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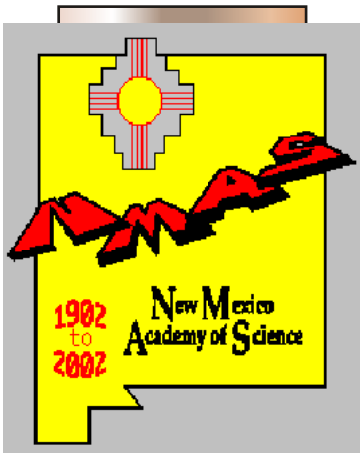
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## New Mexico Academy of Science is 100 Years Old!

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# New Mexico Academy of Science

### Centennial Year Celebration

This year, the New Mexico Academy of Science celebrates its centennial year. The first official meeting of the Academy was held in Las Vegas, NM, on December 22, 1902; a decade before New Mexico was granted statehood.

Throughout 2002, the Academy will be celebrating, with special events and special news items.

We would like to hear from long-time NMAS members and previous officers, as well as from former and current students and teachers whose lives have been changed by the Visiting Scientist, Jr. Academy, and Outstanding Teacher Programs. Help us celebrate this year by sharing your memories and histories. Send your comments to the newsletter editor.

Articles about the NMAS Centennial have appeared in both the Albuquerque Tribune and the Albuquerque Journal. A memorial has been passed by the NM State House of Representatives honoring the Academy on its Centennial. Then memorial was sponsored by Rep. Danice Picraux.

A Centennial Celebration party is being planned for the summer. Watch for details in the June Newsletter.

*See the NMAS President's message on page 3 for a thought-provoking discussion of the way in which science has changed the world since 1902.*

**Happy 100th Anniversary  
to the New Mexico  
Academy of Science  
1902-2002**

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### Academy Names Outstanding New Mexico Teachers for 2001

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**At the NMAS Annual Banquet on November 17, 2001, these teachers were honored as NMAS Outstanding Teacher Awardees.**

**Brenda Brannen**

Roswell, NM

**Outstanding Elementary Teacher  
2001**

**Ervin A. Pfeifle**

Las Cruces, NM

**Outstanding Secondary Teacher  
2001**

*See Page 4 for more information on these  
outstanding teachers!*

### SECOND CALL for 2002 DUES

Please fill out and mail in the membership registration form in this newsletter with your dues payment. Your mailing label carries your membership status: when you have paid your 2002 dues, it will read "2002".

If you believe that there is an error with your status, please contact David Duggan, NMAS Treasurer, at 505-845-8100 or email [duggan@acm.org](mailto:duggan@acm.org)

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

## NMAS Member News.....

**Recent gifts to the NMAS in  
the category "Under \$100"  
have been given by:**

**James Botsford  
Harry and Mona Pomeroy**

**Thank you for your support.  
Monetary donations help to  
support the educational pro-  
grams of the NMAS.**

## Journal Co-Editor Thanked

The New Mexico Academy of Science wishes to extend gratitude to Dr. Ray Kenny for serving as co-editor of the Journal. Dr. Kenny was instrumental in developing the Journal into the open submission, peer-reviewed periodical it is today. He resigned as co-editor during the summer of 2001 when he accepted a position at a university out of state. His contributions to both the NMAS and the journal are numerous and he will be missed.

The *New Mexico Journal of Science* will continue to be published under the same open submission, peer-reviewed format. David Hacker, New Mexico Highlands University, will continue as Journal Editor.

NMAS Newsletter  
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February, 2002

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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.**

## President's Message - February 2002

### Marshall Berman

This year, the New Mexico Academy of Science celebrates its centennial. The idea of forming a statewide scientific organization was first conceived in 1899 by a group of New Mexico scientists. The first official meeting of the Academy was held in Las Vegas, NM, on December 22, 1902 (and published in *Science*, 17 (420):114, 1903). Like many scientific experiments, this one failed after one year. But the Academy was reborn in 1913 when members of the Science and Mathematics Section of the NM Education Association formed the NM Association for Science. The Academy has been in continuous existence since 1915.

How has the world changed since 1902 and what has science contributed? In 1902, the average life expectancy was about 49. The leading causes of death were pneumonia, influenza, and tuberculosis. Penicillin (1928) had not been discovered. There were no treatments for syphilis, diabetes, leprosy, scarlet fever, scurvy, jaundice, or anemia. There were no vaccines for typhoid, polio, or measles. The mentally ill languished in "snake pits."

The first radio was patented in 1902, although scientists had observed radio waves in 1887. Heavier-than-air flight (1903) was still considered impossible by most people. There were no plastics, microwaves, talking movies, televisions, tape recorders, transistors, lasers, radar, VCRs, cell phones, computers, Internet, e-mail, planes, satellites, nuclear energy, or air conditioning. In 1902, the automobile was a toy for the rich. Henry Ford had yet to sell his first production car (1903). The Model T didn't appear until 1908.

Einstein had not yet produced his 1905 publication blitz on special relativity, the photoelectric effect, quantum concepts, and the equivalence of mass and energy. Quantum mechanics had just been conceived but no one claimed paternity. No one had any conception of vitamins, DNA, insulin, cosmic rays, neutrons, or that Earth-bound continents were moving about an inch or two a year, while the most distant stars were moving away faster than 160,000 miles per second!

A "Big Bang" was a loud noise. The only galaxy known was the Milky Way. Pluto (1930) had not been discovered. The word "genetics" had not yet been coined. Information theory did not exist. No one had yet reached the North (1909) or South (1911) poles.

No one imagined that the coming century would bring two world wars that would kill over 58 million soldiers and civilians! Or that Navajo "code talkers" would stymie the Japanese in World War II; or that the war would end sooner because of scientists and engineers working in Los Alamos. It would be decades before Robert Goddard came to New Mexico to launch his new-fangled rockets.

And in 1902, New Mexico was still not a state and would not become one for a decade. Today, New Mexico is home to many world-class scientists and engineers, with two national laboratories and many outstanding universities and schools. New Mexico is first in the nation in spending on research and development as a percent of gross state product.

The Academy: provides visiting scientists to enrich classrooms; maintains a Junior Academy to promote student research for secondary school students, and encourages participation in science fairs; annually recognizes outstanding science teachers; publishes the *New Mexico Journal of Science*; administers the National Youth Science Camp for New Mexico; and supports the Explora Science museum and other science exhibits. But we can do more, and do it better.

Progress in science and technology are essential to our health, standard of living, and our very lives. Science literacy is needed in our families, neighborhoods, communities, the state, and the nation. It is the Academy's mission to support science education from kindergarten to graduate school, from the halls in our homes to city hall, and from the people to the legislature and the governor.

## New Mexico Academy of Science Outstanding Science Teacher Awards 2001

by Harry F. Pomeroy, Jr.  
Awards Chairman, NMAAS

### Brenda Brannen

Brenda Brannen was chosen as the 2001 Outstanding Elementary Science Teacher by the NMAAS.

She graduated with honors from the University of Houston in 1973 with a major in elementary education and a minor in psychology. She taught first grade at Benbrock elementary in Houston, Texas in 1974 and then moved to Roswell, NM, and concentrated on her family for a few years.

In 1978 she returned to teaching at her children's preschool, where she taught three- and four-year olds for two years and became Director of Trinity Methodist Preschool. She worked at this excellent preschool for six years before returning to the public schools.

Mrs. Brannen has been teaching 4th-6th graders since 1986. She currently teaches at El Capitan School in Roswell. She is in a departmentalized situation which allows her to teach science to 5th and 6th graders every day. She believes in hands-on teaching which includes labs at least twice a week. She has been Science Chairperson for eleven years and has served on many district and school committees. One of her favorite projects is the Marsville Project sponsored by the United States Air Force. This is a three-month curriculum commitment in which students plan a colony on Mars.

One of her colleagues describes Mrs. Brannen's labs..."in these labs she uses everyday materials to apply scientific facts. Some labs include onions to study roots, make bread to show an example of a good fungus, and bake a cake to show chemical change." Mrs. Brannen's principal relates that when Brenda started to teach at El Capitan, "She was terrified: she actually had expected to teach kindergarten. However, she agreed to be the science teacher, and the rest is history. She is now a dedicated science teacher devoted to teaching science concepts to her fifth and sixth graders."

At the annual NMAAS meeting on 17, November, Brenda Brannen and Dr. Ervin Pfeifle were presented with a Nambeware tray with their names and "NMAAS Outstanding Teacher for 2001" inscribed. The Central New Mexico Section of the American Chemical Society presented \$250 to each teacher. A tote bag containing Museum items, posters, and science curriculum was given by the NM Museum of Natural History and Science.

The Awards Committee had a number of deserving nominations to review for the 2001 Outstanding Science Teacher Award; and we had a difficult time in deciding who should be honored. My thanks to John Atkins and Larry Powell, science instructors at Clovis Community College, and to Larry Stutts, retired science teacher and past-President of NMAAS, for serving on the selection panel.

.....Harry F. Pomeroy, Jr.

### Ervin A. Pfeifle, Ph.D

Ervin A. Pfeifle was chosen as the 2001 Outstanding Secondary science Teacher by the NMAAS.

He earned a B.S. and M.S. in biology/chemistry from the University of Texas El Paso and a Ph.D. in management from the University of Texas. Dr. Pfeifle taught pre-AP chemistry, AP chemistry and pre-AP physics from 1971 to 2001 in the El Paso Independent School District. After retiring from Texas, he moved to Las Cruces in 2001 and is currently teaching pre-AP chemistry, microbiology and medical terminology at

Some of his awards are: Master Teacher of Chemistry, Texas (2000, University of Texas/Texas Education Agency); Catalyst Award (2001, American Chemistry Council's Responsible Care Award as National Chemistry Teacher of the Year); and the Radio Shack National Teacher Award (2002).

He has been an active curriculum writer for 25 years, including preparing guidelines for AP environmental science.

Ervin's principal is impressed by his creative teaching..."his chemistry labs are paragons of 'hands-on' learning and contain a crucial relevance that students quickly understand."

A former student, who now practices medicine in Michigan, states... "[he] was able to communicate chemistry concepts and provide the most up-to-date data....He made chemistry the most interesting class of my high school experience and launched my interest in the field of pharmaceutical medicine."

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**New Mexico Junior Academy of Science - Paper Competition Program**

*by Lynn Brandvold  
Director, Jr. Academy of Science*

The New Mexico Junior Academy of Science (NMJAS) is a special program of the New Mexico Academy of Science. Science education has focused primarily on the background and tools necessary to do scientific research, but there is little emphasis on writing about and orally presenting the results of research. The NMJAS paper competition was instituted as a means of aiding and encouraging young scientists in the written and oral communication of the results of their research. The competitions are held in conjunction with the six regional and one state science fairs. There are two levels of competition: the junior division (grades 6-8) and the senior division (grades 9-12). Cash prizes are awarded to the 1st, 2nd, and 3rd place winners in both divisions, thanks to a grant from the Intel Foundation. First and second place winners at the regional level have the opportunity to present their papers at the state competition. The first place winner in the senior division at the state competition is able to attend the National Junior Academies of Science meeting held annually with the national meetings of the NAAS and AAAS.

Last year's first place winner in the senior division, Tom Widland, will travel to Boston on Feb 13 to attend the national meeting of the American Junior Academy of Science, held in conjunction with the NAAS/AAAS meeting, where he will present his paper to students from across the US

There was a major effort this past year to increase awareness and advertise the competition. One outcome was a "How to Write a Research Paper" pamphlet, which received praise from NMJAS regional directors and teachers. The pamphlets were sent along with information on the competition to over 300 science teachers.

The 2002 Junior Academy paper competition is on track for a very successful year. For the first time in many years we have regional directors for all six regions. The regional competitions will be held during March. Competition dates and regional directors are: Four Corners, March 8-9, Shelby Alexander; Northeast, March 2, Maureen Romine; Northwest, March 14-16, William Chambers; San Juan, March 8-9, Laura Howe; Southeast, March 16, Mendy Caviness; Southwest, March 16, Steve Goodgame. The directors and judges are all volunteers and without them the program couldn't function. Cash awards and other program costs have been paid the last two years by the grant from Intel. The Junior Academy and the NMAAS greatly appreciate this support. The New Mexico Chapter of the American Vacuum Society will again continue their long tradition of support for the paper competition by presenting cash awards to first and second place winners, and their teachers/sponsors, as chosen by their judges, in the State competition.

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**Judges Needed for the Northwest Regional Junior Scientist Paper Competition**

The NMJAS, Northwest Region, is looking for volunteers to assist in the judging of Paper Competition entries for this year. The competition is held in Albuquerque. If you would like to help, please see the contact information at the end of this story.

The judges will:

- \* Read and score all papers in their division before the oral presentations (Scoring sheets and judging criteria are provided.)
- \* Attend the oral competition on Thursday, 14 March, at UNM, listen to the presentations in their division, and meet at the close of the competition to rank the papers. Presentations normally last from 4 to 6 PM. Discussions and ranking may last as late as 8 PM. Box lunches are provided for judges. Judges are asked to arrive about 3:30PM.
- \* Write a note to one or more contestants (depends upon the number of entries) indicating strengths & weaknesses. The number of notes depends upon the number of contestants. We want each contestant to get written feedback.

NOTE: There are 2 divisions -- Junior & Senior. The junior division is grades 6-8 and the senior division is grades 9-12. The maximum number of papers for a division is 12. Papers are pre-screened before being given to judges. Papers are due to William Chambers by 1 March and he will get them to judges by 6 March.

We would like to have 4 judges and a chair for each session (total of 10 people). If you are interested in helping us make this year a success, please contact:

William Chambers  
wfchamb@sandia.gov  
505-845-8131

## Where are Women in Math, Science, and Engineering?

A recent report released by the National Council for Research on Women has cited troubling statistics. The report, "Balancing the Equation: Where are Women and Girls in Science, Engineering, and Technology?" notes that women have made significant headway in disciplines such as law and medicine, but that advances in science and technology fields have stagnated, or even eroded, in recent years. For example:

- Women in college-level computer studies have actually declined in numbers in the last two decades, from 37% of undergraduate degrees awarded to women in computer science in 1974 to only 20% in 1999.
- Women have been awarded more than a quarter of the Ph.D.'s in science over the last 30 years; however fewer than 10 percent of full professors in the sciences today are women.
- Women made up 46% of the work force in the U.S. as of 1996; however they held only 12% of the science and engineering jobs.

The report suggests some strategies that colleges and universities could use for retention of women in science and technology courses and notes that these strategies generally benefit both male and female students alike and thus do not help one gender at the expense of the other. Copies of the report can be ordered from the National Council for Research on Women, 11 Hanover Square, 20th Floor, New York, NY 10005

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## Scientists in the Classroom

*by Dr. Maureen Romine  
Director, Visiting Scientist Program*

The NMAAS Visiting Scientist Program, which provides presentations and/or demonstrations by some of the most distinguished scientists and mathematicians in New Mexico to all secondary schools throughout the state, at no expense to the schools, is busy as usual with over 90 requests, as of January 2002, for classroom visits on selected topics.

A major effort has been made to ensure that all areas of the state are informed about the program. Recent requests have come from schools in Tohatchi, Carrizozo, Quemado and Capitan, communities that either have not participated before or had not participated for some time.

Secondary school teachers who have not received the program booklet and are interested in the program, should call:

Dr. Maureen Romine, Director  
505-454-3264

or  
Rosalie Torres-Martinez, Program Secretary  
505-454-3557

## National Science Youth Camp Great Fun with All Expenses Paid

*by Dr. Richard E. Nygren  
Director, NM-NYSC*

The National Youth Science Camp (NYSC) is a wonderful opportunity for two graduating high schools seniors in New Mexico to participate, with all expenses paid, in an intense month-long camp for young scientists. The setting is in the eastern mountains of West Virginia's Potomac Highlands within wilderness areas of the Monongahela National Forest. Students from around the country are challenged academically in exciting lectures and hands-on studies and have many opportunities to push themselves physically in an extensive outdoor program, gain a new and deep appreciation for the great outdoors, and establish friendships that last a lifetime. Hands-on experiences and lectures expose delegates to current work across the spectrum of scientific disciplines. Visiting scientists are invited based on their reputation as leaders in their fields and on their ability to share up-to-date research with the delegates. More information on the NYSC is available from their web site, <http://web.mountain.net/~nysc>.

The New Mexico Academy of Science (NMAAS) administers this program in New Mexico, and the NYSC program pays all expenses including air fare. In late February, NMAAS will send applications to the principals of all qualified high schools in the state. In March, three judges from NMAAS will again select two NM high school seniors to attend NYSC this summer based upon their academic achievement, leadership in school and community activities, and a genuine interest in the sciences.

The winners in 2001 were **Jason Jaramillo (Clovis H.S.)** and **Linda Jeanine Davis (Cloudcroft H.S.)**. Below are some excerpts from a letter to NMAAS from winner Linda Jeanine Davis.

"... some of the best experiences I ever had, and the most memorable....The Senator luncheon was amazing... I enjoyed talking to him [Senator Jeff Bingamen]. The speakers were interesting, especially Mr. Daniel Goldin from NASA and Senator Robert Byrd from West Virginia.  
"I met many intelligent and fun people and we have become great friends. ....We started a web page and all 101 of us are keeping in touch that way. ... The National Science Youth Camp is an amazing place.

Dr. Richard Nygren of Sandia National Laboratories, a past president of NMAAS, administers the selection of NYSC delegates in New Mexico. The NYSC web site is a good source of information. Other inquiries may be sent to Dr. Nygren at [renygre@sandia.gov](mailto:renygre@sandia.gov) by e-mail or by post to the address below:

Richard E. Nygren MS1129  
Sandia National Laboratories  
P.O. Box 5800  
Albuquerque, NM 87185

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

### NMAAS PUBLICATIONS

<i>New Mexico Journal of Science</i> Set of all available pre-1992 back issues	\$10 _____
<i>From Sundaggers to Space Exploration</i> (NMAAS Sigma Xi, 1986)	\$4 _____
<i>Dinosaurs of New Mexico</i> (NMAAS Journal v. 32, 1992)	\$10 _____
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cations, payable to NMAAS, to:

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**NMAS Newsletter**  
**Volume 88, no. 1**  
**February, 2002**

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