



New Mexico Academy of Science

Win a fabulous vacation week and more...

Buy raffle tickets—\$40/each! Drawing November 15th 2008
Proceeds support the New Mexico Academy of Science

New Mexico Academy of Science - Annual Symposium

Plan to attend a free stage performance
by noted Darwin actor Brian “Fox” Ellis
of Fox Tales International
(www.foxtalesint.com).



*Charles Darwin And
The Voyage Of The Beagle*

Imagine an evening at London’s Royal Geological
Society, with the affable, young Charles Dar-
win.

Storyteller and science teacher, Brian “Fox” Ellis
steps into Darwin’s shoes. Equal parts dramatic
storytelling, stand-up comedy, and show and tell,
the audience is immersed in the intellectual world
of one of history’s greatest scientific minds.

Ellis brings a wide array of fossils, insects, plants
and study skins so the audience can experience
the discoveries of Darwin with hands-on analysis.

**November 15, 2008
2:00 - 4:00 PM
@Domenici Education Center
Auditorium
University of New Mexico
Health Sciences Center**

*Event Sponsored by University of New Mexico Health
Sciences Center and School of Medicine Office of
Research.*

Purchase this raffle ticket....
or the one on the back page...
or both (or offer them to friends!)

NMAS Raffle Ticket 2008

Grand prize - a vacation week of your choosing at Mayan Palace or RCI resorts
(airfare not included). 2nd prize - Museum tickets for four. - 3rd prize gift certifi-
cate to UNM bookstore. Drawing is on November 15. Need not be present to
win.

Please participate in our fundraiser and send
one or more tickets and your check for \$40
for each ticket to:

NMAS Treasurer:
Glenn Kuswa
96 Juniper Hill NE
Albuquerque, NM 87122

Name: _____

Address: _____

Phone: _____

Email: _____

Purchase one or more tickets yourself or give them to friends to
purchase. Receipt will be mailed to purchaser. Photocopies of
tickets are valid, but each ticket must be accompanied by \$40.

Keep this portion of the ticket

Name: _____

Address: _____

Phone: _____

Email: _____

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NMAAS MEMBER NEWS...

Return the NMAAS Raffle Tickets in this Newsletter

...with your check for \$40
for each ticket...

Grand prize - a vacation week of your choosing at Mayan Palace or RCI resorts (airfare not included). 2nd prize - Museum tickets for four. 3rd prize - gift certificate to UNM bookstore. Drawing is on November 15. Need not be present to win.

Help keep NMAAS strong by participating in this fundraiser.

**Please Renew your NMAAS
Membership for 2008**

**Use the renewal form in
this newsletter and renew
TODAY!**

NMAAS Newsletter
Volume 94, no. 2
August, 2008

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NEW MEXICO ACADEMY OF SCIENCE

Founded in 1902 to foster scientific research and scientific cooperation, increase public awareness of the role of science in human progress and human welfare, and promote science education in New Mexico.

The Academy has been in continuous existence since 1915, and became formally associated with the New Mexico Museum of Natural History and Science in 1995.

Affiliated with the American Association for the Advancement of Science (AAAS)

Member of the National Association of the Academies of Science (NAAS)

DID YOU KNOW?

Although Charles Darwin's most famous book is *On The Origin of Species*; he also wrote *Voyage of the Beagle*, *The Descent of Man*, *The Autobiography of Charles Darwin*, and *Charles Darwin's Letters: A Selection, 1825 -1859*.

President's Message – August 2008

Angela Wandinger-Ness

Whether you are a 'science wiz or geek' or someone who just wants to know more about science and how it impacts your life, the New Mexico Academy of Science may have something for you.

Who we are and what we are about...

In its second century, the New Mexico Academy of Science (NMAS) continues to champion scientific research and scientific cooperation—NMAS was founded in 1902 before New Mexico was a state! Informing the public of science in human progress and human welfare, as well as promotion of science education are major goals of the NMAS. The NMAS is member of the National Association of the Academies of Sciences (NAAS) and of the American Association for the Advancement of Science (AAAS). Two New Mexicans have served as Presidents of the NAAS (Dr. Lora Magnum Shields and Dr. David Hsi). The NMAS is led by a 20-member Board with elected officers covering wide ranging disciplines—geology, science education, physics, engineering, biology and natural science, biomedical science, astronomy, and mathematics (<http://www.nmas.org/contacts.html>).

Our 2008 public event...

On November 15th from 2-4 PM the NMAS will host a stage performance by Mr. Brian "Fox" Ellis at the UNM Domenici Education Center auditorium. This free event is open to the public and sponsored by the UNM Office of Research. Bring your students, children and families to witness a dramatic and humorous reenactment of Darwin and his travels aboard the HMS Beagle.

Supporting the NMAS...

The NMAS depends on its loyal members and support from the public to carry out many aspects of its mission "*to foster scientific research and scientific cooperation, increase public awareness of the role of science in human progress and human welfare, and promote science education in New Mexico*". This year we plan a fundraising raffle. Enclosed with this newsletter you will find some raffle tickets that you may purchase yourself or ask others to purchase. The raffle tickets are \$40/each. Our grand prize is a vacation week of your choosing at Mayan Palace or RCI resorts (airfare not included). Additional prizes include a gift certificate to the UNM bookstore and admission for a party of four to one of several New Mexico museums. The drawing will take place on November 15th at the Darwin performance. To purchase raffle tickets: 1) complete and return the ticket(s) with your name, address and phone number; submit payment in the form of a check to the NMAS (\$40/ticket); we will send you a receipt to confirm your entry. You may photocopy the tickets in this newsletter and enter as many times as you wish, or ask your friends or colleagues to enter. You do not need to be present to win.

2008 State NMJAS Paper Competition Winners

Contributed by Lynn Brandvold, Director NMJAS

Cash awards were provided by a grant from Sandia-Lockheed Martin.

Senior Division

First Place

Megan D. Johnson

How We Think, Who We Are: How We Learn

Rio Rancho High School

Rio Rancho, NM

Second Place

Rebecca Alexander

The Journey to Identify Antibiotic Compounds in

New Mexico Lichens

Grants High School

Grants, NM

Third Place

Terry Bell

*Sulfur Spring: An Analysis of Microbiol Life and
the Effects of Water Chemistry and Microenviron-*

ment in a Karst Spring

Carlsbad High School

Carlsbad, NM

Junior Division

First Place

Phillip Lane

Ants Harvest Crackers

Kroogler Middle School

Aztec, NM

Second Place

Christian Fitzgerald

Diamagnetism in Fruits

Fitzgerald Homeschool

Albuquerque, NM

Honorable Mention

Daniel Ahrens

Space Weathering to Blame for Earth Weathering

Aspen Elementary School

Los Alamos, NM

Honorable Mention

Fiona McCrossin

Reactions in Guinea Pigs Correlating to Sounds

Sierra Middle School

Las Cruces, NM

Senior Division

First Place Winner Abstract

How We Think, Who We Are:

How We Learn? Phase IV

Megan Johnson

Rio Rancho High School

Abstract

Methods of learning are a prevalent topic in psychological research. The object of this study was to determine a method by which learning style can be predicted using the explanatory variables gender, handedness, age, family size, birth order, and cerebral dominance. The learning styles studied were visual, aural, reading/writing, and kinesthetic. The sample consisted of 432 students between the ages of 8 and 18 and all data were collected using a survey and series of questionnaires. Cerebral dominance was determined to be the only variable of statistical significance although gender did play a minor role in predicting learning style. Though the data were statistically significant, the regression model produced in the multi-variate analysis proved a poor fit for the data. However, there exists a positive correlation of visual and reading/writing learning with left brain dominance and a positive correlation of aural and kinesthetic learning with right brain dominance. Extensions for this project include replacement of the surveys with performance based assessments to test for strengths rather than preference, refinement of the sample, and incorporation of additional variables.

Rio Grande Chapter

AVS Science & Technology Society Winners

The AVS Science & Technology Society, formerly the New Mexico Chapter of the American Vacuum Society, sends judges and selects its own winners in the paper competition and awards prizes to these winners as well as to their teachers/sponsors. The New Mexico Academy of Science is very grateful for their support.

Senior Division

First Place

Megan Johnson

Rio Rancho High School

School Sponsor: Rob Leeney

Second Place

Rebecca Alexander

Grants High School

School Sponsor: Mary Savacheck

Junior Division

First Place

Gabriel Joachim

Taylor Middle School

School Sponsor: Dr. Lorna Joachim

Second Place

Christian Fitzgerald

Fitzgerald Homeschool

School Sponsor: Alisha Fitzgerald

Lovington School Wins National Award NMAS Helps Students Attend Award Ceremony

*Contributed by Susan Cunningham
Taylor Middle School, Lovington, NM*

The Taylor Middle School (Lovington, NM) Energy Club has been selected by the National Energy Education Departments Youth Award Competition as the *Junior Level School of the Year for New Mexico* and *Junior Level Rookie of the Year* at the national level. The club was invited to attend the National Energy Education Youth Forum Awards Recognition at the Department of Energy on June 20-23 in Washington, DC.

The Taylor Middle School Energy Club's broad goal is to educate peers, parents, and community about energy use and conservation. Approximately twenty-five students participated in the 2007-08 club activities. Two focus goals were created to meet the objective.

The first focus goal was to educate peers, parents, and community about energy use, renewable/non-renewable energy sources, and energy conservation. The "Let Lovington Know" campaign focused on educating community members about energy via posters, brochures, newspaper articles, radio commercials, community electronic announcement board, and asking the community to participate in the "Change a Light, Change the World" challenge. Students educated their peers through demonstrations using Project NEED kits.

The second focus goal was to provide a community service that educates others about energy conservation while helping needy individuals. Student/guardian teams adopted senior citizens or disabled community members as energy buddies. The student/guardian team donated their time to go and change light bulbs and change heater filters for their adopted energy buddy. Students provided their energy buddy with a laminated business card/magnet with contact information. For the first visit, the student/guardian team installed a compact florescent light bulb (bulb furnished by the club) in their energy buddy's home.

Editor's Note: The New Mexico Academy of Science was pleased to help support this award-winning New Mexico school with a travel grant to help students attend the NEED National Energy Conference

DID YOU KNOW?

Charles Darwin did not "invent" the scientific theory of evolution...many naturalists of the time discussed biological evolution. Darwin defined a mechanism of evolution; he wrote: "I have called this principle, by which each slight variation, if useful, is preserved, by the term Natural Selection."

NMAS 2008 Annual Banquet Distinguished Speaker Named

This year's NMAS Distinguished Lecturer will be:

Dr. Melanie Moses

Assistant Professor

Dept. of Computer Science, UNM

presenting

Networks:

***How Exchanges of Energy and Information Shape
the Evolution of Organisms and Societies***

Dr. Moses takes an interdisciplinary approach to studying computation and biology. She has a degree in Symbolic Systems from Stanford University and a Ph.D. in Biology from UNM. Her research interests are the way in which properties of complex systems change with size. Her work includes studies of how networks constrain societies of both ants and humans.

Plan now to attend the 2008 NMAS Banquet
November 15, 2008

Dinner at 6pm followed by Awards and Lecture.
At the NM Museum of Natural History and Science
Albuquerque, NM

National Youth Science Camp 2008 Program Two NM high school seniors selected

Richard E. Nygren, Director, NM-NYSC Program

Each year in the summer following their graduation two NM high school seniors interested in science attend an intense month-long camp for young scientists, with all expenses paid. NMAS administers the NYSC program in New Mexico.

This year, the New Mexico Academy of Science selected as delegates: **Megan Johnson** and **Kevin Wymer**, both from Rio Rancho High School. **Amelia Clement** and **Jayson Lynch** are the alternate delegates.

Students from around the country attend the NYSC in the Monongahela National Forest of West Virginia's Potomac Highlands. Visiting scientists are invited to the camp based on their reputation as leaders in their fields and on their ability to share up-to-date research. Their exciting lectures and the hands-on experiences expose delegates to current work across the spectrum of scientific disciplines. Students have many opportunities to increase their appreciation for the great outdoors and push themselves physically in an extensive outdoor program. Many students establish friendships that last a lifetime.

In 2007, **Alaina Schade** of Fort Sumner High School and **Emily Powell** of Los Alamos High School were the delegates and **Melissa A Hatch** and **Natalie M. Freienmuth**, both of Rio Rancho High School were the alternates.

**Support Science and Science
Education in New Mexico through
the NMAS Endowment**

The NMAS endowment invested amount, now about two years from its inception in 2006, exceeded the \$10,000 mark during June, 2008.

Passing the \$10,000 mark will qualify NMAS to withdraw and use earnings amounting to 5% of the average annual portfolio value. While the financial markets are down, the treasurer will recommend that the board not draw on the endowment, and encourage further investment for future growth.

The endowment is managed by the Albuquerque Community Foundation. The NMAS thanks the many generous individuals who have contributed one or multiple times to the endowment fund, or have given gifts in addition to dues.

Remember that your dues and contributions to the endowment are all tax deductible, as NMAS is a 501 (c) (3) organization registered with the Internal Revenue Service. Arrangements for donations to benefit NMAS and its endowment can also be made through a variety of methods, including trust instruments. For example, a trust can provide a guaranteed income during your life, with NMAS as the beneficiary of the remainder after your death. There are significant tax advantages for some of these gifts. We invite interested Individuals to discuss potential options with their tax advisor, and the NMAS

**STATE OF NEW MEXICO
PUBLIC EDUCATION DEPARTMENT
MATH AND SCIENCE
RECOGNITIONS PROGRAM**

On 5 February 2008, the Public Education Department (PED) Math and Science Bureau and the New Mexico Math and Science Advisory Council (MSAC) presented the (First Annual) Math and Science Day at the Legislature. Speakers included Dr. Robert Eisenstein of MSAC and Dr. Veronica Garcia, Secretary of PED. Mary Jo Daniel, Science Specialist, Math and Science Bureau, PED, presented awards to New Mexico students who had outstanding 2007 NMSBA Scores in Math and Science. The two NM finalists of the Presidential Awards for Excellence in Mathematics and Science Teaching were introduced -- Karl Agar, Santa Rosa H.S. (math) and Jennifer Coughlin, Eldorado H.S., Albuquerque (science).

**NMAS Members...
Nominate a New Mexico Teacher
for the
2008 NMAS
Outstanding Science Teacher Awards**

Please help us to identify the BEST New Mexico science teachers. Fill out this nomination form and return to the address below by October 3.

Nominee:

Name/Title _____
Teaching Position(s) _____
Years teaching experience _____
Department _____ Grade level(s) _____
Name of School _____
School mailing address _____
City _____ New Mexico Zip _____
e-mail _____
School telephone ()- _____
Home telephone ()- _____
Home address _____
City _____ New Mexico Zip _____

Nominated by:

Name/title _____
Mailing address _____
City _____ State _____ Zip _____
e-mail _____
Work telephone _____
Home telephone _____
Association with nominee _____

IMPORTANT! Attach at least a short narrative providing support for the nomination. This should include pertinent information and examples of outstanding teaching qualities of the nominee. Supporting statements seconding the nomination should be attached if they are accompanied by the names, addresses, and telephone numbers of the individuals providing seconding statements. Please do not send videos or other electronic material. **The deadline for the nomination process this year is October 3, 2008** Please mail the completed nomination forms, supporting narrative, and resume to:

Mr. Harry F. Pomeroy, Jr.
NMAS Awards Committee
1512 Kingston Place
Clovis New Mexico 88101
Phone: 575-762-0878
e-mail: francis@plateautel.net

(for "Subject" please use 'NMAS Awards,' so it won't be trashed for "SPAM." Thank you.)

DID YOU KNOW?

Charles Darwin conceived his theory of natural selection in 1838. After 20 years of research and thought, he was writing up his work in 1858 when he received an essay from Alfred Russel Wallace describing the identical idea....prompting immediate joint publication of both of their theories.

Membership Form New Mexico Academy of Science

New Membership [] Renewal 08 [] Membership Year other than 08 [] Publications [] Donation []

Date _____ Name _____

Employer/Firm/Affiliation _____ Title _____

Primary Interest (geology, biology, chemistry, physics, science education, etc.) _____

Mailing Address: _____

Phone _____ FAX _____ email _____

Check if your address is different from that on the mailing label of this newsletter []

NMAS PUBLICATIONS

New Mexico Journal of Science Set of all available pre-1992 back issues	\$10 _____
From Sundaggers to Space Exploration (NMAS/Sigma Xi, 1986)	\$4 _____
Dinosaurs of New Mexico (NMAS Journal v. 32, 1992)	\$10 _____
The Importance of Agricultural Science in New Mexico's Economy (NMAS Journal v. 34, 1994)	\$10 _____
Astronomy in New Mexico: Past, Present and Future (NMAS Journal v. 35, 1995)	\$10 _____
New Mexico's Natural Heritage: Biological Diversity in the Land of Enchantment (NMAS Journal v. 36, 1996)	\$10 _____
Environmental Management: Current and Future Needs (NMAS Journal v. 37, 1997)	\$10 _____
Water Resource Issues in New Mexico (NMAS Journal v. 38, 1998)	\$10 _____
Ensuring Sustainable Development of Arid Lands Through Time (NMAS Journal v. 39, 1999)	\$10 _____
NMAS Journal v. 40, 2000	\$10 _____
NMAS Journal v. 41, 2001	\$10 _____
NMAS Journal v. 42, 2002 (Centennial CD)	\$10 _____
NMAS Journal v. 43, 2003	\$10 _____
Science on the Border (NMAS Journal v. 44, 2006)	\$10 _____
Subtotal:	\$ _____
+ Handling:	\$ 2.00
TOTAL:	\$ _____

Membership Class (check one)

- [] Member \$25/year
- [] Student \$15/year
- [] Subscription \$30/year
(Libraries only)
- [] Contribution to the \$ _____
NMAS Endowment

Membership Subtotal: \$ _____
Donation Subtotal: \$ _____
Publication subtotal: \$ _____

Total: \$ _____

Membership includes 3 newsletters. and occasional special Journal of Science volumes (sent to life members and members who have paid their annual dues during the volume's year of publication).

Send check for membership and/or publications and donations, payable to NMAS, to:
New Mexico Academy of Science
1801 Mountain Rd. NW
Albuquerque, NM 87104

Please...consider making a donation to the NMAS Endowment to support our science education programs!

NMAS Newsletter
Volume 94 no. 2
August, 2008

NMAS Raffle Ticket
2008

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**NEW MEXICO
ACADEMY
OF SCIENCE** | **Newsletter**

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