Practice in the School of Natural Resources, University of Nebraska-Lincoln (UNL). His interest in herpetofauna began when he was a child in Connecticut. Today, he uses his passion to teach Herpetology and run UNL's Herpetology Lab. This lab keeps snakes, turtles, and other herpetofauna for research and public education. Professor Ferraro's research includes: prairie rattlesnake conservation, monitoring the range of Nebraska's native species, overseeing student research and outreach projects, and producer of the audio CD *Frog Calls of Nebraska*. <http://snr.unl.edu/herpneb/>

**Friday Morning – Keynote Address (8:15-9:50am)**  
**Platte Basin Timelapse Project**

Mike Farrell, Executive Producer

Valerie Cuppens, Educational Media Producer

Through the tremendous power of photography and storytelling, the Platte Basin Timelapse project has developed educational media for teachers and students to help use in understanding more about our water resources. Together, with teachers, lesson plans and learning objects have been created to enhance science learning. <http://plattebasintimelapse.com> Funded by the Nebraska Environmental Trust

# PLATTE BASIN TIMELAPSE



***The Friday Afternoon Demo Show***  
***The Chemistry of Teaching***

**Bob Becker**, 2012 Presidential Award for Excellence in Science and Mathematics Teaching, 2011 Missouri Teacher of the Year

Mr. Becker teaches honors chemistry at Kirkwood High School in Missouri. He has published two books of demonstrations, available with a videotape through Flinn Scientific and served on the Flinn Foundation traveling chemistry team. Bob will present 10 cool demos that not only illustrate chemical principals, but that also highlight the presenter's philosophy of teaching. Don't let the title scare you ... this is a dynamic, entertaining, and intellectually stimulating show suitable for all.

***K-12 General Science Session – 1 + 1 = 3***

**Bob Feurer**, 1994 Presidential Award for Excellence in Science and Mathematics Teaching, 2011 Nebraska Teacher of the Year

Mr. Feurer spent his 33+ year teaching career at North Bend Central High School in Nebraska teaching biology and global science. Bob is a classroom superhero who aims to create “seeing eyes” in his students by going above and beyond his daily lessons. Working to understand the learner in your room is a key component of teaching science and getting the most out of instruction. This session will shed some light on the social and emotional side of learning, how the brain works in the learning process, and how we can get the most out of and into our learners' heads.



**Coming SOON – ConfPlus**

The NATS Conference Program is going digital!!

Download the ConfPlus, Inc. App to bring the NATS 2015 Fall Conference to your mobile device. We will let you know when the conference program goes LIVE!



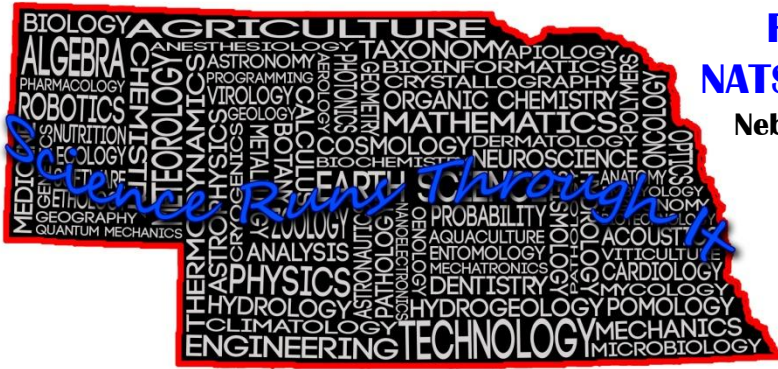
**Register** on line: <http://nebraskaacademyofsciences.wildapricot.org/NATS> -- Click on *Events*

**Conference scholarships** for pre-service and new teachers: <http://nebraskaacademyofsciences.wildapricot.org/NATSFC>

**Program Chair** Lee Brogie, NATS President-elect [lebrogi1@waynebluedevils.org](mailto:lebrogi1@waynebluedevils.org) 402-369-0771

**Follow us for conference updates:**  **Nebraska Association of Teachers of Science**  **#NATS\_Science**





**Register\* TODAY for the 2015  
NATS Elementary Science Conference**

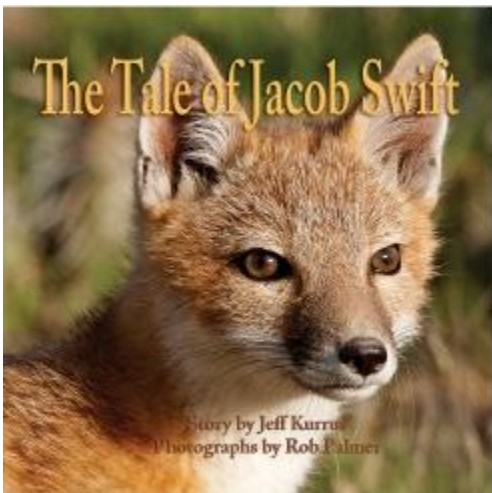
Nebraska Association of Teachers of Science

**Camp Calvin Crest – Fremont, NE  
Saturday, September 26, 2015**

\*Registration includes a conference t-shirt  
featuring the *Science Runs Through It* logo.

**Promoting Literacy through Science** is the theme for the 2015 NATS **Elementary Science** Conference at Camp Calvin Crest in Fremont, Nebraska. This one-day conference is specifically designed for the K-6 teacher. **NOTE: Registering for the full conference, automatically registers you for the one-day conference.**

**Highlights include:** \*\*Keynote Speaker \*\* Coffee and Rolls \*\* Breakout Sessions \*\* Lunch \*\* Door Prizes \*\*  
\*\*District Registration Group Discounts: 1- \$78 – 2 to 10-\$70each – 10+ \$62each (costs include lunch)\*\*



**Saturday Morning – Keynote Address—8:00am-9:30am  
The Tale of Jacob Swift**

Jeff Kurrus, Author

Mr. Kurrus, editor for Nebraskaland Magazine, uses photographs to come up with writing ideas. Collaborating with photographer Michael Forsberg, *Have You Seen Mary?* featuring the sandhill crane migration along the Platte River was published in 2013. His latest children’s picture book, *The Tale of Jacob Swift*, is illustrated with Rob Palmer’s photographs, and features the swift fox and short grass prairie. Jeff has graciously donated 50 books for door prizes and will have books available for purchase during a book-signing session immediately following his keynote address. <http://haveyouseenmary.com/>

**\*\*Breakout Sessions – 9:40am-3:10pm\*\***

**Coffee Stirrer Structures and Soap Films**

**Bob Becker**, 2012 Presidential Award for Excellence in Science and Mathematics Teaching  
Coffee stirrers and twist-ties can be used to construct a limitless assortment of geometric frames. Dipping these frames in soapy water leads to an exploration in the field of soap film surfaces.



**The Art and Science of Multidisciplinary Teaching and Learning**

**Tricia Parker**, Language Arts Education Director, Nebraska Department of Education, @NDE\_ELA

This session will demonstrate the natural ties between the Nebraska standards in science and English language arts and will provide teachers with ideas, resources, and inspiration for the blending of science and literacy instruction in their classrooms.

## 1 + 1 = 3

**Bob Feurer**, 1994 Presidential Award for Excellence in Science and Mathematics Teaching,  
2011 Nebraska Teacher of the Year

Working to understand the learner in your room is a key component of teaching and getting the most out of instruction. This session will shed some light on the social and emotional side of learning, how the brain works in the learning process, and how we can get the most out of and into our learners' heads.



Picture from: Teach123-school.blogspot.com

### ***Using Science as the Context for Elementary Reading and Writing***

**Lisa Ottman**, K-6 Reading/Language Arts Curriculum Specialist, Lincoln Public Schools

**James Blake**, K-12 Science Curriculum Specialist, Lincoln Public Schools

This is a discussion with two curriculum specialists who partnered to develop science as the context for reading and writing in elementary. Benefits for science include gaining more valuable minutes for science in elementary. Reading/language arts benefits by using a context that engages students. Everyone wins! Participants will be able to experience model lessons in grades K-5 that illustrate research based practice and examples of how to encourage this connection.

### **Supporting Students' Learning about Water: Model-Based Scientific Inquiry**

**Cory Forbes**, School of Natural Resources, Science Literacy Coordinator, UNL

**Tina Vo**, School of Natural Resources, UNL

**Tonya Bernadt**, School of Natural Resources, Education & Outreach Specialist, UNL,

Water is an important topic that spans the K-12 science curriculum. However, learners possess many scientifically inaccurate ideas about water, particularly elementary students. Scientific modeling, a core scientific practice emphasized in the Next Generation Science Standards, affords students opportunities to reason about water as part of larger systems.



### **Coming SOON – ConfPlus**

The NATS Conference Program is going digital!!

Download the ConfPlus, Inc. App to bring the NATS 2015 Fall Conference to your mobile device. We will let you know when the conference program goes LIVE!



**Register** for the Elementary Science 1-day conference using the attached form or download forms at:

<http://nebraskaacademyofsciences.wildapricot.org/NATS> **click-on** Elementary Conference Registration.

**Program Chair** Lee Brogie, NATS President-elect [lebrogi1@waynebluedevils.org](mailto:lebrogi1@waynebluedevils.org) 402-369-0771

**Follow us for conference updates:**  **Nebraska Association of Teachers of Science**  **#NATS\_Science**





**NAS/NATS MEMBERSHIP APPLICATION (If registering for FC  
or the spring Annual Meeting don't complete an additional membership form.)**

Name (Dr./Prof./Ms./Miss/Mrs./Mr.)

Preferred/Credit Card Mailing Address: (No. and Street)(City, State)(Zip Code)

Home Phone:

Credit Card No:

Work Phone:

Credit Card Exp :

Credit Card 3 digit code:

Work Address:

e-mail Address:

Fields of Scientific Research or Interest:

Publications available on line to paid members. Login with your email address and choose a password

**Division Affiliation:** Collegiate/General      NATS      NJAS

**\*Class of membership desired (check one)**

**Annual Dues**

<input type="checkbox"/> Regular	\$45
<input type="checkbox"/> Collegiate (Full-time student)	\$10
<input type="checkbox"/> Life (One-time payment or 5 @ \$100)	\$500
<input type="checkbox"/> Sustaining	\$46 - 50
<input type="checkbox"/> Contributing	\$51 - 100
<input type="checkbox"/> Patron	\$101 - 200
<input type="checkbox"/> Sponsor	\$201 - 1000
<input type="checkbox"/> Benefactor	Over \$1000
<input type="checkbox"/> I wish to make a contribution of	\$ _____
<input type="checkbox"/> Silver Institutional/Corporate	\$ 200
<input type="checkbox"/> Gold Institutional/Corporate	\$ 500
<input type="checkbox"/> Platinum Institutional/Corporate	\$ 1000

(All contributions to the Academy are tax-deductible.)

\*Make check payable to, *The Nebraska Academy of Sciences, Inc.*

Please send application and check to:  
**The Nebraska Academy of Sciences, Inc.**  
302 Morrill Hall, 14th and U Streets  
Lincoln, NE 68588-0339  
Web site: <http://www.neacadsci.org>  
402-472-2644



The Academy, NATS, NJAS and the Affiliated Societies of the Academy promote the DEVELOPMENT OF SCIENTIFIC RESEARCH AND SCIENCE EDUCATION THROUGHOUT NEBRASKA. Science education includes grades kindergarten through 12th, colleges (including community colleges), and universities.

Your membership and participation in the activities of The Nebraska Academy of Sciences make an important contribution to the development of science in the state.

The work of the Academy depends upon your membership and support. Please consider upgrading your membership in the Academy or making a special contribution when you renew your membership.

## **ACADEMY PUBLICATIONS**

The Academy publishes a science journal, *Transactions of the Nebraska Academy of Sciences*. As of 2012 the *Transactions* is published digitally on the University of Nebraska Digital Commons. The *Transactions* publishes original research and synthesis in all areas of science. Academy members are not assessed page charges except for unusually long papers or color plates. Manuscripts are reviewed by at least two reviewers. Articles can be published as soon as they have been reviewed due to the new agreement with Digital Commons.

Members also receive the *Program and Proceedings of the Nebraska Academy of Sciences* once a year, containing the program and all abstracts of papers presented at the annual spring meeting of the Academy.

The Academy's *Newsletter* is published four times a year and is sent to all members via email and is also available to the membership on the member page of the website.

## **MEMBERSHIPS**

Any person, institution or organization may be admitted to membership in the Academy by completing an application form and paying appropriate dues.

*Regular Members* are engaged in science as researchers or teachers or are interested in the promotion of science and science education.

*Collegiate Members* are graduate and undergraduate students from universities and colleges who belong to the Collegiate Academy.

*Life Memberships* are available to individuals who pay a fee of \$500 (in one or five installments). Life Members retain their memberships and are exempt from annual dues.

*Emeritus Memberships* are available to Regular Members who are sixty-five years or older, and who have been in good standing for twenty or more years, not necessarily consecutive. They also shall be exempt from annual dues.

*Institutional/Corporate members* are entitled to submit articles for publication and have booths at the Annual Meeting.

*Sustaining Members* pay memberships of \$46 to \$50.

*Contributing Members* pay memberships of \$51 to \$100.

*Patron Members* pay memberships of \$101 to \$200.

*Sponsor Members* pay memberships of \$201 to \$1,000.

*Benefactor Members* pay memberships greater than \$1,000.

*Silver Institutional/Corporate Memberships* are \$200.

*Gold Institutional/Corporate Memberships* are \$500.

*Platinum Institutional/Corporate Memberships* are \$1000.



THE NEBRASKA ACADEMY OF SCIENCES, INC.  
(Founded January 30, 1880)  
125th ANNUAL MEETING TO BE HELD  
at  
NEBRASKA WESLEYAN UNIVERSITY  
50TH and ST. PAUL, LINCOLN, NEBRASKA

FRIDAY, APRIL 22nd, 2016

## "Call for Papers"

**ABSTRACTS, FORM, AND FEES ARE DUE TO SECTION CHAIRPERSONS  
FEBRUARY 5, 2016**

INDIVIDUALS ARE INVITED TO SUBMIT AN ABSTRACT OF ORIGINAL RESEARCH OR SYNTHESIS OF PRIMARY RESEARCH/LITERATURE FOR CONSIDERATION BY ONE OF THE SECTIONS FOR INCLUSION IN THE PROGRAM OF THE ANNUAL MEETING OF THE NEBRASKA ACADEMY OF SCIENCES. YOU WILL RECEIVE EMAIL NOTIFICATION OF YOUR ABSTRACT'S STATUS.

Annual Meeting Presenters may also want to consider submitting their complete research articles for review and possible publication in the Transactions of the Nebraska Academy of Sciences. Papers from all sections are eligible. Contact the Academy office for publication information.

**SECTION CHAIRPERSONS FORWARD ALL DOCUMENTS TO THE ACADEMY, [nebacad@unl.edu](mailto:nebacad@unl.edu) BY FEBRUARY 20th. A HARD COPY OF THE ABSTRACT MUST BE INCLUDED WITH THE REGISTRATION FORM. FORMATTING INSTRUCTIONS ARE AVAILABLE ONLINE AT <http://www.neacadsci.org>,**

Click on NAS, then Information

OR FROM:

THE NEBRASKA ACADEMY OF SCIENCES  
302 MORRILL HALL, 14TH AND 'U' STREETS,  
LINCOLN, NE 68588-0339  
TELEPHONE (402) 472-2644

**1. EACH ABSTRACT MUST BE ACCOMPANIED BY A \$70.00 REGISTRATION FEE (\$15.00 FOR STUDENTS—COPY OF VALID STUDENT ID MUST BE ENCLOSED) FOR THE PERSON PRESENTING THE PAPER. PLEASE COMPLETE CONTACT INFORMATION ON THE REGISTRATION FORM ACCURATELY AND LEGIBLY. FORM IS AVAILABLE ON OUR WEBSITE: <http://www.neacadsci.org>**  
Click on NAS, then Click on Information

**2. MAKE CHECKS PAYABLE TO THE NEBRASKA ACADEMY OF SCIENCES.**

**3. AUTHORS SUBMITTING MORE THAN ONE ABSTRACT SHOULD PAY ONLY ONCE.**



## 2015-2016 NEBRASKA ACADEMY OF SCIENCES PROGRAM COMMITTEE

Area code 402

<b>Section</b>	<b>Chairperson</b>	<b>Address</b>	<b>unless listed</b>
Program Chairman & Proceedings Editor	Jim Carr	NAS, 302 Morrill Hall, Lincoln, NE 68588-0339 <a href="mailto:nebacad@unl.edu">nebacad@unl.edu</a>	472-2644 O
Aeronautics & Space	Scott Tarry Michaela Lucas	NASA NE Space Grant, 6001 Dodge St, CB 041, Omaha 68182-0589 <a href="mailto:mlucas@unomaha.edu">mlucas@unomaha.edu</a>	554-3772 O
Anthropology	LuAnn Wandsnider	UNL, Dept of Anthropology, Lincoln 68588-0368 <a href="mailto:lwandsnider1@unl.edu">lwandsnider1@unl.edu</a>	472-8873 O
Applied Sci & Technol	Mary Ettel	Wayne State College, 1111 Main St, Wayne, 68787 <a href="mailto:maettel1@wsc.edu">maettel1@wsc.edu</a>	375-7342 O
Biological & Medical Sciences	Annemarie Shibata	Creighton Univ, Dept of Biology, Omaha 68178-0103 <a href="mailto:annemarieshibata@creighton.edu">annemarieshibata@creighton.edu</a>	280-3588 O
General Chemistry	Joshua Darr	UNO, Durham Sci 331, Omaha 68182 <a href="mailto:jdarr@unomaha.edu">jdarr@unomaha.edu</a>	554-2653 O
General Physics	Adam Davis	Wayne State College, 1111 Main St, Wayne, 68787 <a href="mailto:addavis1@wsc.edu">addavis1@wsc.edu</a>	375-7339 O
Earth Sciences	Jennifer Balmat	556 Ridgeview Rd, Chadron 69337 <a href="mailto:jbalmat@csc.edu">jbalmat@csc.edu</a>	308-432-6483 O
Environmental Sciences	Barbara Hayford	Wayne State College, 1111 Main St, Wayne, 68787 <a href="mailto:Bahayfo1@wsc.edu">Bahayfo1@wsc.edu</a>	374-7338 O
History & Philosophy of Science	Richard Webb	Union College, Division of Sci & Math, Lincoln 68506 <a href="mailto:riwebb@ucollege.edu">riwebb@ucollege.edu</a>	486-2515 O
Teaching of Science & Mathematics	Josef Kren	Bryan LGH Health Sciences, 5035 Everett, Lincoln 68506 <a href="mailto:josef.kren@bryanlgh.org">josef.kren@bryanlgh.org</a>	481-4968 O
Junior Academy	Aurietha Hoelsing	7174 N 82 <sup>nd</sup> Ave, Omaha 68122 <a href="mailto:beton@cox.net">beton@cox.net</a>	
Collegiate Academy (Biology Section)		NE Wesleyan Univ., 5000 St Paul, Lincoln 68504 <a href="mailto:nebacad@unl.edu">nebacad@unl.edu</a>	472-2644 O
(Chemistry/Physics)	David Treichel	NE Wesleyan Univ., 5000 St Paul, Lincoln 68504 <a href="mailto:dat@nebrwesleyan.edu">dat@nebrwesleyan.edu</a>	465-2260 O
	Nathaniel Fackler	<a href="mailto:nfackler@nebrwesleyan.edu">nfackler@nebrwesleyan.edu</a>	465-2260 O
Local Arrangements Chair	Bob Fairchild	NE Wesleyan Univ., Physics Dept, Lincoln 68504 <a href="mailto:rwf@nebrwesleyan.edu">rwf@nebrwesleyan.edu</a>	465-2253 O
Academy Exec Secretary	Cecelia Dorn	302 Morrill Hall, 14th & U St, Lincoln 68588-0339 <a href="mailto:nebacad@unl.edu">nebacad@unl.edu</a>	472-2644 O