SPRING 2016

Richland Section
American Chemical Society

Dr. William F. Carroll Visits Richland

Dr. William F. Carroll, Jr. holds a Ph.D. in Organic Chemistry from Indiana University, Bloomington, IN. He received an M.S. from Tulane University in New Orleans, and a B.A. in chemistry and physics from DePauw University in Greencastle, IN. He retired from Occidental Chemical Corporation in 2015 after 36 years, and now heads his own company, Carroll Applied Science, LLC. He is also Adjunct Professor of Chemistry at Indiana.

Bill is a member of the Board of Directors of the American Chemical Society (ACS), having served as Chair between 2012 and 2014. He is also a Past President (2005), one of three living members to hold both offices. He is a Fellow of the AAAS and the Royal Society of Chemistry. In 2009 he was chair of the Council of Scientific Society Presidents.

Bill has chaired numerous committees for industry associations, and served on expert groups commissioned by the United Nations Environment Programme, the US Environmental Protection Agency and three states--most recently the California Green Ribbon Science Panel.

Bill has received Distinguished Alumni Awards from both Indiana and DePauw as well as the Harry and Carol Mosher Award from the ACS Santa Clara Valley Section, The Public Affairs Award from the Chicago Section, the Henry Hill Award, sponsored by the ACS Division of Professional Relations, the Michael Shea Award from the Division of Chemical Technicians.

He holds two patents, and has over seventy-five publications in the fields of organic electrochemistry, polymer chemistry, combustion chemistry, incineration, plastics recycling—and popular music history.

Mark Your Calendar

Dr William Carroll will visit Richland this month. He will deliver a public talk and also give two workshops targeted at Grad Students and Post-Docs, and would also be useful for Undergraduate students to begin their preparations and think about their futures.

On Thursday, April 21st, Dr Carroll will deliver ACS Career Pathways Workshop: Resume Construction and Industry.

On Friday, April 22nd, Dr Carroll will deliver a public talk, "Statistics and the Shirelles: How Physical Sciences Thinking Informs Popular Music Analytics".

See Page 2 for details

Dr. William F. Carroll Activities in Richland

Public Talk April 22nd 2016

Statistics and the Shirelles: How Physical Sciences Thinking Informs Popular Music Analytics

Human beings love lists, especially lists of the "Best of All Time." But very seldom can direct comparison be made between things that had their heydays in different times—whether football teams, home run hitters, boxers or even songs. So how might you get to a list of the "Best" records of all time? Is that only a subjective determination—"It's what I like"—or are there objective measures that could be used?

This talk starts that analysis by comparing the history on the Billboard charts of records that were popular between 1958 and 1989, including the methodology for creating the charts and how it varied with time. Then various schemes for determining the strongest charting songs are compared.

Oh yes—and there will be some audio lists including the 20 strongest charting records of those 32 years. And some surprises: Not one of them entered the charts after 1983. The reasons are kind of surprising.

In the end we'll learn how various data handling and thinking techniques used in the physical sciences help with the analysis of music charts, and how a number of different approaches can be brought to consensus by these techniques. Yes, that's right. It's Moneyball for popular music.

4:00pm – 6:00pm, HAPO Community Stage in John Dam Plaza, Richland

ACS Career Pathways Workshop April 21st 2016

Resume Construction

11:00am – 1:00pm, PNNL EMSL Auditorium and open to public

Once you've identified the kind of position you want, the resume is the document that will help you get the interview. This workshop reviews the purpose and components and structure of a resume portfolio as well as an effective cover letter.

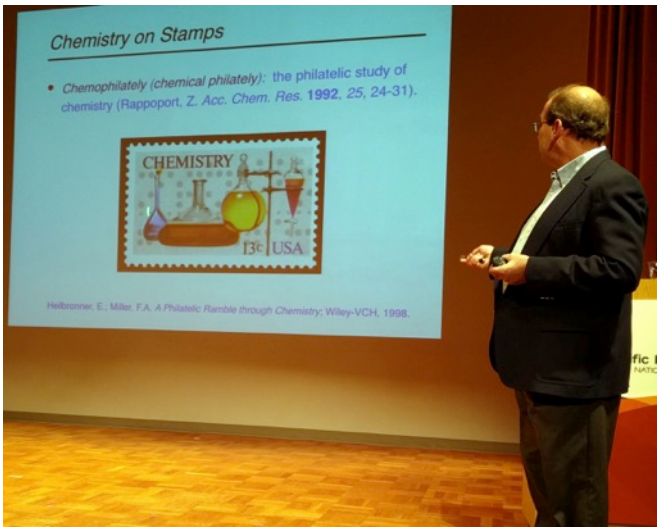
Industry

4:00pm – 6:00pm, PNNL EMSL Auditorium and open to public

This workshop focuses on determining the goodness of fit between a job seeker and industry, finding a job, and making a successful application. It includes attention to both traditional laboratory and outside the lab positions where chemists can and have made a contribution to industry.

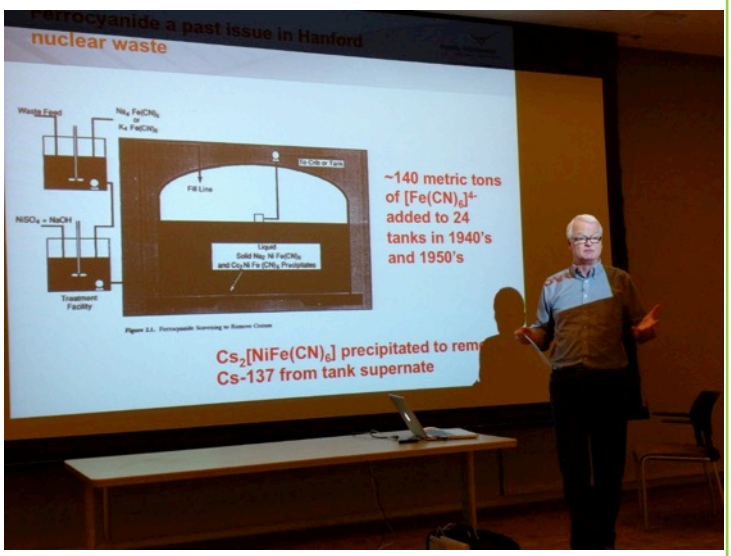
Science Café

The Richland Section hosted a Science Café on Monday, April 4 on the subject of Chemistry as portrayed on the postal stamps of various countries. Prof. Dan Rabinovich, Professor of Chemistry at the University of North Carolina at Charlotte, presented a talk in the Battelle Auditorium in Richland. The title of the talk was "The World of Chemistry on Postage Stamps". A surprisingly large number of stamps have been issued to commemorate scientific discoveries or to honor well-known scientists. Prof. Rabinovich presented postage stamps and other philatelic materials pertaining to the history of chemistry. He discussed the discovery and sources of certain elements, chemical structures and formulas, laboratory equipment, biochemistry, and various aspects of the chemical industry as seen in stamps.



More than seventy students and faculty at Eastern Oregon University in La Grande, Oregon attended a Science Cafe' featuring Dr. Dave Heldebrant of PNNL on Thursday, February 18. In his seminar entitled "Towards 2030: Bridging the Knowledge Gap for Solvent Development for Post-Combustion CO_2 Separations", Dr. Heldebrant discussed his research focused on alternative solvents for CO_2 sequestration. The talk was very engaging and Dr. Heldebrant received a record number of questions at the end of his presentation. The Science Cafe' was sponsored by the Richland Section and the EOU Student Members.

Dr. Samuel A. Bryan of Pacific Northwest National Laboratory delivered a talk at the Science Café hosted by the Richland Section on February 10 in the Richland Public Library. Dr. Bryan is an internationally recognized expert on environmental contamination monitoring processes and controls. He is a past Chair of the Section and has twice won the ACS ChemLuminary Award that recognizes members' efforts to promote chemistry and the chemical sciences in local areas. His presentation entitled, "Two Decades of Process Monitoring Directed toward the Nuclear Fuel Cycle," focused on the use of spectroscopy-based process monitoring from the 1990s to present, which covered everything from ground water contaminant detection to tank waste and nuclear fuel reprocessing solutions. Dr. Bryan also highlighted the students, postdoctoral researchers, and university partners whose participation made his work enjoyable and possible.



Nurturing the Next Generation of Chemists

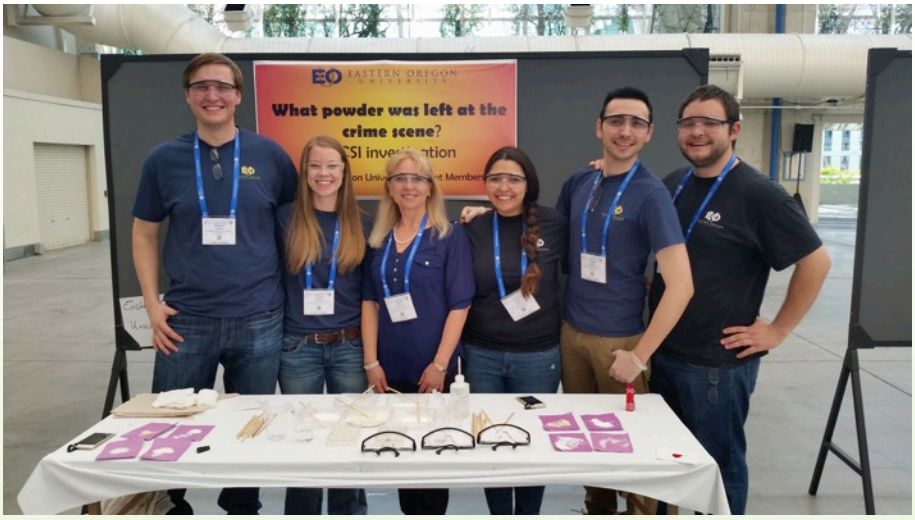
The Richland Section Board approved a student travel grant of $2000 to support the travel expenses of twenty-one EOU students to attend the ACS Spring 2016 National meeting in San Diego, CA. The students met the Mole, and attended the ChemDemo Exchange on Sunday, March 13. The students also participated in a fascinating activity entitled "What powder was left at the crime scene?" This was a forensic investigation based on the 2016 National Chemistry Week theme "Solving Mysteries through Chemistry". Participants also explored the world of microscopy using the smart phone microscopes developed by Rebecca Erikson of PNNL.

The Board also approved a student travel grant of $1000 to enable Luke Damstedt, an honors chemistry major from Columbia Basin College, to attend the Northwest Regional Meeting of the ACS (NORM 2016) in Anchorage, Alaska, June 26-29. Luke will be presenting a poster on his research entitled "Analysis of the Volatile and Semi-Volatile Constituents of *Pinus flexilis* Essential Needle Oil by GC/MS Techniques".

Our local section will have a booth in the Biological Sciences Facility at Pacific Northwest National Laboratory for the annual Take Our Daughters and Sons to Work Day on April 28. The booth will include information on the ACS national chemistry poetry competition and science demos. Section members will be present from 1:30 pm to 3:30 pm at the booth to answer questions and discuss Chemistry with the attendees.

Sci-Mix where the Chem Club presented a poster as successful ACS Student Chapter

The Students meet the Mole at San Diego

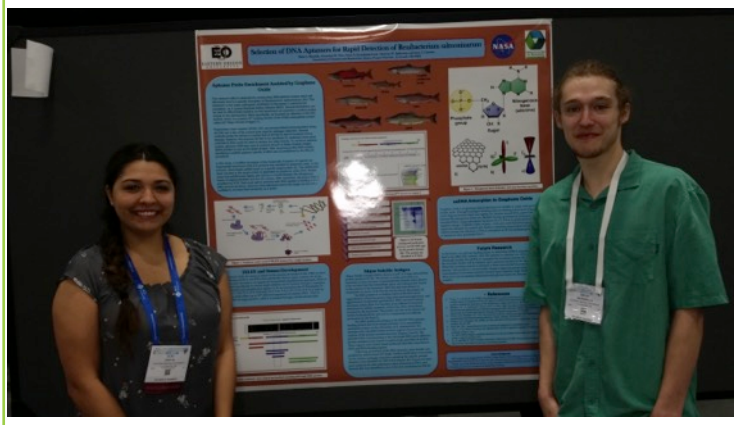


What powder was left at the crime scene?

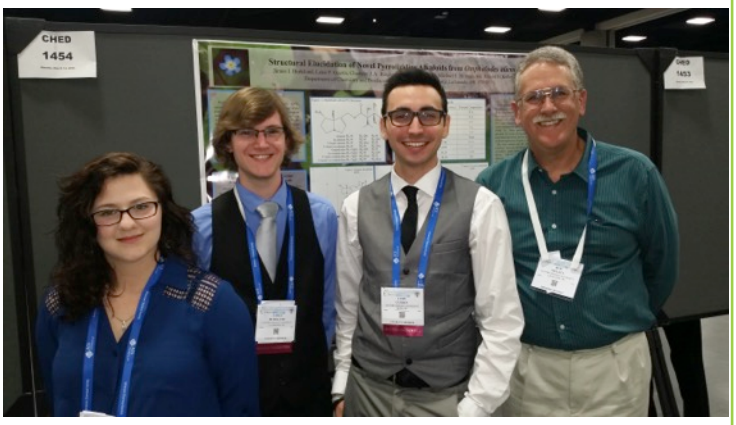
A forensic investigation based on the 2016 National Chemistry Week theme "Solving Mysteries through Chemistry"

Eastern Oregon University Chemistry Club shines bright at ACS San Diego

Another memorable trip for the Eastern Oregon University Chemistry Club members was made possible by the generous support of the Richland Section. Twenty-one students and three faculty attended the 251st National Meeting held this past March in San Diego. The La Grande Chapter was once more recognized with an outstanding award, one of 54 in the nation to receive such award and the only one in the state of Oregon! The outstanding award, presented by the Society Committee on Education (SOCED), recognized activities that the club performed during the 2014-15 academic year ranging from community outreach such as the Girls in Science and Saturday Science events to professional networking and engagement in undergraduate research. EOU students attended technical sessions where they presented seven research posters, as well as Sci-Mix where they were featured as one of the successful student chapters, and participated in the Chem Demo Exchange with activities revolving around next year NCW theme of forensics. Students worked very hard fundraising for the trip and, the Richland Section provided much appreciated support in the form of a $2,000 travel grant. The students could not have made the trip without this support!



Lexi Olivo (left) and Brian Mandella (right) presenting their research poster at the Undergraduate Poster presentation on Monday March 14



Undergraduate Poster presentation on Monday March 14, from left to right: Charlette Burghard, James Burkland, Luke Guerin and Professor Ron Kelley

Chemistry Becomes Mysteriously Fun

Your kitchen is full of white powders, if you take away their labels can you figure out what they are? Nearly 25 Lewis and Clark Elementary School Science Club members (4th and 5th graders) learned about chemical reactions with Sandy Fiskum, David Heldebrant, and the Richland High School Chemistry Club volunteers. For four consecutive Friday afternoons in February they tested an assortment of kitchen powders—sugar, flour, salt, baking soda, chalk, alum, Epsom salts, and cream of tartar. They tested the powders with iodine, water, red cabbage indicator, vinegar, and heating. The students recorded their observations and built their "answer key" that they used to determine the Unknowns. All students figured out the identity of single powders, most figured out the double mixtures, and a few clever groups figured out the triple mixtures! These kids are smart. If a powder dissolves in water, turns the indicator purple, and boils and chars under heat, can you figure out what the chemical is? Our Science Club students did! The grand finale of our chemistry month was to help the students create "elephant toothpaste."

The Science Club is spearheaded by Cheryl Antonio with help from Pat Lee. It continues all school year with different science subjects; chemistry was the focus in February. Cheryl thanks the Richland Section ACS for the $50 contribution used to pay for supplies.

Obituary: Jack L. Ryan

Jack Lewis Ryan passed away on March 20, 2016, surrounded by his loving family. Jack was a 60-year member of the American Chemical Society, past Chair of our local section, and recipient of the 1991 Chemist of the Year award.

He was born in Dallas, Oregon on May 14, 1933, to Charles W. Ryan and Cornie A. (Lewis) Ryan, both of east Tennessee. Jack attended the one-room Bridgeport Grade School and later Dallas High School. He left home at sixteen to study at Oregon State College (now Oregon State University), where he graduated with a Bachelor's of Science Degree in Chemistry in 1953, and a Master's of Science Degree in Chemistry in 1956.

His professional career spanned over fifty years at the Hanford Site, primarily with the Pacific Northwest National Laboratory. He made significant scientific and technical contributions in fundamental and applied inorganic, physical, and analytical chemistry of the actinide elements, in addition to the chemistry of the lanthanide and d-group transition elements. In 1974, Jack co-invented catalyzed electrolytic dissolution of plutonium oxide. The merit of this invention is evidenced by the installation of plant-scale processes using this technology in France and the United Kingdom. His original works in actinide chemistry are published in numerous scientific journals and books and are recognized by chemists worldwide. He authored more than 100 technical articles during his career. Some of Jack's contributions to chemistry are catalogued in the Library of Congress. In 1999, the Actinide Separations Conference recognized the importance of Jack's contributions by honoring him with the Glenn T. Seaborg Actinide Separations Award--a national award recognizing significant and lasting contributions to separating actinide elements.

Jack was an avid and skilled outdoorsman. He found great joy in mountain climbing, hunting, fishing, crabbing, mushrooming, gardening, cutting firewood, and roaming the land searching for wild foods, abandoned crops, and usable discarded items. It was common for Jack to venture miles off the roads and trails in search of the ultimate hunting or fishing experience. He was at home with nature and all of its rigors. His lineage can be traced to Meriwether Lewis, which comes as no surprise.
Jack truly was a unique individual. He was frugal to a fault, spending only a thousand dollars each year on food and clothing items. His favorite shopping experience was poking around Goodwill. He enjoyed going barefoot and performed all of his gardening duties, including spading, without shoes. Television was an unnecessary luxury. The local newspaper, National Geographic magazine, and various technical journals provided Jack ample information to stay well-informed. He was stubborn yet fair, and honest and loyal in his interactions with others. He was a keen observer of his surroundings and work activities, and enjoyed recounting his observations in detail. He leaves us in awe of an interesting and adventurous life well-lived. His ashes will be scattered in several beautiful nature locations that were very special to him.

In lieu of flowers, please contribute to the Leukemia and Lymphoma Society in Jack's name. A remembrance service and memorial will be announced at a later time.

Upcoming

- Nuclear Science Merit Badge on April 9 and 16
- Dr William Carroll Visits Richland on April 21 and 22
- Chemists Celebrating Earth Day on April 22
- Chemistry Olympiad on April 23
- Take Our Daughters and Sons to Work Day on April 28

Visit http://acs.labwork.org/calendar.html

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