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PROGRAMS

Highlights from National Chemistry Week 2019

'Marvelous Metals' theme celebrates the periodic table of elements

by Linda Wang

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In the California Section, Susan Marie Frontczak portrays Marie Curie during a presentation at Laney College.

ith its "Marvelous Metals" theme, this year's National Chemistry Week (NCW) helped amplify the celebration of the International Year of the Periodic Table.

The nationwide outreach event took place Oct. 20–26 across the US and Puerto Rico. Nearly 90% of the American Chemical Society's 185 local sections hosted hands-on activities and demonstrations at shopping malls, libraries, museums, and other public venues to communicate the value of chemistry in everyday life.

"NCW activities are a way to engage kids and get them to see that chemistry and science can be fun," says Holly Davis, chair of the ACS Committee on Community Activities, which organizes NCW with the help of the ACS Office of Science Outreach.

NCW was started in 1987 as National Chemistry Day by George Pimentel, who was ACS immediate past president at the time. The annual outreach program became so popular that in 1993, National Chemistry Day was renamed National Chemistry Week.



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"Since its inception, NCW has been an important, exciting, and fun way for chemists to connect and collaborate with others in their communities," ACS president Bonnie Charpentier says. "NCW programs educate and generate enthusiasm for science with people-to-people interactions at a local level."

This year, more than 175,000 copies of the NCW

publication Celebrating Chemistry were distributed. More than 19,000 people visited the revamped NCW website, and the #NCW hashtag reached more than 35 million people.

The NCW community service event focused on recycling metals, with many local sections organizing recycling drives and tours of local recycling centers. In addition, students in grades K–12 were invited to participate in the 2019 NCW Illustrated Poem Contest (see the box on page 59 for the winners).

"Our volunteers are amazing ambassadors for chemistry," Charpentier says. "Their dedication and hard work are invaluable and make NCW possible. I would like to thank them from my heart and have them know that their efforts have a great effect in connecting with their communities to inform and inspire."

The following, alphabetized by local section, are highlights from this year's celebration, collected through reports from ACS local sections.



In the Idaho Section, students at Idaho State University put on an explosive show.

Credit: Caryn Evilia

The **Alaska Local Section** hosted a movie and pizza night in celebration of Mole Day. Volunteers also organized a Slime the Professor fundraiser booth.

The **California Section** hosted hands-on activities during the Solano Avenue Stroll street festival in Berkeley. Volunteers also engaged the public in activities during Family Science Night at United for Success Academy, the Bay Area Science Festival's East Bay Science Discovery Day, the East Bay Mini Maker Faire, and BASF's Discovery Day at Oracle Park in San Francisco.

The **Central New York Section** participated in the Rosamond Gifford Zoo's annual Zoo Boo event, reaching more than 200 kids with hands-on activities.

The **Central Ohio Valley Section** held a Chemistry of Pickling event at the Heritage Farm Museum and Village in Huntington, West Virginia. Visitors learned about the different types of pickling, viewed bacteria under a microscope, and tested the pH of various household solutions.

The Central Texas Local Section organized 10 activity stations at a local park.

The **Central Wisconsin Section** had students from the University of Wisconsin–Stevens Point lead hands-on activities at a local Boys and Girls Club.

The **Chemical Society of Washington** hosted a day of hands-on activities at Rockville Town Square. Volunteers from the local section, the Rockville Library Makerspace, and Richard Montgomery High School engaged more than 120 visitors in hands-on activities.

Volunteers from the **Cleveland Section** presented hands-on activities at various branches of the Cuyahoga County Public Library.

The **East Tennessee Section** participated in a number of activities, including Al Hazari's 29th annual Magic of Chemistry show at the University of Tennessee, Knoxville; hands-on activities at the Tennessee STEAM Festival; a Program-in-a-Box event at Pellissippi State Community College; and Forensic Science Night at Rocky Hill Elementary School.

The **Erie Local Section** hosted a chemistry demonstration event at Millcreek Mall. The event featured eight interactive demonstrations for children, and the stations were staffed primarily by student volunteers from local universities.

In the **Indiana-Kentucky Border Section**, six high school chemistry students participated in the chemistry bowl competition at the University of Southern Indiana. Afterward, the students toured the chemistry labs with student affiliates at USI and were treated to a chemistry demonstration.



Credit: Elena Meadows In the Kalamazoo Section, a student learns about density during hands-on activities at the Kalamazoo Valley Museum.

The **Kalamazoo Section**'s 33rd annual Chemistry Day event at the Kalamazoo Valley Museum drew more than 700 visitors. Volunteers presented 15 hands-on activities, including using metals to clean up oil spills and removing iron from cereal.

The **Kentucky Lake Section** put on an NCW demonstration show at the University of Tennessee at Martin. Student volunteers from four local universities led the demonstrations.

The **La Crosse–Winona Local Section** hosted its 2nd Annual Pumpkin Drop and STEM Carnival, which was attended by more than 500 people from the community. Volunteers also held hands-on activities at the Children's Museum of La Crosse.

The **Maryland Section** organized activities at public libraries around Baltimore. Participants learned about metals through activities such as redox reactions in copper-zinc batteries.

The **Michigan State University Section** hosted activities at the Impression 5 Science Center. More than 500 people attended the event, which was facilitated by students from Michigan State University and other local schools.

The **Midland Section** hosted a Haunted Mine activity in which participants used black lights to locate different coins, avoiding slime and other surprises along the way.

More than 130 students participated in **Mole Day at the University of Nebraska–Lincoln** as part of the Nebraska Section's NCW celebration. This new annual



Credit: Courtesy of the Midland Section These pumpkin batteries were among the demonstrations by the Midland Section.

event highlighted careers in chemistry. Activities included a raffle for an ACS mole, two quizzes, and giveaways.



Members of the New York Local Section show off their giant 3-D periodic table.

Members of the **New York Local Section** unveiled their giant 3-D periodic table to commemorate the International Year of the Periodic Table at the New York Hall of Science. Thousands of volunteers representing 56 organizations contributed element designs. Volunteers also hosted hands-on activities for more than 1,200 visitors to the Hall of Science.

The **North Jersey Section** hosted ChemExpo, a 1-day event at Liberty Science Center. Volunteers from local colleges, universities, companies, and organizations interacted with more than 200 children, who learned about the various properties of metals.



In the Northeast Wisconsin Section, students hosted a Program-in-a-Box event at Marian University.

The **Northeast Wisconsin Section** hosted activities for about 30 children at the Boys and Girls Club of Oshkosh as well as at the Oshkosh Public Library. In addition, more than 50 people attended a Program-in-a-Box event at Marian University. The **Northeastern Section** held outreach events at the Museum of Science, Boston, and at the Boston Children's Museum. David Sittenfeld from the Museum of Science presented the two Phyllis A. Brauner Memorial Lectures, attended by approximately 225 people.

In the **Northern New York Section**, Dana Barry of Clarkson University conducted a workshop with students at St. Mary's Catholic School in Canton, New York. She spoke about a variety of metals, including gold, silver, iron, and aluminum. Students participated in a design competition to build the best aluminum boat to carry pennies composed of zinc and copper. The local section also hosted a Program-in-a-Box event at SUNY Plattsburgh. Finally, the section hosted outreach activities for more than 300 students during Chemtoberfest.



Credit: Courtesy of the University of Tulsa Student Chapter In the Tulsa Section, students from the University of Tulsa demonstrated the melting point of metals such as gallium.

In the **Northern Oklahoma Local Section**, chemists from Phillips 66 and Chevron Phillips Chemical visited more than 50 elementary schools, conducting hands-on activities with roughly 1,400 students. Experiments included building aluminum foil boats and calculating the number of pennies they would hold.

Volunteers from the **Ole Miss Local Section** distributed periodic table cupcakes, hosted a Programin-a-Box event, and handed out facts about metals associated with candy.

The **Orange County Section** hosted outreach activities at the Santa Ana Zoo, with residents of Santa Ana, California, receiving free admission to the zoo. Volunteers included local section members and students from 13 area colleges and universities.



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Chromatographic separations with superficially porous particles by Mac-Mod Analytical, Inc. The **Pittsburgh Section** partnered with the Carnegie Science Center to host ChemFest, a 2-day celebration of chemistry. Volunteers from local companies, government organizations, and academic institutions hosted activities for more than 2,200 local students and their teachers.

The **Portland Section** coordinated with the Oregon Museum of Science and Industry's Chemistry Lab staff to provide hands-on activities to visitors of the museum.

The **Princeton Local Section** held its 20th NCW Activities Night at Princeton University's Frick Chemistry Laboratory. More than 300 visitors enjoyed activities, games, and presentations. Students from Princeton gave demonstrations, Stanley Howell of Princeton gave a talk on water purification, and Ryan Amos of Princeton talked about blacksmithing.



More than 800 volunteers came out to celebrate the Puerto Rico Section's Festival de Química.

The **Puerto Rico Section** held its annual Festival de Química at the Paseo de la Princesa in Old San Juan. More than 800 volunteers from 21 student chapters around Puerto Rico engaged in hands-on activities with more than 2,000 people from the general public, setting a record number of volunteers for the local section.



Oligonucleotide Analysis: Mass Spectrometry with BioPharma Compass Software by Bruker

In the **Sacramento Section**, volunteers from local high schools and colleges hosted metal-themed activities at the Powerhouse Science Center.

The **Saint Joseph Valley Local Section** partnered with the E3 Robotics Center on STEM Fest 2019. Representatives from several metal companies talked about the metals they use in their products.

In the **Salt Lake Section**, members of the Westminster College Chemistry Club joined forces with the Westminster College Geology Club, the college's Pre-Professional Health Club, the Cyprus High School ACS Chem Club, and the Great Salt Lake Institute to show the versatility of metals. The geology club organized a scavenger hunt in which participants looked at various

rocks and minerals and learned how metals give them their characteristic colors. Volunteers from the Great Salt Lake Institute informed visitors about the magnetic properties of iron in meteorites.

The **San Diego Section** held its 32nd Chem Expo at San Diego Miramar College. In addition to volunteers hosting hands-on activities, Scout troops held an event that earned badges for 200 troop members.

The **San Joaquin Valley Section** organized Mad Scientist Tours for students from local high schools. These consisted of visits to commercial labs in the greater Fresno, California, area so students could see what it's like to work as a chemist.



In the South Texas Local Section, students from South Texas College passed out periodic table cupcakes.

Volunteers from the **Sioux Valley Local Section** hosted NCW demo days in Brookings and Sioux Falls, South Dakota, and Sioux City, Iowa. Each venue offered giveaways, door prizes, and hands-on activities. Volunteers from the South Texas Local Section hosted hands-on activities and demonstrations for more than 300 children at the Spooky Science Fest at Estero Llano Grande State Park. The local section also hosted a webinar, which was attended by more than 100 people.

The **Southern Arizona Section** hosted outreach activities at local libraries and the Children's Museum Tucson.

The **Southern Indiana Local Section** helped facilitate outreach activities during the sixth annual Science Fest at Indiana University Bloomington. Participants were also treated to lab tours and a chemistry magic show.

The **Southern Nevada Local Section** hosted activities at the Discovery Children's Museum in Las Vegas. College students and local section members interacted with more than 200 kids and adults over the 7-hour event. At least 90 kids completed all five activities and earned a goody bag to take home.

Volunteers from the **Southwest Georgia Local Section** engaged more than 90 children and 250 adults in hands-on activities during Science Saturday at Valdosta State University. Materials were provided by the VSU Chemistry Department, the Southwest Georgia Local Section, and the VSU College of Science and Mathematics.

In the **Susquehanna Valley Local Section**, volunteers from the Bucknell University student affiliate groups hosted hands-on activities at a local children's museum and handed out periodic table cupcakes.

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The **Texas A&M Local Section** hosted a Chemistry Open House for more than 1,200 people, who were treated to demonstrations and lab tours at Texas A&M University in College Station.



In the **Trenton Local Section**, 33 volunteers from Mercer County Community College, Princeton University, and Rider University provided an educational experience for more than 625 elementary school students.

The **Upper Ohio Valley Local Section** and Marietta College Department of Chemistry and Biochemistry put on two magic shows for 88 elementary school students and their parents. Several teachers gave extra credit to students who attended. Students were given ACS pencils, stickers, tattoos, balloons, and nanomoles to take home.

In the **Western Maryland Section**, student affiliates from Frostburg State University hosted a Program-in-a Box event.

During the **Western Michigan Local Section's** celebration of NCW, volunteers displayed what is **possibly the world's largest periodic table**. Forty schools from 12 states and 3 countries designed elements for the project.

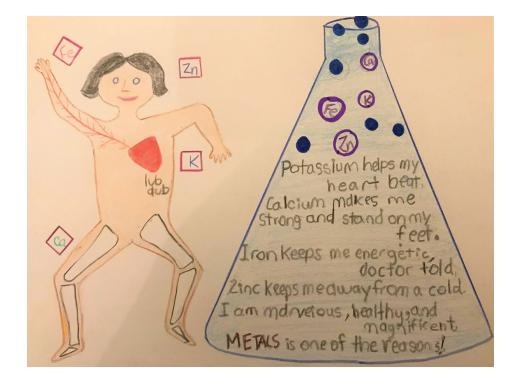
The **Wisconsin Local Section** took to the lobby of the Capitol Ice Arena, with student volunteers doing chemistry demonstrations before a Madison Capitols hockey game and during the two intermission periods. In addition, nearly 40 ACS members and prospective members interacted in a special suite overlooking the rink.

Next year's NCW celebration will take place Oct. 18–24. It will focus on glues and adhesives with the theme "Sticking with Chemistry."

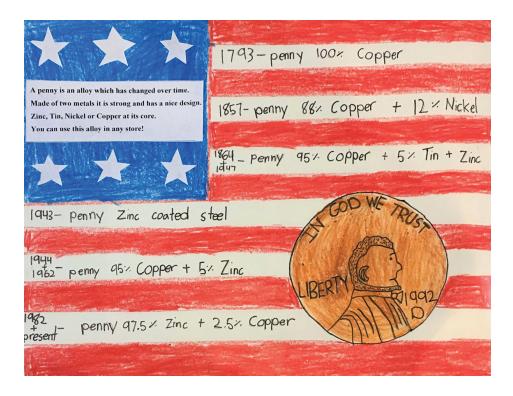
NCW ILLUSTRATED POEM CONTEST WINNERS

The ACS Committee on Community Activities and the ACS Office of Science Outreach have announced the winners of the 2019 National Chemistry Week Illustrated Poem Contest, in which K -12 students were invited to share their interpretation of this year's theme, "Marvelous Metals," in the form of illustrated poems. First-place winners in each grade category received \$300. Secondplace winners received \$150. View all poems at www.acs.org/ncw.

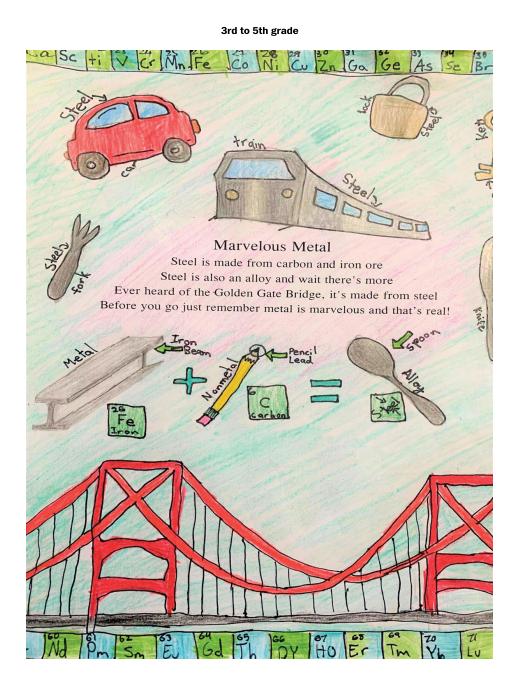
K to 2nd grade



First place: Rhea Utturkar, Eastern New York Local Section



Second place: Rishi Khedekar, Princeton Local Section

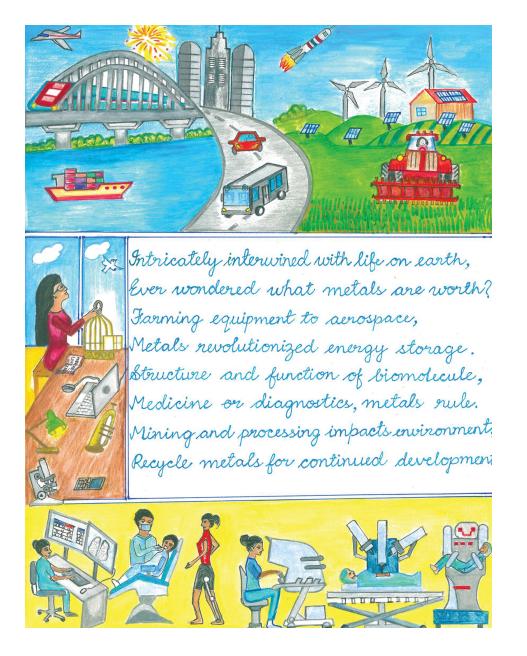


First place: Hema Gujjar, Princeton Local Section

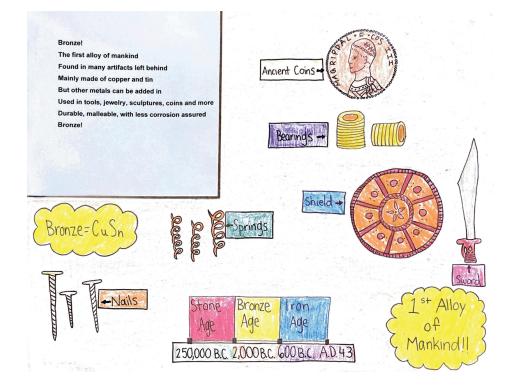


Second place: Athena Nastasia, Central Arizona Section

6th to 8th grade



First place: Ashmita Prajapati, Northeastern Section



Second place: Anika Khedekar, Princeton Local Section

9th to 12th grade



▶ First place: Oluwatoni Salami, Southwest Georgia Local Section



Second place: **Isabella Truong**, Greater Houston Section

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