

December 2012 Newsletter

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I. National Chemistry Week at National Museum of Nuclear Science & History

Our Local Section sponsored a National Chemistry Week event at the National Museum of Nuclear Science & History on Saturday, October 20. In a subsequent newsletter we will provide a list of the many volunteers who assisted with that event.

II. Thanks to our National Chemistry Week Volunteers at Explora

The Explora Museum celebrated “Nanotechnology: the smallest BIG idea in science” during National Chemistry Week on October 21–27. This week long program featured activities presented by Portal to the Public (PoP) Scientists, National Science Foundation (NSF) Student Interns, Nanoscale Informal Science Education Network (NISE), and our ACS volunteers.

Three NSF sponsored Explora High School Student Interns helped visitors learn about nanotechnology. To prepare for that event, Mr. Christian Pules (Rio Grande High School), Ms. Jasmine Prieto (Highland High School), and Ms. Liz Nevarez (Valley High School) came to Sandia National Laboratories’s Advanced Materials and learned about nanotechnology research and the chemistry used to synthesize nanomaterials through the efforts of Bernadette Hernandez-Sanchez.

To start the National Chemistry Week 2012 program there was a sharing session for Explora’s participating youth interns. The interns that took part in the 2011 program shared their experiences, answered questions, and facilitated their NCW activities for the newly selected youth intern. During the

session, the new interns gained insight into what the NCW program was about and how it was organized. The 2011 interns also discussed a few challenges they had faced which led to some helpful ways to improve the program. For example, they felt prototyping the activities on the exhibit floor would help them to be better facilitators. Therefore, it was ensured that the interns had an opportunity to prototype the activities with visitors prior to NCW.

The training sessions began with a visit to the laboratory of Bernadette Hernandez, a scientist working in Nanotechnology and who will be our Local Section Chair-Elect. Bernadette gave the youth interns a tour of Material Sciences Laboratories and asked the scientists in each lab to talk a bit about their research. After, the interns explored some of the NISE activities available for NCW and she explained a bit about Nanotechnology. In the following weeks the youth interns explored 3 activities; Gummy Worms, in Films, and Micelles, an Explora activity developed in conjunction with Bernadette Hernandez. They made discoveries, generated inquiry questions and challenges, and then prototyped the activities on the exhibit floor.

The National Chemistry Week 2012 events took place in the Explora experiment bar. Activities kept the youth interns busy and visitors engaged in discovery. The week opened with an event on Sunday October 21 in which the interns facilitated Chemistry activities from 1- 4 pm. In addition, on Friday October 25th from 3pm to 5 pm we held an event with our local scientists, Bernadette Hernandez and Robert Sayer. Bernadette's high school student volunteers also joined othe Explora youth interns. For this event scientists and youth volunteers worked together to facilitate NCW activities for students from West Gate Elementary. The Westgate students also viewed "The Mystery of Matter, Search for the Elements" episode "The Periodic Table" in the Explora Theater.

A few ACS scientists volunteered during the week to facilitate NCW activities and finished the week with an event on Saturday October 26th from 1-4 pm. Amonth those other scientists volunteering were Tracey Terry from UNM Valencia and Michele Denton From SNL. For this final event, Explora's youth interns facilitated NCW activities alongside other scientists who facilitated Nanotechnology related activities.

III. New Mexico Tech Chemistry Department 2012 Fall Symposium

The faculty and staff of the Chemistry Department at New Mexico Tech presented their annual Fall Symposium on October 26, 2012 to attendees from New Mexico Highlands University, University of New Mexico, and the University of New Mexico – Valencia as well as both Sandia and Los Alamos National Labs beyond the many New Mexico Tech attendees.

At the evening dinner presentation several students were recognized for their outstanding poster session presentations. Both the New Mexico Tech Chemistry Department and our Local Section contributed to making monetary awards to those students.

IV. 2012 Rio Grande Symposium on Advanced Materials

Congratulations to all the 2012 Rio Grande Symposium on Advanced Materials (RGSAM) Poster & Talk Winners! Our local ACS section assisted in organizing this year's meeting and contributed funds for the student winners. Thank you to all the ACS members who participated. We couldn't have had a

great event with out you. More information on this multi-organizational meeting can be found on: http://www.nm-materials.org/RGSAM/RGSAM_2012/index.html

Best Student Talk:

Optimization of Non-Precious Metal Catalysts for the Oxygen Reduction Reaction, Danae J. Davis¹, Timothy N. Lambert¹, Julian A. Vigil¹, Steven J Limmer¹, Wei Lu², Gedeng Ruan², Zhong Jin², and James M. Tour², (1) Sandia National Laboratories (2) Rice University

Undergraduate/High School Poster Winners:

1st Place: Charge Transfer Phenomena at the Molecular Donor/Acceptor Interface, Kathleen E. Martin^{1,2}, Jian Gao, John K. Grey¹, and Bernadette A. Hernandez-Sanchez², (1) University of New Mexico, Department of Chemistry, (2) Sandia National Laboratories, Advanced Materials Laboratory

2nd Place: The Effect of Small Alloy Additions on the Solderability of SnPb and Pb- Free Solders, Maximillian A. Holliday¹, Paul T. Vianco¹, and Jerome A. Rejent¹, (1) Sandia National Laboratories

3rd Place: Nano-cathode Precursors for Lithium Ion Batteries, Michael Neville^{1,2}, Timothy J. Boyle¹, and Sarah M. Hoppe¹, (1) Sandia National Laboratories, (2) University of New Mexico,

Graduate/Technologist Poster Winners:

1st Place Tied: Reliability of Miniature Inconel X-750 Coil Wound Springs, Brad Salzbrenner¹ and Brad Boyce¹, (1) Sandia National Laboratories

1st Place Tied: Development of Protocells, a Universal Nanocarrier, for Topical and Trans- dermal Delivery of Various Therapeutics, David Padilla¹, Linda Felton², C. Jeffrey Brinker^{1,3}, and Eric Carnes^{1,3}, (1) University of New Mexico, Center for Micro-Engineered Materials, (2) University of New Mexico, College of Pharmacy, (3) Sandia National Laboratories

3rd Place: Assessment of In Vitro Cytotoxicity of N-isopropyl Acrylamide and Poly(N -isopropyl Acrylamide), Marta Cooperstein¹ and Heather Canavan¹, (1) University of New Mexico

V. ACS 2012 Rocky Mountain Regional Meeting

The Colorado Local Section hosted the 2012 ACS Rocky Mountain Regional Meeting in Westminster, CO over October 17-20. There were several hundred attendees at this meeting which featured major symposia on Fuels of the Future, Women in Chemistry, Heterocycles, Lipids, Environmental, Chemistry of Brewing, and Cope Scholars.

VI. ACS Division of Inorganic Chemistry Student Travel Award Program

The ACS Division of Inorganic Chemistry is accepting applications for student travel awards for graduate and undergraduate students presenting research talks or posters at ACS National Meetings. The upper amount of the award is \$800.00. The deadline for receipt of applications is January 15 for the Spring ACS National Meeting, and June 1 for the Fall ACS National Meeting. Winners will be notified by March 1 and August 1, respectively, for the Spring and Fall meetings.

Selection process: Applications submitted by undergraduate researchers, graduate students in the first two years of their PhD and graduate students in the final years of their PhD will be reviewed separately. Within each category, the selection process will be based on scientific merit. Preference will be given to

applicants who have not been awarded a Student Travel Award previously. For additional details on the application process see the Division Awards web page: <http://www.acsdic.org/awards.htm>

Several other ACS Divisions have similar travel award programs available for students.

VII. Your ACS Publications Member Benefit

One of the recent Member benefit additions is free access to for up to 25 articles from all ACS Journals, ACS Symposium Series e-Books, and C&EN Archive. While many of our Members may have access to the same information through their own institution each such access may have a direct cost to their institution. Thus through taking better advantage of this Member benefit you may also financially benefit your own institution. As this calendar year wraps up you may wish to take advantage of this any remain article credits of this Member benefit in case you may wish to read an ACS Symposium Series e-Book over the holidays.

How to use this Member benefit:

- Log in with your ACS ID on the ACS Publications website (<http://pubs.acs.org>)
- Select your article of interest (HTML or PDF)

To view your current publication access balance and history log-in on the ACS Publications website, go to “Your Profile”, and select “Member Benefits” option. Access is for 48 hours from initial article request.

VIII. New Mexico Outstanding Science Teacher Awards

Our Local Section joined the New Mexico Academy of Science (NMAS) in recognizing two New Mexico Teachers for their outstanding contributions to science education. The two recognized teachers are Gail Silva of Piedra Vista High School in Farmington and Vicky Funk-Sheley of Tibbetts Middle School in Farmington.

Bernadette Hernandez-Sanchez made the award presentations (\$250 and selected ACS items) to the two teachers in behalf of our Local Section at the recent NMAS annual banquet.

IX. ACS National Elections

Results of the ACS national elections were announced in the November 21, 2012 issue of C&EN. The members of the American Chemical Society have elected Thomas J. Barton, a retired national laboratory director and distinguished professor emeritus of chemistry, as ACS president-elect for 2013. During his three-year succession, Barton will serve as president of the society in 2014 and immediate past-president in 2015 and will also serve on the board of directors.

For District V (which includes our Local Section) director, John E. Adams, Curators’ Teaching Professor at the University of Missouri, Columbia, won with a margin of just five votes more than the incumbent, Peter K. Dorhout, dean of arts and sciences at Kansas State University.

X. Local Section Officers

The following are our 2013 Local Section Officers. Please feel free to contact them about any of the opportunities mentioned in this newsletter or other ways you would like to become involved in the Local Section or ACS in general.

Position	Name	E-mail
Chair	Dr. Bernadette Hernandez-Sanchez (SNL)	baherna@sandia.gov
Chair-Elect	Dr. Kristin Omberg (LANL)	komberg@lanl.gov
Past-Chair	Dr. Michael Heagy (NM Tech)	mheagy@nmt.edu
Secretary	Dr. Changjian (Jim) Feng (UNM)	cfeng@unm.edu
Treasurer	Dr. Andrea Ambrosini (SNL)	aambros@sandia.gov
Advisors	Dr. Merritt Helvenston (NMHU)	merritt@nmhu.edu
	Dr. David Hobart (LANL)	dhobart15@gmail.com
	Dr. Jeffery Greathouse (SNL)	jagreat@sandia.gov
Councilors	Dr. Steve Showalter (SNL)	skshowa@sandia.gov
	Mr. Donovan Porterfield (LANL)	dporterfield@lanl.gov
Alternate Councilor	Dr. Ron Clark (Cycad Products)	cycadp@ziadial.com

We are also in the process of revising our Local Section bylaws to bring them up to date with ACS policies. We hope to have approval of revised Local Section bylaws on this upcoming officer election ballot. Anyone interested in participating in the revision process can contact <dporterfield@lanl.gov> for more information.

XI. Changes of Address

The distribution of our Local Section newsletter is dependent on accurate e-mail and US mail addresses being supplied to the ACS. Address changes can be submitted to ACS through the following means: service@acs.org, (800) 227-5558, or logging in to www.acs.org.

XII. Outstanding Science Teacher Award Address by Gail Silva

Hi, my name is Gail Silva. It is an honor just to be considered for this award, much less one of the recipients.

I've been a teacher in the Farmington District for 15 years, 10 years at Hermosa Middle School and 5 at Piedra Vista High School. I am married to Hud Silva and have three children, my stepdaughter Corrie who is 15, son Joseph, 6, and Porter who is about to turn five. While I go to work to teach every day, I come home to "learn" every night. My husband and I laugh every night as we get to view the world through the eyes of our children. I was a teacher first, before I became a parent. Being a parent has given me a whole new appreciation for my student's lives and their parents.

Twenty years ago if you told me I was even going to be a science teacher I would have said you were crazy. Every year one of my students asks me “what made you want to be a science teacher”. I tell them it is the best decision I never thought I’d make.

I originally went to college, at NMSU, intent on being a physical therapist. I was three years in to a pre-med Biology degree when I started to volunteer in the field. I wish that I had tried it sooner because I soon discovered that it was not the field for me. I was too far in to my Biology degree not to finish. In the mean time I was in the need of a job that was flexible enough to work around my school schedule. My sister, a kindergarten teacher, suggested subbing. I decided to give it a try. From my first day in the classroom I felt “at home”. I continued subbing and found that my personality was best suited for the older students. Upon completion of my Bachelor’s degree I decided to stay and get a Masters degree in Curriculum and Instruction, specializing in secondary science.

To be honest, the only reason that I chose secondary science was because I already had the necessary science credits. I had not yet developed a passion for teaching the subject. It was not until I did my student teaching with Susan Brown, in her 8th grade classroom, at Sierra Middle School that I realized how exciting the subject could be for students, and for the teacher. She had students, from every walk of life, “experiencing” science. As I reflected on how I wanted my classroom to look, I knew that it would be one where students dived in, feet first, in to the world of science. I was raised in an era where science was big words in a textbook. Susan taught me that it could be so much more for students. Along with the students I was learning to teach, I realized that I had been “surrounded” by science my whole life, and loved it. It was just never referred to as “science”.

Being raised in an agricultural environment I was immersed in science from a very young age. I realize now that raising show animals for 4-H was a 10 year long “science fair” project. In middle school and high school sports became my passion. That was what led me to want to pursue physical therapy. I loved learning about how the body works. Now, as a teacher, I try to have students make these connections with their own worlds. More than anything I try to convince my students that science is “accessible” to every single one of them and that it is so much more than just big words in a textbook. Science surrounds them every day, in every aspect of their lives.

As I continue to teach, my appreciation for science grows. I continue to learn about the world around me. Maybe it is age that has allowed me to slow down and enjoy the beauty in the complexity of a living “system”. Teaching Biology has opened up my curiosity for the subject of genetics. When taking genetics in college I recall that lining up letters in Punnett Squares seemed like Greek to me. As I have read and learned more about the history of Genetics it has opened up a whole new appreciation for the subject. I share bits and pieces of my readings with my students, hoping to spark the same curiosity in them. I’ve been able to allow my students to experience genetics through the help of the Howard Hughes Medical Institute program. Students are able to extract and study their own DNA using all of the equipment that a scientist working in the field would use.

My 15 years of teaching and being a science fair sponsor have flown by faster than I ever thought imaginable. There is one word I’ve never used to describe my life as a science teacher, “boring”. In these years students have never ceased to amaze me. Given the chance, their ingenuity will impress. My best days in the classroom were ones in which I sit back and watch my students try to figure out a problem without my help. I have learned far more from them than they have from me. The most important lessons they have taught me are that the most important thing you wear to school is a smile

and a good sense of humor. Some people worry about their future being in the hands of our young people. I am not. The curiosity my 4 year old displays examining a pill bug in the backyard is still present in our high school students, we just need to give them the chance to explore.

The valuable lessons of science are also valuable life lessons; hard work, perseverance, critical thinking, problem solving. These are lessons that I want my students to learn.

Again, I want to thank you for this wonderful honor.

XIII. Outstanding Science Teacher Award Address by Vickie Funk-Sheley

My name is Vickie Funk-Sheley and I am a 6th grade science teacher at Tibbetts Middle School in Farmington, New Mexico. I have been a teacher in Farmington for 15 years, having taught science for grades 5-8, all at Title 1 schools. I am also an adjunct instructor for the University of New Mexico's teacher education program, and have been for four years now. I have written several grants and won awards throughout my career, but none so prestigious as this, and it truly is an honor to me to be recognized by my peers.

I first began my hands-on experience with science when I was one year old, so I am told. I would sit in the yard and turn rocks over, methodically examining roly-polies one by one and then very carefully taste them, much to my mother's horror. By age 3, I had graduated to fireflies, beetles, and grasshoppers, only by then, had lost my desire to qualitatively observe using taste. At age 4, I could often be found outside with my grandmother, barefoot and caked in mud, assisting her with transplanting flowers one minute and climbing as high as I could in one of her many overgrown trees the next minute. When I was around 8 years old, my mother bought a set of medical encyclopedias from a door to door salesman, that became my main source of entertainment for hours at a time over the next few years...my favorite being the human body overlays of bone, muscle, nerve, blood vessels, and skin...and so continued my love and wonder for the world around me.

Science was always a favorite subject in school, for me. I took every chemistry, physics, and biology class I could in high school. Though I started out pre-med in college, I eventually found myself in the teacher education program at UNM, studying to become a science teacher, where I earned a BS in education, as well as an MA in curriculum development. In education, there is a saying that "you teach in the manner that you were taught", and many of my science teachers had taught hands-on labs, which I enjoyed and excelled at. I often attribute this to the reason I teach with a very hands-on approach, balanced with an emphasis on reading comprehension, academic writing, and technology...and I most definitely also attribute my hands-on approach to my childhood adventures of exploration and wonder, in hopes of instilling that same sense of wonder in my students. That is why my favorite days to teach are my lab days, and I schedule as many as I possibly can. I plan labs that are gooey, and messy, and that always have a surprise to them so that students truly have to hypothesize without knowing the outcome. It is always a reward for me to see their smiles and enthusiasm for science and I love to hear that science is their favorite subject, especially when they come back to see me as college students and tell me that they are science majors.

