

## National Chemistry Week Activities

### Girls In Science & Saturday Science

As part of the NCW celebrations, the Richland Section organized two major outreach events.

**GIRLS IN SCIENCE** was held on the campus of Eastern Oregon University (EOU) on Saturday, October 22 and attracted 106 girls in grades 6th through 8th. This year participants came from ten different counties in Northeastern Oregon and Southeastern Washington, some traveling hundreds of miles to reach La Grande! Entitled "Zombie Apocalypse", the event featured forensic activities related to the NCW theme "Solving Mysteries Through Chemistry". Girls were challenged to investigate what had turned a famous anthropologist into a "zombie" upon returning from a trip in the Caribbean islands and whether this was an isolated case or a zombie attack! Girls explored whether the "zombie" symptoms could be due to high alcohol content in blood, the nature of a mysterious powder he was seen carrying around and whether he had DNA. Girls also learned about the effect of neurotoxins on the nervous system and recorded EEGs and learned how to decode secret messages.

Over 60 volunteers including members of the Richland section, student members, faculty and staff at Eastern Oregon University and community members helped to organize and run the event. Girls were first introduced to the story and then divided into groups to rotate among different activities centered on chemistry, biology, neuroscience and computer science/math. Specific chemistry activities revolved around analyzing specimens found on the suspected zombie. Using simulated blood samples and standards of different alcohol concentrations, girls tested the zombie blood to determine whether the zombie-like behavior was actually due to intoxication. This gave the opportunity to talk about negative alcohol effects and how chemistry can assist in measuring blood alcohol content through breath. They also conducted tests to identify a mysterious powder that the anthropologist was carrying around. It turned out to be tetrodotoxin, a deadly neurotoxin that would justify the zombie-like symptoms. Girls also extracted DNA from the "green" zombie flesh (in reality honeydew melon!) and made DNA sequence bracelets using beads.

Biology and math activities complemented the chemistry with tests on the effect of neurotoxins on respiratory rate, electrocardiograms and EGG activity. Participants were also engaged in a cryptography exercise to decode secret messages delivered by increasing numbers of zombies throughout the day.

The day concluded with each team reporting their case to judge "Patty", our esteemed colleague in the math Department. Each team did a fantastic job and demonstrated great ability to reach conclusions from experimental evidence and synthesize information. The day was a testimony that real learning only occurs when young people are engaged and their interest and creativity are stimulated. There was no canned solution to the case. The solution was left open ended to empower each group and honor the good work that each single girl has contributed with.



*Girls in Science (top) doing a blood test; Volunteers helping the Girls in Science Event (bottom).*

This outstanding event was made possible by the hard work of over 60 volunteers! In addition to members of the Richland Section and Eastern Oregon University faculty and students, the Northeast Oregon Area Health Education Center (NEOAHEC) played a major role in organizing the event. Staff from NEOAHEC advertised the event to 20 different counties in Eastern Oregon sending fliers to schools, Girl Scouts and home school organizations. They also took care of registration details and all the logistics associated with the event. Girls received a free lunch, a booklet outlining the hands-on activities, a free T-shirt and other NCW goodies including a copy of Celebrating Chemistry. The event was met with great enthusiasm by all participants and was overall a great success. In addition to the Richland Section, we received support from the La Grande Sorooptimists.

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## NATIONAL CHEMISTRY WEEK ACTIVITIES - CONTINUED FROM PAGE 1

**SATURDAY SCIENCE** was held on November 12 in Enterprise, OR at the local school. The event, open to both boys and girls, was entitled "Solving Mysteries through Chemistry" and included four stations with forensic activities: identifying a mysterious powder, extracting DNA from strawberries and making DNA models with marshmallows and licorice, detecting (fake) blood with luminol and identifying blood types. The event was extremely successful with a total of 40 students in grades 5th through 9th attending the program and garnered rave reviews from students, including, "I saw DNA for the first time!" and "It was cool to be scientists and detectives using chemistry." Fifteen EOU Student Members and two section members conducted hands on activities revolving around the 2016 National Chemistry Week theme and closed the event with a magic show. The event was in part coordinated by staff from the Northeast Oregon Area Health Education Center (NEOAHEC) who took care of registration and logistics.

Plans for this event started in May and were facilitated by teachers in the area. We developed a flier that was distributed in all elementary and middle schools across several counties.

The day started with EOU students sharing with children why they had decided to attend college and what the college experience meant to them. Several shared their passion and enthusiasm for chemistry. Children were also asked what they knew about the role of chemistry in solving forensic cases. Children were then divided in four groups and rotated around four stations, each lasting approximately 30 minutes. At the end children were asked to highlight what they had learned about chemistry and forensic investigations. The day concluded with a magic show hosted by the EOU students.

Children received a t-shirt, free lunch (donated by a local organization) and a bag that contained National Chemistry Week giveaways including a periodic table of the elements, tattoos, stickers, pencils and balloons and copies of Celebrating Chemistry available in English and Spanish. These were made possible through the monetary support from the Richland Section.



*Boys and girls are making DNA model (top); Detecting blood with luminol and identifying blood types (bottom).*

## NUCLEAR SCIENCE MERIT BADGE



***Merit Badge to  
be Offered  
March 18 & 25***

***For youth in  
grades 7-12***

Richland ACS Section member Sandra Fiskum and ANS of Eastern Washington Section Bruce Pierson are organizing a training event on March 18 and 25 for Scouts and other youth (grades 7-12) interested in learning about nuclear science. During the 2-Saturday course, experts in nuclear science fields will teach material as outlined in the Boy Scouts of America Nuclear Science merit badge book.

Most activities are interactive and will be conducted in a small group setting. This experience should be fun, interesting, and rewarding. At the conclusion of this 2-day class, each Scout will have completed the requirements to earn the Nuclear Science merit badge. Girl Scouts will be awarded an activity patch from the American Nuclear Society. Non-scouts will receive a certificate of completion. Contact Sandy at 967-0908 or sandenf@msn.com or Bruce at bpnuke@umich.edu for more information.

## CHEMISTRY TRAINING FOR LOCAL YOUTH

Last fall, Richland Section members organized and ran a training program for local youth based on the requirements of the Boy Scout chemistry merit badge. The training was held on two consecutive Saturday mornings, Nov 5 and 12. Attendance at both Saturday sessions was required to complete the badge requirements. However, the training wasn't just for boys, and it wasn't just for scouts either. Twenty-two boys, and girls, between the ages of 11 and 15 completed the training. Boy scouts who completed the training received the required signed forms so that their troop could award the badge. Everyone who attended received a periodic table poster and an ACS designed patch (as well as some fun memories). The chemistry merit badge offers a broad look at chemistry and is a convenient way of organizing the subject.

Here are the chemists and chemical engineers who worked with the youth, as well as the subjects they taught: **Royace Aikin**, separations and analytical; **Angela Edwards**, chromatography and careers; **Greg Gauck**, environmental; **Karen Grant**, lab tour; **Margaret Kowalska**, chemical changes; **Steve Krogsrud**, organizer; **Eric Leber**, careers; **Richard Lucke**, inorganic; **Steven Luksic**, organic; **David Merrill**, physical; **Lydia Rush**, biochemistry, **Frannie Smith**, organizer, and **Markus Stauffer**, safety.



*Boy Scout chemistry merit badge training.*

## NORM UPDATE

The annual ACS Regional Meeting Planning Conference was held the first weekend in November 2016 at ACS Headquarters in Washington, DC. Colleagues on Regional Meeting Local Organizing Committees (LOCs) from each ACS Region were in attendance to receive training and latest updates from our Professional Meeting Planners at ACS, as well as to share best practices and challenges in each Region associated with hosting these important technical exchanges across the U.S. The Richland Section supported two of our LOC Members to attend, Anna Cavinato and Ram Devanathan. Janet Bryant (Operations Manager NORM 2018/Chair NOR Board, Inc.) also was there to attend the parallel track that weekend held for Chairs of each ACS Regional Board of Directors. We all also had the opportunity to network with our colleagues from Oregon State University, who are hosts for the upcoming NORM 2017 on the OSU campus (see [www.norm2017.org](http://www.norm2017.org)) as many Richland Section members are assisting with that meeting as well, as we leverage those preparations for NORM 2018 on the PNNL and WSU-Tri Cities campuses in June 2018.



*NORM Team: Anna Cavinato (Co-General Chair NORM 2018) and Ram Devanathan (Co-Program Chair NORM 2018) of our Richland Local Section attended the ACS Regional Meeting Planning Conference in Washington, DC. They are joined by other Local Organizing Committee members from across the nation, including Richard Nafshun (NORM 2017 General Chair) and Judy Giordan (NORM 2017 Co-Program Chair), and others.*

# VOTE ON THE RICHLAND SECTION 2017 BUDGET

The proposed 2017 budget is shown in the table below. The Section Board believes this budget reflects the encouragement and advancement of chemistry in the broadest manner possible, the increase and dissemination of knowledge, the promotion of scientific interests and inquiry, the stimulation of professional interests, the fostering of chemistry literacy in the community, and education of its members. The budget is submitted to the membership at this time for consideration, and will be voted on by the membership electronically. A ballot will be distributed to your email by Feb. 24. Response is required by March 10. Questions can be submitted directly to Sandy Fiskum (sandy.fiskum@pnnl.gov). Note that the career fair grant received several years ago (\$2,400 remaining, 21m) results in a large negative cost variance when juxtaposed to 2017 estimated income. The travel subsidy to local Section Leadership (20) was more than doubled to support our training for our new councilor, Anna Cavinato.

	2016 Final	2017 Proposed
<b>REVENUES</b>		
(1) Annual ACS Allotment (plus dues)	\$8,177.98	\$8,069
(2) New member commissions	\$0	\$0
(3) Donations, contributions	\$500	\$0
3a) Bequests and/or trusts	\$0	\$0
(4) Rebate from ACS for Councilor travel expenses	\$2,738	\$2,800
(5) ACS Awards or Grants received (e.g., IPG)	\$1,500	\$0
(6) Program revenue (short courses, lecture series etc.)		\$0
(7) Local section dues, affiliate dues	\$1,445	\$1,400
(8) Interest, dividends	\$15	\$15
(9) Special events and activities	\$0	\$0
(10) Meals (include total meals in revenue)	\$0	\$0
(11) Other revenue (describe and itemize)		\$0
a) AIChE contribution to summer picnic	\$0	\$0
b) Early bird discount for leadership training	\$250	\$250
(12) TOTAL REVENUES	\$14,626	\$12,534
<b>EXPENSES</b>		
(13) Subsidies to subsections, topical groups, or affiliate groups		
(14) Awards, scholarships, grants, etc.		
a) Travel awards for ACS student members	\$3,000	\$3,000
b) HS Teacher Grants	\$0	\$100
c) Outstanding Teacher Award	\$0	\$100
d) General Awards	\$228	\$300
e) Supplemental awards	\$133	\$250
(15) Administrative expenses (not including postage, printing, and shipping)	\$69	\$100
(16) Printing, publications, newsletters, meeting announcements, postage		
a) Newsletter	\$582	\$1,000
b) Public relations	\$420	\$400
c) Web update	\$0	\$500
d) Miscellaneous	\$23	\$50
(17) Local Meetings (include speakers' expenses)		
a) Speakers	\$429	\$400
b) ACS Picnic	\$233	\$400
c) ACS Annual social	\$889	\$1,000
d) Science Cafes	\$108	\$600
(18) Meals		\$100
(19) Travel subsidies to Councilors	\$3,943	\$4,300
(20) Travel subsidy and fee for Local Section Leadership Conference	\$882	\$2,500
(21) Other expenses (describe and itemize)		
a) K-12 outreach (Lewis and Clark elementary, Expanding Your Horizons, Other)	\$50	\$150
b) ACS and you (nano grant-bridge the gap)	\$82	\$0
c) NCW, K-12 outreach	\$456	\$750
d) Olympiad	\$128	\$250
e) Science Fair and award	\$425	\$450
f) Girls in Science	\$500	\$500
g) Special Symposium	\$115	\$0
h) Diversity Affairs Committee	\$0	\$500
i) Boy Scouts Nuclear Science Merit Badge	\$50	\$75
j) Earth Day	\$0	\$250
k) Project SEED	\$900	\$900
l) Other expenses (ANS-Dec meeting)	\$0	\$50
m) Career fair	\$600	\$2,400
n)		
(22) TOTAL EXPENSES	\$14,245	\$21,375
(23) EXCESS (DEFICIT)	\$382	(\$8,841)
<b>Richland Section Cash Reserves:</b>	\$32,350	

## '17 OFFICERS & COUNCILORS

Meet your newly elected ACS Richland Section Officers and Councilors. They are volunteering their time and talents to help make this section the best it can be. Please help them in any way you can by volunteering your ideas and time to help our events succeed.



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# BUDGET

## VOTE 3.10.17

## PASSING THE LEADERSHIP TORCH



Dear Colleagues,

I thank you for the unstinting support you gave me in 2016. Thanks to the tireless efforts of our volunteers, the Section is finishing this year in the black financially. We conducted several activities in Eastern Oregon and Richland to communicate the joy and magic of Chemistry to the community, especially the next generation of scientists. We supported undergraduate students, sent a young woman chemist to the Pacific Northwest Women in Science Retreat, hosted picnics, and celebrated the service of our most senior members. We organized a series of terrific lectures by Bill Carroll, finally delivered a long overdue award to Janet Bryant, witnessed the election of our colleague Dr. Allison Campbell as ACS President, supported the Chemistry and Nuclear Science merit badges, and held the local Chemistry Olympiad and several memorable Science Cafe events. We also succeeded in our bid to host NORM 2018. Thanks to Alice Xu's hard work, we produced amazing newsletters to communicate with our members. Our last Science Cafe was attended by more than 45 people despite the cold weather. Let us maintain that enthusiasm in 2017.

Finally, I thank Richard Hermens for his long service to the Section as Councilor. Richard and Janet continue to inspire me with their dedication. I wish our Chair, Vanda Glezakou, the very best for continued excellence. The Section is in great shape with Vanda at the helm and with Anna Cavinato and Dave Heldebrant to guide her.

Sincerely, *Ram*

## GREETINGS FROM NEW SECTION CHAIR



Dear Colleagues,

Thank you for giving me the opportunity to serve our local Chapter, an amazing organization fueled by the enduring enthusiasm and energy of our members. Ram did an exemplary job last year and I will count on his advise and input, and I hope to do the same for Ilke, our Chair-Elect next year.

There are so many things we as chemists can do, but I would like to focus my efforts in STEM activities, public outreach and help our new professionals, such as students, post-docs and junior staff succeed in their careers. At the same time, I hope that our senior and/or retired members will continue and renew their support for our local Chapter and be a valuable source of guidance and advice. I would also like to reiterate the Chapter's commitment to be a safe zone where every member is treated with respect regardless of their origin or personal beliefs.

I feel humbled by the energy our Officers Jann Frye, Sandy Fiskum, Anna Cavinato, David Heldebrant, Steve Krogrud and Alice Xu bring to this organization. Last, but hardly least, Janet Bryant is a bottomless source of information and a guiding light. I thank you all.

We have the Mid-Columbia Science Fair coming up, I encourage you to help judge the projects that the next generation of scientists are working on. Engage them and support them and let their bright minds energize us. Interesting Science Cafés are coming up and we hope to see you there.

I will leave you with a quote from one of my favorite and under appreciated women chemists, Rosalind Franklin: "Science and every day life cannot and should not be separated." Let's bring more science to our every day life and those around us.

With kind regards, *Vanda*

## MAKING OF A NATIONAL PARK: B REACTOR & THE MANHATTAN PROJECT

The B Reactor was a technical marvel created during WWII and it encompassed the talents of many different scientific and engineer disciplines. Recently, this facility has been named a part of the newly established Manhattan Project National Park.

Kennewick Community Education presents a panel discussion of this process focusing on the coming together of the local community, the Department of Energy, and the political forces behind the transformation. Learn

about the importance of the reactor during WWII and Cold War, current tour information and the vision for the future of the park. This will be a moderated discussion followed by a question and answer session.

The discussion will be held on Wednesday March 8 at 6:00 p.m. at the Kamiakin Auditorium, 500 North Arthur, Kennewick. There is a \$5 admission fee. Advance registration is required [www.kennewick.coursestorm.com](http://www.kennewick.coursestorm.com).

## MEMBERS SOCIAL: SCIENCE CAFE AT ICE HOUSE BREWERY



Bottoms up! January 26th at 5:30 PM. ACS Richland Section members were treated to a science Café on the Chemistry of Beer with a tour of Ice Harbor Brewing Co at 206 N. Benton St., Kennewick. Ice Harbor Brewmaster Russ Corey gave a 30 minute presentation on the chemistry of beer, followed by a behind the scenes tour of the brewery and discussion of the brewing process. In tandem with the Science Café, Dan Howe, a Chemical Engineer from PNNL, honored Ice Harbor with a framed copy of a recent journal article in ACS Sustainable Chemistry & Engineering with support from Ice Harbor. In the article, Dan and his team identified the organic and inorganic species found in the aqueous byproducts generated from hydrothermal liquefaction of spent beer grains donated by Ice Harbor. In all, 55 members attended the event and had a good time learning about the chemistry of beer while enjoying a pint or two.

## UPCOMING EVENTS

### FEBRUARY 28 SCIENCE CAFE

**"THE MANY FACES OF GLASS" BY DR. JOE RYAN**

APEL Building Room 15, 350 Hills St, 5:30-6:30 PM

### MARCH 8 MAKING A NATIONAL PARK: B REACTOR & THE MANHATTAN PROJECT DISCUSSION

Kamiakin Auditorium, 500 North Arthur, Kennewick 6:00 PM

### MARCH 9 MID-COLUMBIA SCIENCE FAIR

### MARCH 10 BUDGET VOTE DEADLINE

A ballot will be distributed to your email by February 24. Response is required by March 10. Questions can be submitted directly to Sandy Fiskum at [sandy.fiskum@pnnl.gov](mailto:sandy.fiskum@pnnl.gov)

### MARCH 18 & 25 NUCLEAR SCIENCE MERIT BADGE TRAINING

Contact Sandy Fiskum at [sandenf@msn.com](mailto:sandenf@msn.com)

### APRIL 22 EARTH DAY

### MAY 6 OR 13 CAREER FAIR

Presentation Skills Workshop, for more info contact Vanda at [vanda.glezakou@pnnl.gov](mailto:vanda.glezakou@pnnl.gov)

## CO-EDITOR SEARCH

Here is your chance to be on the ground floor of all activities in the ACS Richland Section! The newsletter coeditor learns about all activities as they form and develop. As the newsletter co-editor, you get to help formulate the stories that go with the activities. Please consider donating your time toward this opportunity. No worries. Our editor will coach you until you are confident. Contact Alice Xu at [Alice.Xu@recsilicon.com](mailto:Alice.Xu@recsilicon.com) for further details.



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