



PNW-SETAC Newsletter

<http://www.pnw-setac.org/index.html>

P.O. Box 5331, Bellingham, WA 98227-5331

Summer 2014

Pacific Northwest Chapter - Society of Environmental Toxicology and Chemistry

Officers

John Stark, President
Washington State University, Puyallup
starkj@wsu.edu

Roger Thomas, Vice President
Idaho State Insurance Fund
rhwthomas@gmail.com

Ryan Loveridge, Treasurer
CH2M Hill
Ryan.Loveridge@CH2M.com

Maggie Dutch, Secretary, Newsletter Editor,
Washington State Department of Ecology
pnwsetac@comcast.net

Teresa Michelsen, Meeting Coordinator,
Avocet Consulting
teresa@avocetconsulting.com

Board of Directors

Patrick Moran, At-Large (Gov)
US Geological Survey
pwmoran@usgs.gov

Jerome Laroulandie, At-Large (Industry)
Maxxam Analytics
JLaroulandie@maxxam.ca

Ruth Sofield, At-Large (Academia)
Western Washington University
Ruth.Sofield@wwu.edu

Mandy McDougall, At-Large (Student)
Simon Fraser University
mmcdouga@sfu.ca

Registered Agent, Webmaster
April Markiewicz
Western Washington University
April.Markiewicz@wwu.edu

President's Address

John Stark
PNW-SETAC President
Washington State University, Puyallup



Dear PNW-SETAC Members,

Thanks for your continued support of our chapter and for your enthusiasm for environmental chemistry and toxicology and how these issues impact our area of the world.

We had a very successful 23rd annual regional chapter meeting in Tacoma, WA. Our theme was "Urban Waters." The workshops were split between Urban Waters in Tacoma and the Washington State University, Puyallup Research and Extension Center. We had good attendance and many positive comments about the high quality of the workshops.

The Holiday Inn and Suites in Downtown Tacoma was a nice venue for our meeting. I know that some of you got out and enjoyed the night-life in Tacoma, which really is an interesting city.

Of course our meeting would not be a success if not for all of the hard work of our board members and volunteers and the generous donations from our sponsors. In particular, I want to thank our board for all that they do for the chapter. I also want to thank all of our volunteers, the instructors of our short courses – **Rita Hummel, T.J Knappenberger, Lori Larson, Jennifer McIntyre, Mark Palmer, Joy Rodriguez, Joel Baker, Justin Miller-Schulz, Stuart Magoon, and Greg Perez**. Thanks also to Student Award judges: **Fran Solomon, Carlie Herring, Siobhan Sloan-Evans, Bruce Duncan, Annie Johns, Aaron Edgington, Melanie Pylatuk, Kathryn Kuivila, Marilyn Roberts, and Jeff Wirtz**.

A special thanks goes out to our Corporate members, **Nautilus Environmental** and **Maxxam Analytical** and our sponsors - **Avocet Consulting; Anchor QEA, LLC; Maxxam Analytical; Nautilus Environmental; Exponent; and Tetra Tech**.

I would like to thank incoming and outgoing board members and officers. **Heather Henson-Ramsey**, Lewis-Clark State College is our outgoing past president. Heather has been a great help to me and I really appreciate her support. Thanks to **Teresa Michelsen**, Conference Organizer, who worked so hard to make this meeting a success and **April Markiewicz**, who continues to serve as "chapter mom" and is also one of the people that makes things happen in our chapter year-in and year-out. Thanks also to **Mandy McDougall**, Simon Fraser University for her contributions as the outgoing At-Large (Student) this past year.

We've had several people agree to run for positions on the Board of Directors that will open up at the end of 2014, and will

look forward to hearing from all who are interested in running in our September election. If this is something you might be interested in, please send me a letter of intent and your CV by September 1st. The election for these positions will be held during the month of September.

Please join me in welcoming our incoming President for 2015 – **Roger Thomas**. We look forward to working with Roger in 2015.

It has really been a pleasure interacting with all of all of you this past year as chapter president. Our 24th annual meeting will be held in Portland with an emphasis on complex site remediation, and I look forward to seeing you all there.

Past President's Farewell Address

Heather Henson-Ramsey
PNW-SETAC Past President
Lewis-Clark State College
Lewiston, Idaho



Hello members! It has been a real honor to serve as vice-president, president, and past-president over the past 3 years. PNW-SETAC is an incredibly active chapter with a diverse and interesting membership. It has been fun to interact with so many talented scientists. I have enjoyed working with all the board and

officers immensely. They are an extremely talented and dedicated group of individuals.

Highlights of my “tour of duty” include helping to design educational and fun conferences, working with talented students and helping to guide them in their chosen profession, and interacting with North American SETAC. It is fun to learn how professional conferences are organized and function. Becoming involved with an organization such as PNW-SETAC, has been invaluable experience for me. I highly recommend volunteering to serve on the board. I have made life-long friends as a result of my service. I look forward to continuing to be involved in the chapter and hope to see all of you at future conferences.

Officer/Board Member Positions Open

We will have 2 open positions for officers, including **Vice-President** and **Treasurer**. There will also be three Board of Directors *At-Large* positions, including **Industry, Government, and Student representatives**. If you are interested in any of these positions, please send a letter of intent and your CV to **John Stark** starkj@wsu.edu by September 1st. We will have elections during September and announce new board members in October. Thanks!

Chapter Meeting Highlights

Stormwater and More!

Our annual chapter meeting in April was once again a great success due to the careful planning by your board members and active participation by all members in attendance. Special thanks go to **Teresa Michelsen**, Meeting Coordinator extraordinaire, for the time and energy she spent leading the planning and organization of this event.

PNW-SETAC Treasurer, **Ryan Loveridge**, reports that the meeting generated more than \$9,165 in revenue for our chapter, not including corporate donations and before costs. Registration was again high, and included 41 students, 56 from academia, 16 with government, and 26 with industry.

The cities of Tacoma and Puyallup were excellent venues for our meeting’s focus on urban stormwater issues. The Holiday Inn Express in downtown Tacoma provided comfortable lodging and conference rooms, and was conveniently located near our workshop venues. The four workshops covered a wide range of stormwater topics, all critical in our understanding and mitigation of the effects of contaminated stormwater on the ecosystem.

A brief summary of three of the workshops was provided by our PNW-SETAC members:

Clarks Creek: Science, Restoration, and Education, WSU, Puyallup

Heather Henson-Ramsey, Lewis-Clark State College, Lewiston, ID

This workshop focused on citizen science and how to get buy-in from the community for restoration efforts.

Clarks creek is a salmon-bearing stream that feeds into the Puyallup River. Much of the restoration activity at the creek is aimed at improving salmon habitat.



Tanyalee Erwin (pictured above), WSU-Puyallup Faculty member and Assistant Director of the Washington Stormwater Center, and **Laurie Larson**, program specialist at Washington Stormwater

Center, discussed projects designed to restore Clark Creek.

As an educator, I was most impressed by the pathogen control at DeCoursey Pond, which feeds into Clarks Creek. They are battling fecal coliform problems from the ducks on the pond. Research showed that park visitors feeding the ducks had greatly increased the duck population and duck poo!

What was ingenious was how community dealt with this problem. They had school children design educational posters, discouraging visitors from feeding ducks and had a contest in which the mayor selected winning posters. The pond is now considered a “living classroom” and the Puyallup school district does regular laboratories on site.



I love the idea of using kids to pass along messages to their parents and to educate adults about wildlife habitat concerns. It is also a brilliant way to incorporate STEM curriculum into the classroom.

Other aspects of the tour focused on restoring buffers along the creek and best management practices for water quality. In fact, after the conference, we got to assist with plantings along a culvert on WSU property that runs into Clarks Creek.

Additionally, there was a demonstration planting of recommended plants that homeowners could use to create attractive and effective riparian landscapes. **Rita Hummel**, Associate Professor WSU-Puyallup, showcased a study in which researchers investigated homeowner preference in landscaping. Why work against them, when you can work with them? The study highlighted homeowner concerns about their landscaping and

allows for land managers to better communicate with all stakeholders.

Stormwater, Soil, Plants, and Fish Research, WSU-Puyallup

Patrick Moran, US Geological Survey, Tacoma, WA (summary)
Scott Tobiason, Windward Environmental (photos)

The WSU- Puyallup Workshop began with an overview of the facility by current WSU Puyallup Director (and your PNW Chapter President) John Stark. John and others discussed the recent establishment of Low Impact Development (LID) and Stormwater research sections and infrastructure on the Puyallup campus.

Post Doc **T.J. Thortenstein** discussed recent research in the new rain gardens and 9 and 16 cell mesocosm facility (pictured below). The facility allows for replicated comparisons between types of pervious and impervious surfaces, such as asphalt and concrete.



Raingarden Mesocosm research system at WSU Puyallup



Bioretention columns for stormwater research at WSU Puyallup

Various types of native grasses and plants are currently being tested for their ability to remove stormwater contaminants that runoff from impervious surfaces. Many future

research questions can be addressed in this state of the art facility.

Jenifer McIntyre, a researcher at WSU Puyallup, then discussed her work with the National Oceanic and Atmospheric Administration (NOAA) on the impacts of stormwater to coho salmon from contaminants, and PAHs in particular, found in highway runoff.



Salmon holding tanks at the WSU-NOAA Salmon Research Laboratory



Washington Stormwater Center Roofing Material Stormwater Runoff Study

New Analytical Tools for Environmental Toxicology and Chemistry, Center for Urban Waters, Tacoma

Maggie Dutch, WA State Department of Ecology, Olympia, WA

In this workshop, participants heard directly from analytical chemists about advances in their equipment and their recommendations and findings regarding analysis of anthropogenic chemicals entering our waterways through stormwater.

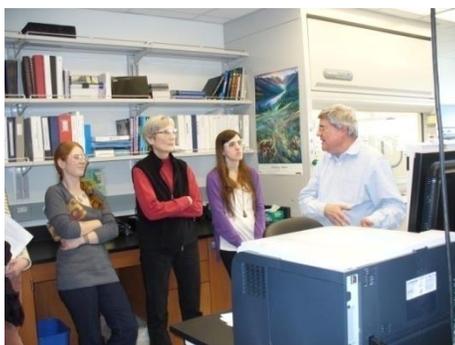
Joel Baker, Science Director for the Center for Urban Waters at UW-Tacoma, welcomed us to the building and gave us a brief introduction to this “green” built facility, which includes chemistry labs run by both the City of Tacoma and the University of Washington – Tacoma.

Stuart Magoon, Assistant Division Manager for the City of Tacoma Environmental Services Laboratory, welcomed us to the Tacoma chemistry lab, which has a staff of 18 chemists.

Greg Perez, Senior Environmental Analyst and supervisor of the organic chemistry group, gave us an informative overview of their work to analyze semivolatile compounds in marine sediment using both the traditional single quadrupole gas chromatography with mass spectrometry (GC/MS) and their newer triple quadrupole gas chromatography with tandem mass spectrometry (GC/MS/MS).

The older GC/MS method required extraction of 10g of sediment, followed by extensive cleanup, then time and labor intensive analyses by GC/MS requiring multiple injections and dilutions. This method often has low recovery and high reporting limits. The newer GC/MS/MS methods require extraction of only 2g of sediment, uses less solvent, and has better cleanup and recovery and lower reporting limits than the GC/MS.

Greg also told us about their work to improve quantification of bis-2-ethylhexylphthalate, di-n-butylphthalate, benzoic acid.



Greg Perez leading the tour of the City of Tacoma analytical chemistry lab

Justin Miller-Schulze, a postdoctoral researcher in Joel Baker's laboratory at UW-Tacoma, gave us a tour of the UW lab and explained his two major projects. These included 1) looking at stormwater treatment for phosphorus removal, and 2) looking at tracers of human wastewater as markers of bacterial contamination.

Justin explained their instrumentation which included 1) single quadrupole GC/MS, which has better quantification capabilities with targeted analyses and is better for detection of more soluble compounds, 2) the triple quadrupole high performance liquid chromatography tandem mass spectrophotometer (HPLC/MS/MS(QQQ)) which is better at looking for polar compounds which are harder to volatilize, and 3) the HPLC/MSMS quadrupole time of flight (QTOF). This instrument is best at looking for a broad spectrum of chemicals. It is more for exploratory work and screening, and less quantitative than the other instruments.

Justin then explained two case studies he is working on. The first examines air quality in Tacoma and the Tacoma tide flats through measurement of PAHs and the relationship between seasons, air temperature, and particulate matter measured from the roof of the CUW building. The second examines chemicals of emerging concern chosen as tracers of human sewage in both Puget Sound waterways and at a base camp on Mount Everest!

Both labs were very impressive, and participants came away with a better understanding of the work conducted at these labs.



Justin Miller-Schulze in the University of Washington-Tacoma's chemistry lab

Muddy Waters!

In addition to our workshops, our meeting was kicked off with an excellent first session of talks entitled "Muddy Waters - Urban Stormwater Run-off". Four excellent presentations were focused on our main theme of Urban Stormwater.

The four speakers included **Scott Tobiason** (measuring copper released from copper roofs in stormwater runoff), **Jenifer McIntyre** (green stormwater infrastructure preventing toxicity from urban runoff), **Julann Spromberg** (coho salmon pre-spawn mortality reduced by bioremediation), and **Bruce Duncan** (EPA's stormwater calculator demo).

At the end of their presentations, they, and chapter president **John Stark**, participated in an interesting and thought-provoking interactive panel/audience discussion, facilitated by **Teresa Michelsen**, about current urban stormwater issues.



Stormwater Panel Discussion: Teresa Michelsen, Bruce Duncan, Scott Tobiason, Jen McIntyre, Julann Spromberg, and John Stark (left to right)

Many Thanks to Our Meeting Sponsors!

Special thanks to our **Corporate Members** **Nautilus Environmental** (for the third year in a row!) and **Maxxam Analytical**. Their level of giving goes a long way towards making our conference both affordable and high quality! Many thanks as well to our stalwart **Corporate Sponsors: Anchor OEA, Avocet Consulting, Exponent, Tetra Tech, Windward Environmental, and WSU/Washington Stormwater Center** for their generous support that enables us to fund student travel and presentation awards, as well as provide refreshments at our breaks!

2014 Student Winners

April Markiewicz

Western Washington University

Fantastic Student Presentations!

This year, 41 students attended the annual meeting, representing a whopping 40% of meeting attendees, and 18 of these students gave platform or poster presentations. Presenters included 9 Bachelor of Science, 7 Master of Science, and 2 Ph.D. students, representing Oregon State University, University of Washington, Western Washington University, College of Idaho, University of the Fraser Valley, Simon Fraser University, and the University of Alaska, Southeast.

This year was no exception in terms of the intense competition between the student presenters for the Best Student Presentation Awards. The quality of the student research topics and presentations was very impressive, and it was a difficult task for the judges to select winners. All of the students are commended for their hard work!

We had three sets of four Student Presentation Award judges representing our student, academic, private/consulting, and government PNW-SETAC constituents. They were: **Aaron Edgington** (Oregon State University), **Carlie Herring** (Western Washington University), **Siobhan Sloan-Evans** (Windward Environmental), **Burt Shephard** (US EPA Region 10), **Bruce Duncan** (US EPA Region 10), **Annie Johns** (Western Washington University), **Fran Solomon** (Evergreen State College), **Ryan Loveridge** (CH2M Hill), **Melanie Pylatuk** (Simon Fraser University), **Kathryn Kuivila** (US Geological Survey), **Marilyn Roberts** (University of Washington), and **Jeff Wirtz** (Compliance Services International).

The judges were tasked with not only selecting the winners and determining the award distributions, but also with providing written comments to the students afterwards to help when giving future presentations. We sincerely thank the judges for their time, effort, and

valuable feedback to the student presenters!

This year, judges selected seven winners, receiving five Student Presentation Awards. The winners were:

Jessica I. Lundin, a Ph.D. student in the Center for Conservation Biology at Washington State University, received First Place Best Platform Presentation Award for her talk entitled, "*Persistent Organic Pollutants (POPs) in the Puget Sound Ecosystem: An Evaluation of POPs in Fecal Samples of Southern Resident Killer Whales*". Her presentation generated a lot of post meeting buzz about the versatility of dogs and their use in sniffing out elusive whale poop in the Salish Sea. Who knew???



Jessica Lundin

Mandy McDougall, a M.Sc student in the School of Resource and Environmental Management at Simon Fraser University (and our PNW-SETAC At-Large Student Representative) shared the First Place Best Master's Level Poster Presentation Award for her research titled, "*Comparing Trophic Magnification of Select Perfluoroalkyl Acids (PFAAs) in Aquatic and Terrestrial Food Webs*".



Mandy McDougall

Jeremy Jackson, a M.Sc. student in the Department of Biological Sciences at Simon Fraser University shared First Place Best Master's Level Poster Presentation Award for his research titled, "*The Effects of Copper Exposure on the Swimming Performance and Osmoregulatory Ability of Juvenile Rainbow Trout (Oncorhynchus mykiss)*".



Jeremy Jackson

Jordan Jackson and Amberose Kelly, B.S. undergraduate students in the Department of Environmental Sciences in Huxley College of the Environment at Western Washington University won the First Place Best Undergraduate Poster Presentation Award for their research titled, "*Lichens as Air Quality Biomonitorers along the Pacific Northwest*".

Rail Corridor in Bellingham, Washington”.



Amberose Kelly and Jordan Jackson

Christopher San and Courtney Fung, B.S. undergraduate students in the Department of Environmental Sciences in Huxley College of the Environment at Western Washington University won the Second Place Best Undergraduate Poster Presentation Award for their research titled, “*Investigation of Silver Nanoparticle Toxicity at Different Temperatures*”.



Courtney Fung and Christopher San

Each award winner received a cash award, one-year membership to PNW-SETAC, one-year membership to SETAC NA, travel funds to attend the SETAC NA meeting in Vancouver, B.C. Canada November 9-13, 2014 (you must apply using our online Student Travel

Application form!), their names and award engraved on the PNW-SETAC Award Winners Perpetual Plaque with previous winners, and added to the list of student award winners on the PNW-SETAC Students webpage.

The plaque is displayed at PNW-SETAC and SETAC NA meetings and resides at the Institute of Environmental Toxicology, Huxley College of the Environment, Western Washington University during the remainder of the year.

As you may know, PNW-SETAC takes student participation at its meetings very seriously, as do our Corporate Sponsors. Donations from our Corporate Sponsors are used to help defray meeting costs, as well as to fund student travel and student presentation awards.

Our sincere thanks for their great support! Thanks again to our Corporate Sponsors, SETAC NA for all the wonderful books that we give to our student attendees, judges, and student presenters for another successful year of student participation!

Our New Chapter Website!!

If you have not yet visited our new PNW-SETAC chapter website, you should get clicking here: <http://www.pnw-setac.org/> It is chock full of helpful information about our chapter and will help you stay informed about upcoming meetings and other news.

Many thanks to **April Markiewicz**, “chapter mom”, for her work to get this new site up and running for us. Also, many thanks to **Teresa Michelsen**, former webmaster, for her creation and years of maintaining our old website.

2015 PNW-SETAC Annual Meeting – Focus on Complex Site Remediation

The focus of the 2015 meeting will be on complex site remediation. This event will be hosted in Portland, Oregon during the second half of April. Stay tuned for details on the exact dates and location!

Tox Talks - Graduate Student Symposium Simon Fraser University

January 17, 2015

This symposium will focus on graduate student research in environmental and human-related chemistry and toxicology.

Stay tuned for more details, or contact: toxtalks.sfu@gmail.com

SETAC North America 35th Annual Meeting: Vancouver, BC, Canada

November 9 –13, 2014



Vancouver Convention Center



(Logo courtesy of www.setac.org)



The organizers of this meeting are looking for volunteers to help out with various tasks during the meeting. **Mandy McDougall**, our student-at-large PNW-SETAC board member will be the student representative volunteer for this meeting. Any students interested in volunteering should get in contact with Mandy. Our non-student members who wish to help out should get in touch with **April Markiewicz**.

Registration: Opens July 7th.

To find out more about the meeting, including the daily schedule and housing information, visit: vancouver.setac.org/

SETAC Snippets

SETAC Europe 25th Annual Meeting

Environmental Protection in a Multi-Stressed World: Challenges for Science, Industry, and Regulators
3-7 May 2015, Barcelona, Spain

SETAC Latin America 2015

TBD, Buenos Aires, Argentina

SETAC North America 35th Annual Meeting

1-5 November 2015, Salt Palace Convention Center, Salt Lake City, UT

SETAC Europe 26th Annual Meeting

22-26 May 2016, Nantes, France

7th SETAC World Congress/SETAC North America 37th Annual Meeting

6-10 November 2016, Rosen Shingle Creek, Orlando, FL, USA

Learn more at:

<http://www.setac.org/?page=AnnualMeetings>

Coastal and Estuarine Research Federation



Grand Challenges in Coastal & Estuarine Science: Securing Our Future

8-12 November 2015
Portland, Oregon

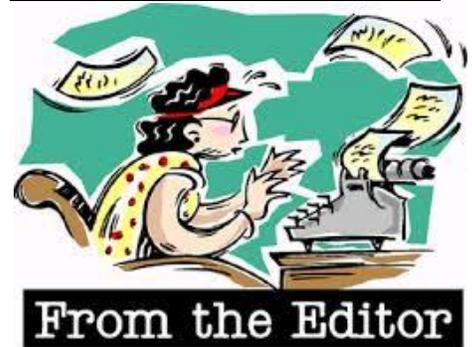
<http://www.erf.org/assets/updated%20cerf%202015%20flyer.pdf>

Pacific Estuarine Research Federation



37th Annual Meeting
Pacific Estuarine Research Society
April 3 - 5th, Newport, Oregon

<http://www.pers-erf.org/pers2014.html>



Articles for the newsletter or announcements for the membership may be submitted to me at PNWSETAC@comcast.net at any time.

Maggie Dutch

Washington State Dept. of Ecology
PNW-SETAC Newsletter Editor