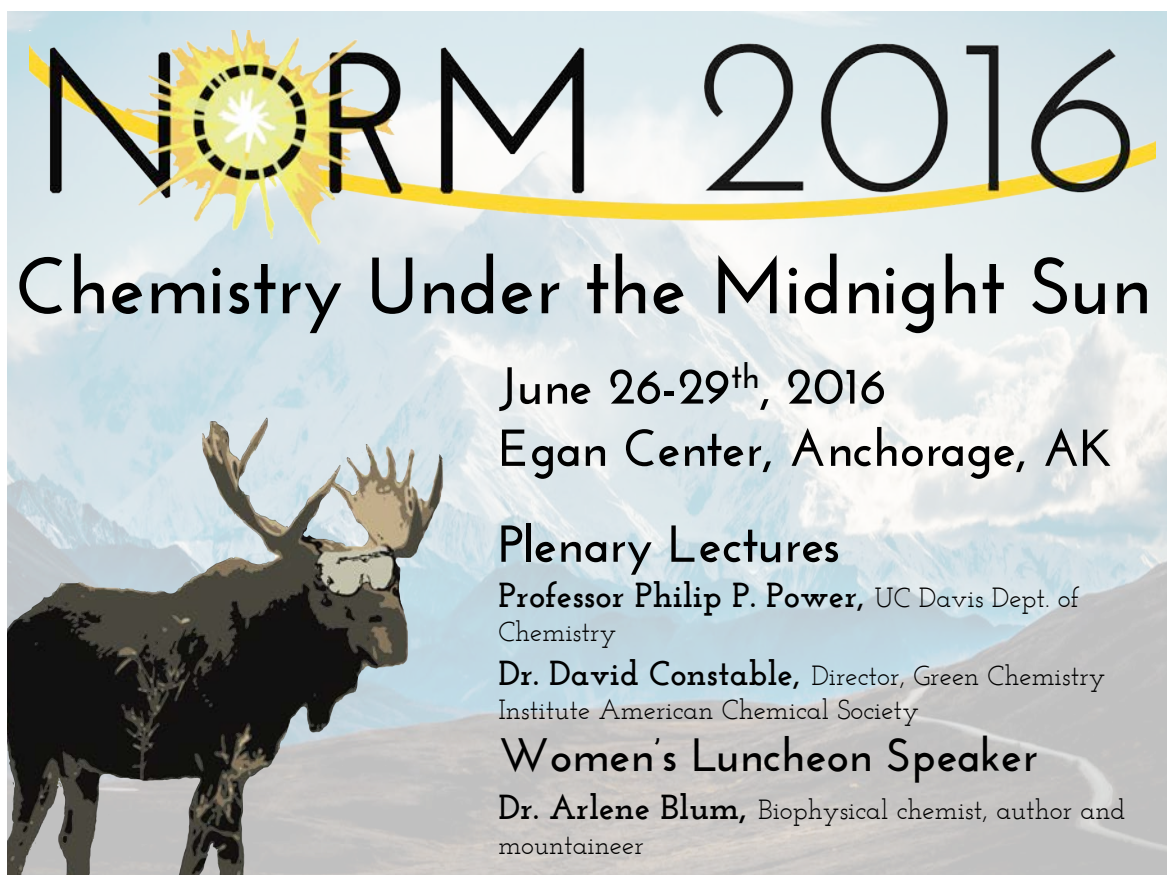




The 71st Northwest Regional Meeting of the American Chemical Society

Meeting and Technical Program

A large graphic for the meeting. It features the text "NORM 2016" in a large, black, sans-serif font, with a stylized sun icon integrated into the letter "O". Below this is the tagline "Chemistry Under the Midnight Sun" in a smaller, black, sans-serif font. The background is a light blue sky with white clouds and a range of mountains. In the foreground, a moose with large antlers is shown in profile, facing right. The moose is dark brown with some lighter patches on its body.

June 26-29th, 2016
Egan Center, Anchorage, AK

Plenary Lectures
Professor Philip P. Power, UC Davis Dept. of Chemistry
Dr. David Constable, Director, Green Chemistry Institute American Chemical Society

Women's Luncheon Speaker
Dr. Arlene Blum, Biophysical chemist, author and mountaineer

June 26-29th, 2016
Egan Convention Center
555 W. 5th Ave.
Anchorage, AK

Meeting At a Glance

	Lobby	Room 1,13,14	Room 2,12	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8	Room 9	Room 10	Room 11
Sun. June 26	Exhibitor Setup (7am-)		General Poster Session (630-830pm)	Chips & Chat, Mixer/Welcome (5-630pm)								
<i>5k Fun Run (630am) - Sign up at Hilton Front Desk on Sun., or at Poster Session</i>												
Morning	Exhibitor Booths				Inorganic Chemistry	Cope Symposium	Environ. Chemistry	Entrepreneur Symp. I	Leading without Authority Workshop			
Afternoon		Opening Plenary (115-215pm)		Women Chemist Luncheon (1130-1pm)	Inorganic Chemistry	Organic Chemistry	High Latitude Pollution	Entrepreneur Symp. II		Bio-chemistry		Undergrad. Writing Workshop
Evening					Alaska Native Heritage Center/Salmon Bake (Buses available, 7-9pm)							
Morning	Exhibitor Booths				Trans. Metal Chemistry Symp. i	Applying Methods in Education Symposium	Analytical/Radiochem. Harsh Env. Symposium		Finding your Pathway Workshop	Drug Discovery Symposium	Molecular Modeling Workshop	Undergrad. Research Workshop (1015-1115am)
Afternoon		Closing Plenary (115-215pm)		Undergrad. Luncheon (1130-1pm)	Trans. Metal Chemistry Symp. II	Student Engagemnt	Analytical/Physical Chemistry	Geochem. High Latitudes	Resumé Review Workshop	Neuro-inflamm. Symp. I	Comp. Chemistry Symp. I	NMR Workshop
Evening				Awards Banquet - Hilton Chart Rm (7-9pm)								
Morning	NOR Board Breakfast (7-730am), NOR Board Open Mtg (730-9am) Hilton Dilling. Rm								Teaching STEM from Remote Locations Workshop	Neuro-inflamm. Symp. II	Comp. Chemistry Symp. II	
Thurs. June 30th				Glacier Train Tours (9:45 AM - various times) Glacier Train Tours (9:45 AM - various times)								



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American Chemical Society

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Immediate Past President, 2017

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June 26, 2016

Dear Northwest Regional Meeting participants,

On behalf of the more than 156,000 members of the American Chemical Society, I am happy to welcome all of you to beautiful Anchorage for the 2016 Northwest Regional Meeting.

The meeting, hosted by the Alaska Local Section, will highlight environmental chemistry in the Arctic, drug discovery and neurochemistry, and computational chemistry. In addition to the diverse technical symposia, the meeting will feature plenary speakers Philip Power of UC Davis, and David Constable of the ACS Green Chemistry Institute®, leadership courses, career workshops, and technical courses to hone your skills.

Join your colleagues on Sunday evening for a 'Chips and Chat' with ACS Governance, and the Opening Mixer with remarks by the Mayor of Anchorage Ethan Berkowitz. On Monday Arlene Blum will present the keynote address at the Women Chemist Luncheon, followed that evening by a delicious Salmon Bake at the Alaska Native Heritage Center. Tuesday evening is bound to be a wonderful evening during the NORM 2016 Awards Reception & Banquet.

With all these events and great symposia, I want to express my special thanks to the NORM general chair Lisa Hoferkamp and program chair William Howard, and to our hosts at the Alaska Local Section for their hard work and dedication to create a great experience here in gorgeous Anchorage.

All the best for a wonderful NORM 2016!

Sincerely,

A handwritten signature in black ink that reads "Donna J. Nelson". The signature is fluid and cursive, with the first name being the most prominent.

Donna J. Nelson
2016 President
American Chemical Society

AAAS ARCTIC DIVISION
PO Box 80271, Fairbanks, AK 99708
<http://arctic.aaas.org>

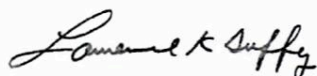
Dear Colleagues:

Welcome to the 2016 American Chemical Society Northwest Regional and American Association for the Advancement of Science Arctic Division Meeting in Anchorage, Alaska. The meeting theme, *Chemistry Under the Midnight Sun*, focuses on collaborations in science, education and current societal issues. It is my hope that the program will prompt discussion on the roles of chemistry in complex systems and science education and result in an exchange of knowledge across the Arctic and Northwest. I anticipate that the meeting will catalyze new collaborations across sub disciplines and engage researchers and educators.

The Arctic Division carries out, within its geographical region, the objectives of the AAAS, "to advance science and innovation throughout the world for the benefit of all people". Open to all scholars who study and work in the Arctic, the Arctic Division AAAS seeks to help them communicate their interests and discoveries to others.

The NORM meeting reflects a tremendous effort for ACS and the Alaska Section. The Program Committee has assembled many excellent sessions. The leadership exhibited by Lisa Hoferkamp and Bill Howard over the last two years has inspired all with the effort and persistence needed to bring this meeting to Alaska.

I am delighted to welcome you to this great land, the last frontier.



Lawrence K. Duffy
Executive Director, Arctic Division AAAS

WELCOME TO ALL ATTENDEES & PARTICIPANTS
American Chemical Society, Northwest Regional Meeting
June 26-29, 2106

Dear NORM Members:

On behalf of Visit Anchorage and all of our member businesses, it is a pleasure to welcome you to Anchorage for NORM 2016.

We are proud of Anchorage, a city with all the amenities of a major metropolitan area, yet with the advantage of being a few short minutes away from the wilderness. Our extensive park system within the city, as well as those throughout the state, are here to be enjoyed. In Anchorage alone we have over 170 miles of paved trails that are used throughout the year. Whether you choose to get out and explore or view the spectacular surroundings from the windows of a rooftop restaurant, visiting Anchorage will be a memorable experience.

Alaskans have always been known for their warmth and hospitality, and our citizens look forward to opportunities to share their special part of Alaska with you. The staff of Visit Anchorage and all of our citizens join in welcoming you and will assist you in any way possible to make your meeting enjoyable.

Sincerely,



Julie Saupe
President & CEO
Visit Anchorage

Visit  Anchorage.net

James R. Johnsen, Ed.D.
President

Butrovich Bldg, Ste. 202, 910 Yukon Drive
P.O. Box 755000, Fairbanks, AK 99775-5000
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UNIVERSITY
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May 23, 2016

Dear Northwest Regional Meeting Participants:

I am pleased to welcome distinguished American Chemical Society scientists and researchers to the 2016 71st Northwest Regional Meeting (NORM 2016) taking place in Anchorage, Alaska from June 26-29, 2016. The organizing chairs – Dr. Lisa Hoferkamp and Dr. William Howard – have put together a great program that includes plenary lectures by Phillip P. Power with the UC Davis Department of Chemistry, and David Constable, Director of the Green Chemistry Institute at the American Chemical Society, along with general and poster sessions.


NORM 2016 topics range from neurochemistry to computational chemistry, to engaging more students in STEM courses. With participants from academia, government and industry, I encourage you to seek out new connections and possible collaborations. NORM 2016 is a great opportunity to find new and innovative ways to work with each other.

During your stay in Anchorage, I invite you to tour the University of Alaska Anchorage campus. We are proud of our state and we welcome you to share it with us.

Sincerely,

A handwritten signature in black ink that reads "James R. Johnsen".

Dr. James R. Johnsen
President, University of Alaska



American Chemical Society
Alaska Local Section

Dear ACS Members and Visitors to NORM2016,

Welcome to our Alaska Local Section's Northwest Regional Meeting for 2016. We are grateful for your participation in 'NORM2016—Chemistry Under the Midnight Sun' and hope that you take the opportunity to meet with colleagues to learn about their exciting work and challenges they experience in the northern latitudes and regions of our vast state.

Conducting and organizing events of this magnitude that engage volunteers across the distances in Alaska always require significant preparation in advance of the roll-out of any program. I wish to express my own gratitude and acknowledgement to key section officers who have contributed significantly to the planning and programming of this event. Lisa Hoferkamp, NORM2016 General Chair, and Bill Howard, NORM2016 Chair of Programming, have extended an enormous amount of time and effort working with both ACS national administrators and our local section members over the past two years to stage and organize this event. Their 'out-reach' goal was to create such an exciting and engaging venue that potential participants from school to college levels and from research in academia to industrial applications would be encouraged to come and participate. Considering the diversity of our local population in their science endeavors, cultures and careers, this was no easy feat. We are sincerely grateful for their hard work.

Please take time now to read through the program offerings. There are many inspiring presentations and workshops offered. I am confident that you will come away from this meeting with ideas and contacts for projects that will lead to new STEM horizons as well as benefit your community.

While you're here, take time out to explore the Alaska Native Heritage Center and enjoy the wonderful and amazing wilderness and parks that are uniquely Alaskan. And please beware of moose in your travels!

Best regards,

Dee Barker

Dee Barker, Ph.D. Chemistry

ACS Alaska Local Section Chair



Northwest Regional Meeting
June 26–29, 2016
Anchorage, AK

Northwest Region of the American Chemical Society

2016

June 26, 2016

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Paul Jagodzinski

Dear ACS regional meeting attendees:

It is a pleasure to welcome you to this year's Northwest Regional meeting (NORM) of the American Chemical Society (ACS). The Northwest Region continues its tradition of excellence in sponsoring these meetings each June. While over the years the meetings have been held in a variety of locations, the quality of research and the collegiality of the participants has been a unifying feature. Past meetings have provided unsurpassed opportunities for interaction with regional colleagues, exchange of ideas, and enhanced networking for chemists living and working, or studying, in our region. This year's meeting promises to continue in that tradition.

As you can see from the technical program, much work and effort has gone into making this meeting a success. From the Local Organizing Committee, to the Region Board, to Technical Divisions, many hours have gone into ensuring that your experience will be both enjoyable and rewarding. Of course the meeting could not happen without your participation. On behalf of the Board of Directors of the Northwest Region, I wish to thank you for your attendance and extend a special thanks to those participants that have contributed oral or poster presentations.

We are excited once again to celebrate the world-class chemistry going on in the Northwest Region and welcome you to NORM 2016 in scenic Anchorage, Alaska.

Sincerely,

Janet L. Bryant, ACSF
President/Chair, NOR Board, Inc.
Northwest Region Board of Directors



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Jourdan Couture, Michelle Slwooko, Emily A Lescak, Sigourney Walker

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The 2016 ACS Northwest Regional Meeting gratefully acknowledges the financial support of all the organizations listed here

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The Arctic Division carries out, within its geographical region, the objectives of the American Association for the Advancement of Science: "To advance science and innovation throughout the world for the benefit of all people." The Arctic Division takes a leadership role in promoting interdisciplinary activities, education, and communication among scientists, the public, researchers, graduate students, resource managers, business leaders, rural residents and Alaska Natives. <http://arctic.aaas.org/>



The Alaska INBRE (IDeA Network of Biomedical Research Excellence) program is funded by the National Institutes Health (NIH) National Institute of General Medical Sciences (NIGMS). Alaska INBRE funds the development of biomedical professionals through support of students and faculty throughout the University of Alaska (UA) system. The goal of Alaska INBRE is to expand the capacity of Alaskan researchers to conduct biomedical and health research appropriate and relevant to the state of Alaska. Alaska INBRE funds a variety of research funding opportunities for faculty, postdoctoral researchers, and students within the UA system. <https://www.alaska.edu/inbre/>

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Alaska's BLaST program is an NIH-funded initiative to optimize recruitment, engagement and achievement of students, especially those from rural Alaskan or Alaska Native backgrounds, in biomedical education and research training. BLaST serves students at Ilisagvik College, University of Alaska Southeast and University of Alaska Fairbanks. <https://alaska.edu/blast/>

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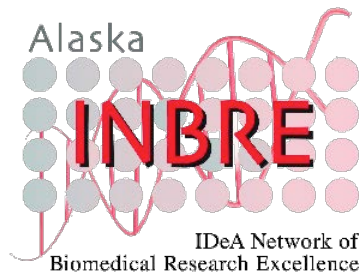
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The **Alaska INBRE** ([IDeA Network of Biomedical Research Excellence](#)) program is funded by the National Institutes Health (NIH) National Institute of General Medical Sciences ([NIGMS](#)). **Alaska INBRE** funds the development of biomedical professionals through support of students and faculty throughout the **University of Alaska** system. The goal of **Alaska INBRE** is to expand the capacity of Alaskan researchers to conduct biomedical and health research appropriate and relevant to the state of Alaska.



Impacts of Alaska INBRE

- ❖ Fund highly competitive pilot grants and research assistantships for faculty and students
- ❖ Foster collaborations between the University of Alaska and other health entities within the state
- ❖ Support research facilities throughout Alaska to provide resources for faculty, post-docs, and students including electrophysiology, cell culture, flow cytometry, next generation sequencing, and scanning transmission electron microscopy
- ❖ Expand curricula in biomedical and health areas across the UA system (INBRE)
- ❖ Provide student research opportunities to support the pipeline leading toward biomedical and health careers
- ❖ Increase access to bioinformatics resources and expertise in genomics and large data sets across the UA system
- ❖ Provide travel support to faculty, post-docs, and students to attend, present, and collaborate at professional conferences and training opportunities (INBRE)
- ❖ Support faculty mentor relationships to foster collaboration and promote translational research opportunities (INBRE)
- ❖ Sponsor research-focused academic seminars, meetings, and workshops for UA faculty, staff, and students(INBRE)

www.alaska.edu/inbre

Sponsors, Continued.

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Exhibitors



AAAS – Arctic Division – The Arctic Division of AAAS is open and accessible to all scientific scholars who are working on Arctic, Alaskan, Canadian, northern or Antarctic issues, and seeks to help them communicate their interests and discoveries. The organization promotes science activities and communication among researchers, students, educators, agency personnel, business leaders, Alaska Natives and rural residents.



ACS Division of Business Development and Management - The ACS Division of Business Development & Management (BMGT), provides resources for chemists to combine technical abilities and knowledge with business & management competencies and personal interests to forge successful careers. BMGT plans technical programming and collaborative events for our members to help them achieve business and career success in chemical-related enterprises. We stay abreast of financial, economic, management and marketing considerations so as to communicate trends and opportunities and provide a forum to exchange information and views. For more information, see <http://bmgmt.sites.acs.org>.



ACS Vote 20/20 Task Force - The ACS Vote 20/20 Task Force is charged with examining all aspects of nominations and elections for ACS national offices, and designing a viable process to be in place by the year 2020. The ultimate goal is an effective and equitable process for calling forth all those willing to stand for office and serve the Society. Representatives from N&E and other ACS committees have been invited to serve, but it is vital that we also seek ideas from all members as to how nominations and elections should be handled. You can also send comments to vote2020@acs.org.



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Division of Chemical Education



The Alaska INBRE (IDeA Network of Biomedical Research Excellence) program at the University of Alaska (UA) is funded by the National Institutes Health (NIH) National Institute of General Medical Sciences (NIGMS). The IDeA (Institutional Development Award) program of NIGMS is intended to broaden the geographic distribution of NIH funding for biomedical and behavioral research by serving rural and medically underserved communities. The IDeA Networks of Biomedical Research Excellence (INBRE) promote the development, coordination and sharing of research resources and expertise that will expand the research opportunities and increase the number of competitive investigators in the IDeA-eligible states. <https://www.alaska.edu/inbre/>



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72nd Annual Northwest Regional Meeting
June 25-28, 2017
Oregon State University | Corvallis, OR
norm17.org



NORM 2017 - NORM 17 will be held in in Corvallis, Oregon June 25-28, 2017. Plan on comfortable weather, rich programming, and engaging activities. See norm17.org as NORM 17 approaches.



NSTA Western Regional – Come and join us in Portland Oregon at the 2016 NSTA Western Regional Conference. The conference will be held November 10th-12th in the Oregon Convention Center. The theme of the conference is "Exploring Mountains: Guiding Science Teaching and Learning. The professional development strands are: BASE CAMP; Collaborating to Integrate Elementary Science instruction with math and ELA, THE VIEW FROM THE SUMMIT: Celebrating Science for All, and THE VIEW FROM ALL ANGLES: Connecting Three-Dimensional Science Instruction. See more at www.nsta.org/conferences and twitter [#NSTA16](https://twitter.com/NSTA16).



Pine Research Instrumentation - Pine Research Instrumentation manufactures a full line of affordable, durable and reliable electrochemical research equipment. Pine offers benchtop bipotentiostat/galvanostat instruments as well as portable USB potentiostat systems, all of which are controlled using our powerful AfterMath software package. We offer unique quartz electrochemical cells for photoelectrochemistry and spectroelectrochemistry, and we are the world leader in rotating disk, ring-disk, and cylinder electrode instrumentation. Our line of compact voltammetry cells, featuring screen-printed patterned electrodes, provides a quick and easy way to perform routine electrochemical measurements.



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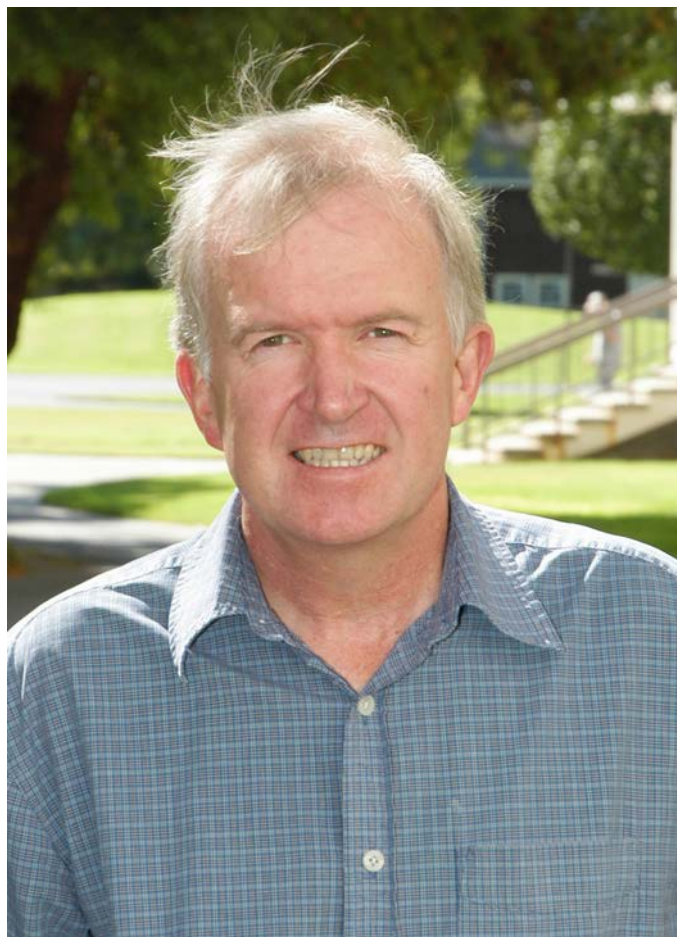
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Plenary Speaker - Monday 1:15 – 2:15 pm

Philip P. Power
University of California Davis



Low-Coordination Numbers, Unusual Bonding, and Dispersion Force Effects in Molecules

The synthesis of molecules with new types of bonding and the investigation of their reactivity are the main themes of his research. Examples of the new types of molecules include those with formal double or triple bonds between elements such as aluminum, gallium, germanium or tin; quintuple bonds between transition metals for example ArCrCRAr , two coordinate transition metal molecules and high oxidation state (+4) late transition metal complexes. Fundamental reactions involving hydrogen, ammonia, carbon monoxide or ethylene at room temperature were unknown for main group species until recently and are of great importance for several catalytic cycles as well as hydrogen transport and storage.

Plenary Speaker - Tuesday 1:15-2:15pm

David Constable
Green Institute, American Chemical Society



Innovating Towards Sustainability in the Global Chemistry Enterprise

Without a doubt, chemists have created an amazing variety of molecules and materials during the 20th century to support our modern way of life, and they continue to make great advances across many key areas of science and technology. There is now over a 20-year history of green and sustainable chemistry efforts in the US, but for a majority of chemicals that have been synthesized or which are in common use, chemists and chemical engineers know little about their toxicity to humans or the environment, their degradability (biological or otherwise), our ability to recycle or reuse them, or their renewability. This presentation will provide a broad overview of green and sustainable chemistry efforts in the United States that have been started to spur chemistry innovations that have fewer adverse sustainability impacts. A review of the depth, breadth and variety of these innovations gives one hope that chemists and chemical engineers will make many significant advances in the next 20 years that will move society towards a more sustainable lifestyle.

Featured Speaker

Women's Chemist Luncheon, Undergraduate Luncheon

Arlene Blum



Arlene Blum PhD, biophysical chemist, author, and mountaineer is a Visiting Scholar in Chemistry at UC Berkeley and executive director of the Green Science Policy Institute. The Institute brings government, industry, scientists and citizens groups together to support chemical policies to protect human health and the global environment. Blum's research and policy work has contributed to preventing the use of flame retardants and other harmful chemicals in children's sleepwear, furniture, electronics, and other products world-wide. Her current "mountain," which she considers her life's most challenging and important, is to educate decision makers in industry and government to reduce the use of entire classes of harmful chemicals. Arlene Blum led the first American—and all-women's—ascend of Annapurna I, considered one of the world's most dangerous and difficult mountains, co-led the first women's team to climb Denali, completed the Great Himalayan Traverse across the mountain regions of Bhutan, Nepal, and India, and hiked the length of the European Alps with her baby daughter on her back. She is the author of *Annapurna: A Woman's Place* and *Breaking Trail: A Climbing Life*. Blum's awards include the 2015 Thomas Lamb Elliot Award for lifetime achievement of a Reed College graduate, 2014 Wheeler Medal given to the city of Berkeley's "most useful citizen", the Jean and Leslie Douglas "Pearl Award" for individuals who despite great challenges, remains dedicated to providing a sustainable earth for future generations." selection by the UK Guardian as one of the world's 100 most inspiring women, National Women's History Project selection as one of 100 "Women Taking the Lead to Save Our Planet," selection as an American Association for the Advancement of Science Fellow, and election to the Hall of Mountaineering Excellence. Arlene Blum received her PhD in Biophysical chemistry from UC Berkeley and has taught at UC Berkeley, Stanford University, and Wellesly College. More information at www.greensciencepolicy.org and www.arleneblum.com.

Award Winners

Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences



Lawrence Duffy, University of Alaska Fairbanks

Dr. Lawrence Duffy received his BS in chemistry from Fordham University in 1969 and a MS degree in organic chemistry from the University of Alaska in 1971. Following three years of service in the US Navy, Lieutenant Duffy returned to the University of Alaska and completed his PhD degree in biochemistry in 1977. After several years of research at Boston University, the Roche Institute of Molecular Biology, the University of Texas and Harvard Medical School, Dr. Duffy returned to the University of Alaska where he has held numerous administrative positions and continues to teach biochemistry and research ethics.

Dr. Duffy has received the Carol Feist Outstanding Advisor Award, the NIDCD Minority Mentoring Award, the UAF Award for Professional Achievement, the Sven Ebbesson Neuroscience Award, the Usibelli Distinguished Research Award and the University of Alaska Chancellor's Diversity Award. He is a fellow of the Arctic Institute of North America and the American Institute of Chemistry. He also serves as the Executive Director of the Arctic Division, American Association for the Advancement of Science.

Award Winners

Partners for Progress and Prosperity Award Northwest Region P3 Award



David and Christine Vernier, Vernier Software and Technology

Vernier co-founder, David Vernier, had been a high school physics and physical sciences teacher for eight years when he began programming his first Precision Timer software application. David's creativity and his passion for science education, combined with his wife Christine's business acumen, were the driving forces behind the early years of Vernier Software & Technology. Since those days, Dave and Christine – and now nearly 100 employees at Vernier Software & Technology – have been creating world-class data-collection solutions for teachers.

Today, Vernier offers a full line of award-winning interfaces, sensors, software, and curriculum that help engage and excite students through hands-on scientific exploration. Whether you're looking for cutting-edge technology to enliven and support your labs in biology, chemistry, physics, or engineering there's a Vernier solution appropriate for every grade level. A high percentage of Vernier employees are former teachers, and all are familiar with the demands of the classroom. Every product we consider, every decision we make, is based on supporting the needs of educators and students.

Award Winners

E. Ann Nalley Northwest Region Award Volunteer Service to the American Chemical Society



James O. Currie Jr., Professor Emeritus, Pacific University, Oregon

Jim Currie is a 50-year member of the American Chemical Society and has played an integral part in the Portland ACS Section since 1972. He served as Section Chair in 1980 and in 2008 and has been involved in a number of major events including three Northwest Regional Meetings 1999, 2005, 2011. Jim has also served both on steering committees and as symposia chairs and webmaster in 2011. Jim also served on symposium steering committees for the Pauling Medal Symposia in 2005, 2009, and 2013; in 2005 he was Co-Chair and in 2013 he was treasurer. In 2008 Jim was appointed as Bylaws Committee Chair where he oversaw a major revision of Section Bylaws.

Jim is nationally recognized for his work in the applications of computers to the teaching of chemistry. From the very beginning of personal computers, he was involved in developing methods and software to interface computer data acquisition with chemical experimentation. For many years, he gave regular workshops on the educational applications of this technology. Jim was an early innovator in computer-based molecular modeling tools having co-written *MOLEC*, the first molecular modeling software developed for portable/personal computers. Throughout his career, Jim has given numerous presentations and published on the use of computer animated chemical reactions.

Award Winners

ACS Division of Chemical Education Glenn & Jane Crosby Northwest Region Award for Excellence in High School Teaching



James Yoos, Bellingham High School, Washington

Jamie Yoos is a Quantitative Chemistry, AP Chemistry, and Applied Anatomy and Physiology teacher at Bellingham High School in Bellingham, WA where he has worked for the past 13 of his 18 year teaching tenure. Jamie graduated with honors from Warren Wilson College in 1990 with degrees in biology and chemistry. After working as a chemist for a biotech company in Seattle, Jamie found his true passion in teaching and pursued a graduate degree in science education from the University of Rochester. He is a National Board Certified teacher.

Jamie believes in making science education accessible to all students. He has worked to develop curriculum that adjusts to his students' interests and needs. He actively incorporates "hands on" inquiry and technology to empower his students in their learning. Jamie believes in meeting his students "where they are in their understanding," and helps them to make connections between scientific principles and what they are seeing in their world. He helps students to move past the fear of failure and focus on the learning rather than a score. Jamie seeks out opportunities to teach in a variety of settings, and can often be found with a group of his anatomy and physiology students working the sidelines of athletic events teaching athletic injury prevention, assessment and rehabilitation. Jamie is also active at the regional and state level, serving as a Washington State Science Fellow, helping his district with the transition to the new Washington State Science Learning Standards (NGSS).

Overall Schedule of Sessions and Events

SUNDAY, JUNE 26th, 2016

Sunday Morning

7:00 AM Exhibitors may begin set up of tables in Lobby. Lobby

Sunday Evening

3:00 - Registration Open
5:00 – 6:00 PM Chips-N-Chat with ACS Governance Room 3
6:00 – 6:30 PM Welcome by Ethan Berkowitz, Opening Reception Room 3
6:30 – 8:30 PM General Poster Session Room 2,12

MONDAY, JUNE 27th, 2016

Monday Morning

6:30 – AM 5K Fun Run *Sign up at Hilton front desk (Sunday) and at poster session.*

8:00 – 5:30 PM Exhibit area open to participants Lobby

Workshops:

8:00 – 12:00 PM ACS Leadership Leading Without Authority Workshop Room 8

Sessions:

8:30 – 11:45 AM Inorganic General Session I Room 4

8:30 – 11:10 AM Cope Symposium Room 5

8:30 – 11:00 AM Environmental Chemistry General Session Room 6

8:30 – 11:25 AM Small Chem. Bus. Entrepreneurship Symposium I Room 7

Monday Lunch

11:30 – 1:00 PM Women Chemists Luncheon **Arlene Blum** Room 3
*“Tackling Toxics: The Chemical Class Approach
Towards Healthier Products”*

Monday Afternoon

1:15 to 2:15 PM Plenary Speaker **Philip Power** Room 1,13,14
*“Low-Coordination Numbers, Unusual Bonding, and Dispersion Force
Effects in Molecules”*

Workshops:

2:30 – 5:30 PM Scientific Writing and Publishing Workshop Room 11

Sessions:

2:30 – 5:15 PM Inorganic General Session II Room 4

2:30 – 5:30 PM Organic General Session Room 5

2:30 – 5:30 PM High Latitude Pollution Chemistry Symposium Room 6

2:30 – 5:30 PM Small Chem. Bus. Entrepreneurship Symposium II Room 7

2:30 – 5:10 PM Biochemistry General Session Room 9

Monday Evening

7:00 – 9:00 PM Alaska Native Heritage Center / Salmon Bake/
Alaska Native Dance Performance
Buses available to / from ANHC

TUESDAY, JUNE 27th, 2016

Tuesday Morning

8:00 – 5:30 PM	Exhibit area open to participants	Lobby
Workshops:		
8:00 – 12:00 PM	ACS Career Finding Your Pathway Workshop	Room 8
8:30 – 11:30 AM	Web-Based Molecular Modeling Workshop	Room 10
10:15 – 11:15 AM	Undergraduate Research Workshop	Room 11
Sessions:		
8:30 – 11:30 AM	Recent Advances in Transition Metal Symposium I	Room 4
8:30 – 11:30 AM	Methods in Engaging Students in STEM Symposium	Room 5
8:30 – 11:55 AM	Anal./Radiochem. for Harsh Environ. Symposium	Room 6
8:30 – 11:45 AM	Neurochemistry: Drug Discovery Symposium	Room 9

Tuesday Lunch

11:30 – 1:00 PM	Undergraduate Luncheon Arlene Blum <i>“Climbing Your Own Mountains: To Denali and Beyond”</i>	Room 3
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Tuesday Afternoon

1:15 – 2:15 PM	Plenary Speaker David Constable <i>“Innovating Towards Sustainability in the Global Chemistry Enterprise”</i>	Room 1,13,14
Workshops:		
1:30 – 5:00 PM	Résumé Review Workshop (30-min Appts.)	Room 8
2:30 – 5:30 PM	Accessible NMR Applications Workshop	Room 11
Sessions:		
2:30 – 4:10 PM	Recent Advances in Transition Metal Symposium II	Room 4
2:30 – 4:30 PM	Student Engagement General Session	Room 5
2:30 – 5:35 PM	Scaling Atomic to Bulk Processes General Session	Room 6
2:30 – 4:45 PM	High-Latitude Earth-Water Systems General Session	Room 7
2:30 – 4:55 PM	Neuroinflammation, Stroke, and Aging Symposium I	Room 9
2:30 – 5:05 PM	Computational Chemistry Symposium I	Room 10

Tuesday Evening

7:00 – 9:00 PM	Awards Banquet	Hilton Chart Rm
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WEDNESDAY, JUNE 28th, 2016

Wednesday Morning

7:00 – 7:30 AM	Breakfast for Local Section Board Reps & Invited Guests	Hilton Dillingham Rm
7:30 – 9:30 AM	Business Meeting, Open	Hilton Dillingham Rm
8:00 – 12:00 PM	Exhibit area open to participants	Lobby
9:45 – 9:15PM	Glacier Discovery Train Tours	
Workshop:		
9:10 – 11:45 AM	Teaching STEM from Remote Locations Workshop	Room 8
Sessions:		
9:00 – 11:20 AM	Neuroinflammation, Stroke, and Aging Symposium I	Room 9
8:00 – 9:40 AM	Computational Chemistry Symposium II	Room 10

Undergraduate Events and Program

SUNDAY, JUNE 26th, 2016

6:30 – 8:30 PM General Poster Session Room 2,12

MONDAY, JUNE 27th, 2016

6:30 – AM 5K Fun Run
(Sign up at Hilton front desk (Sunday) or at poster session)

2:30 – 5:30 PM Scientific Writing and Publication Techniques Room 11
Antonio Peramo, CEO, iPublishPapers.com

TUESDAY, JUNE 27th, 2016

10:15 – 11:15 AM Undergraduate Research: Building a Room 11
Foundation for the Future
*Thomas Green, Department of Chemistry & Biochemistry,
University of Alaska Fairbanks*

11:30 – 1:00 PM Undergraduate Luncheon Room 3
*Arlene Blum, CEO Green Science Policy Institute
“Climbing Your Own Mountains: To Denali and Beyond”*

7:00 – 9:00 PM Awards Banquet Hilton
Chart Rm

Workshops

MONDAY

Leading Without Authority

Egan Center, Room 8, 8:00 AM – 12:00 PM

ACS Career Services, *Organizer*

Participants will address issues such as influencing people who have different styles or views, organizing and establishing commitment even when there is resistance and a lack of cooperation, gaining support for a new project and enlisting support and involvement among busy professionals. Participants will learn to recognize when “influencing skills” are needed, when they’re not, and when they will and won’t be effective, how to apply the two dimensions of influence: the “business” side and the “relationship” side, gain an understanding of what really counts for the people you want to engage, and strategies one can use to help people get what they want from their involvement. Participants will be able to use these skills immediately in their work and school environments to better direct and manage projects, teams and committees.

Scientific Writing and Publication Techniques

Egan Center, Room 11, 2:30 PM – 5:30 PM

Antonio Peramo, *Organizer*

This is a hands-on training program that gives participants a primary overview of the process of writing and publishing scientific manuscripts, with some short exercises. It is arranged in three modules: 1) Scientific publishing industry context and participants: authors; publishers; editors and reviewers; open access publishing; good journal selection; avoiding bad publishers and scammers 2) Structures of the manuscript and writing techniques for each section 3) Additional aspects of the publication process: research misconduct; plagiarism; cover letters; response to reviewers. A number of online and offline tools currently available, helpful in preparing manuscripts and analyzing metrics, will be discussed. Participants should bring laptops. For additional information, visit: <https://www.ipublishpapers.com/NORM2016-workshop>

TUESDAY

Finding Your Pathway

Egan Center, Room 8, 8:00 AM – 12:00 PM

ACS Career Services, *Organizer*

Learn about the four main career pathways available to chemical professionals: Higher education, industry, government, and entrepreneurial careers and why each one may or may not be the right choice for you. This workshop is not only ideal for graduate students and recent grads, but also experienced professionals who are considering a career change. In addition to learning about which types of careers are available in each pathway, you'll also learn about the job market and hiring trends to help you make your choice. The workshop allows time for you to inventory your own values, interests,

background, strengths and weaknesses so that you can select which career pathway you'd like to explore in detail.

Web-Based Molecular Modeling

Egan Center, Room 10, 8:30 AM – 11:30 AM

John Keller, *Organizer*

Intended audience: High school teachers and college-level general chemistry instructors. This workshop will introduce chemistry instructors to chemistry computing resources in the "cloud" that can be used for preparation of teaching materials, or by students in lab. All that is required is an iPad, or laptop with Java-enabled browser. Participants will carry out several activities suitable for high school or first-year college chemistry labs, such as: calculating and visualizing molecular electron clouds and vibrations, visualizing bonds and inter-molecular interactions of drug molecules, visualizing proteins and DNA, other topics may include: introduction to methods of computational chemistry, discussion of free or low-cost molecular modeling resources for teachers, such as Jmol, WebMO, NWChem, MOPAC, and the Protein Data Bank. For more information visit: <http://chem.uaf.edu/facilities/WebMO/NORM2016-Workshop/index.htm>

Undergraduate Research

Egan Center, Room 11, 10:15 AM – 11:15 AM

Thomas Green, *Organizer*

Undergraduate research is an integral part of undergraduate curriculum and coursework for Chemistry Majors in the Department of Chemistry & Biochemistry at the University of Alaska Fairbanks (UAF). This talk will focus on efforts at UAF to integrate students into the process of conducting hypothesis-driven research at an early stage in their careers. Students develop a wide range of skills, which include understanding safety protocols, reading and reviewing the literature, and planning, writing and executing a realistic, fundable proposal that can be completed in a relatively short timeframe. Students are offered a number of opportunities for communicating their results, including local research conferences at UAF and regional/national meetings, with an ultimate goal of a peer-reviewed publication.

Résumé Review/Interview Skills

Egan Center, Room 8, 1:30 PM – 5:30 PM

Guidance on preparing a resume and developing better interview skills. Individuals must sign-up in advance for an appointment (30 Minutes).

Accessible NMR – Applications for the Classroom and Research

Egan Center, Room 11, 2:30 PM – 5:30PM

Carl Murphy, *Organizer*

This workshop will be of interest to those with a desire to learn about new and innovative ways to apply NMR in a classroom or research setting. The goal of the workshop is to help with the integration of NMR into the class and research settings. Attendees can expect to become more familiar with the educational options that are available with NMR, as well as gain ideas for the further incorporation of NMR into their research.

WEDNESDAY

Teaching STEM from Remote Locations

Egan Center, Room 8, 9:00 AM – 11:45 AM

Lisa Hoferkamp, *Organizer*

Target audience includes high school and university undergraduate instructors. This workshop will discuss analytical tools for teaching in remote locations including EScience and Hands on Labs Inc kits for teaching science laboratory curriculum via online courses. Workshop leaders will discuss methods for overcoming the technical difficulties associated with teaching STEM courses in geographically isolated areas while maintaining curricular rigor. High school and university collaboration opportunities through the ACS Project SEED will be described as well as federally-sponsored (e.g. National Institute of Health) opportunities for engaging undergraduates and high school students in STEM-based independent research projects.

9:10 *Introductory Remarks*

9:15 Delivering science education to Rural Alaska: Impediments and Pleasures, **A. Pandya**

9:35 Engaging Alaska Native people in science, **C. Ihl**

9:55 Bridging Distance and Cultures in Chemistry using the Learning Cycle, **D. Barker**

10:15 Designing a remotely accessible analytical laboratory, **B. Hagdorn,**

10:35 *Break*

10:45 Tools for the classroom and lab – Escience, **S. Hayes**

11:05 A Model for Communication in Chemistry Teaching Labs – An Experiment, a Student and a (possibly distant) Instructor, **J. Amend**

11:25 Group discussion: Strategies for Improved Delivery & Student Success Project SEED: **L. Hoferkamp**

Technical Program

William Howard, Program Chair

SUNDAY EVENING

Egan Center Room 2,12

General Poster Session, 6:30 PM - 8:30 PM

T. R. Long, A. Nestler, *Organizers*

1. Monitoring polycyclic aromatic hydrocarbon (PAH) biodegradation in Arctic waters using fluorescence spectroscopy. **A. Driskill**, A. Dotson, P. Tomco
2. Understanding fluorescence energy transfer for toxicant detection and environmental monitoring efforts. **M. Verderame**, D.J. DiScenza, N. Serio, M. Levine
3. Analysis of the volatile and semi-volatile constituents of *pinus flexilis* essential needle oil by GC/MS techniques. **L. Damstedt**, K.E. Grant
4. Boreal dissolved organic matter interaction with metal(loid)s from fly ash. **J. Sterle**, J.J. Guerard, S.M. Hayes
5. Interactions of leached coal fly ash metal(loid)s with sub-arctic aquatic dissolved organic matter. **K.P. Milke**, S.M. Hayes, J.J. Guerard
6. Molecular characterization of soil and surface water organic matter from Alaskan boreal systems underlain by permafrost. **K. Gagne**, J.J. Guerard
7. Seasonal variations in composition and photoreactivity of dissolved organic matter isolated from a small sub-arctic stream. **R.L. Osborne**, J.J. Guerard
8. PBDE biotransformation in staghorn sculpin and starry flounder. **H.H. Elkan**, L.A. Hoferkamp
9. Extraction and identification of usnic acid from *usnea*. **G. Carmichael**
10. In vitro toxicity profiling of quinoneimine-forming agent. **L. Valeu**, B. Stamper
11. Development of rhodium catalyzed carbon-carbon bond formation and application to the synthesis of bipyridines. **F. Guo**, **B. Graves**, N. Cockrane
12. Highly stereoselective enzymatic reduction of α -fluoro- β -keto esters. **A. Damarancha**, T. Green
13. Experimental studies of chemical reactions induced by high-velocity molecular impacts. **D.E. Austin**, S. Osburn
14. Photoactivity of 6-thioguanosine. **Y. Zhang**
15. The implementation of teaching and learning materials for cognition accelerating science classes to lower elementary students. **Y. Kong**
16. A student-led synthesis of triclosan for deeper learning in an undergraduate organic chemistry laboratory course. **G. Draper**, **N. Nelson**, N.D. Rawlinson
17. Bio-catalyzed regioselective synthesis in undergraduate organic laboratories: Multi-step synthesis of 2-arachidonoylglycerol. **M.R. Johnston**
18. Analysis of acetaminophen in children's liquid pain relief medicines by cyclic voltammetry (CV). W.E. Steiner, **A.P. Lesesne**
19. Production of phenol-formaldehyde adhesives from catalytic pyrolysis oils. **A.M. Akude**

20. Organic pigment electrode in aqueous magnesium ion batteries. **I. Rodriguez Perez**, X. Wang, X. Ji
21. Optimization of mangosteen dye-sensitized solar cells. **H. Goemann**
22. Directed nano-precipitation into nanoporous carbon for hydrogen evolution catalysts. **D.P. Leonard**, V. Raju, X. Ji
23. Classification of biodiesel and petrodiesel blends using gas chromatography: Differential mobility spectrometry and isolation of c18:3 me by dual ion filtering. **K.M. Pierce**, D. Pasupuleti, G.A. Eiceman
24. Detection of benzene and alkylated benzene derivatives in fuel contaminated environments via cyclodextrin-promoted fluorescence modulation. **D.J. DiScenza**, M. Verderame, M. Levine
25. Developing a novel polymer material for remove organic pollutant from waste water. C. Wang, H. Zhu, C. Ma, J. Zhou, **Y. Wang**, Z. Zou
26. Fabricating new porous strong base to control CO₂ emission. Y. Li, **Y. Wang**, **J. Zhu**
27. Results from a compositional analysis of fine particulate matter in Fairbanks, Alaska. **K. Nattinger**, D. Huff, W.R. Simpson
28. Extraction of tellurium for use in high technology as a byproduct of current copper mining processes. **S.M. Hayes**, K.J. Spaleta, A.E. Skidmore
29. Mineralogical controls of trace metal(loid) behavior during Au and Ag extraction at Golden Sunlight Mine near Whitehall, MT. **K. Spaleta**, R. Witte, S.M. Hayes, R. Newberry
30. SCHB experience helps you meet the challenges in the chemical sciences sector. **J.E. Sabol**, **J.L. Bryant**
31. Membership benefits of Division of Small Chemical Businesses, American Chemical Society. **J.E. Sabol**, **J.L. Bryant**
32. Use of elemental spectroscopy for the determination of cyanide in blood. **M. Alexander**, J. Rosentreter
33. Radiation chemistry of organo-tin complexes. **S. Saha**, J. Amador, S. Decker, R.T. Frederick, D.H. Park, D.A. Keszler
34. Get involved with the ACS Division of Chemical Education. **S. Anthony**
35. Novel application of a classic pH demonstration for ocean acidification education. **E. Clarke**, T.L. Sorey
36. Toward the synthesis of possible antibiotic products derived from lasalocid A. D.F. Baluca, **E. Clarke**, M. Sessions, P.W. Swain
37. Towards the synthesis of a novel 1,3-azaborine as a potential HIV-1 protease inhibitor. **K.M. Norris**, **R. Rodriguez**, L. Fabry-Asztalos
38. Demonstrating leadership in the interdisciplinary sciences. **J.C. Rodriguez**, D. Chavez, A. Al-Nassar, A. Nein
39. Tolerance to ischemia is modulated in part via targeting nitric oxide signaling pathway by an endogenous factor, neuroglobin. **S. Bhowmick**, K. Drew
40. Acidotoxicity via ASIC1a mediates cell death during oxygen glucose deprivation and abolishes excitotoxicity. **S. Bhowmick**, K. Drew
41. Variable thermolytic response to A₁ adenosine receptor agonist in rats. **I.R. Bailey**, K. Drew
42. Adenosine 1AR targeted temperature management in rats and resultant physiological effects of a pharmacological induced hypometabolic state. **B. Laughlin**, K. Drew

MONDAY MORNING

Cope Scholar Symposium

Egan Center Room 5

T. Green, *Organizer, Presiding*

- 8:30 43. Methodology development using olefins as chemical feedstocks. **S.M. Bronner**, R.H. Grubbs
- 8:55 44. Ligand-accelerated C-H activation reactions: Distance and geometry. **J. Yu**
- 9:20 45. Stereoselective allylic functionalization of unactivated hydrocarbons. **U.K. Tambar**
- 9:45 46. Recent forays in methods development and complex molecule synthesis. **N.K. Garg**
- 10:10 *Intermission.*
- 10:20 47. Copper-catalyzed radical addition with nitroso compounds. **J. Read De Alaniz**
- 10:45 48. Chemical adventures with small and large molecules. **O.R. Thiel**
- 11:10 Short stories in large-scale synthesis: Forming amide bonds is the easy part. **D. Caspi**

Entrepreneurs' Tool Kit: Resources and True Stories

Egan Center Room 7

Cosponsored by SCHB[†]

J. L. Bryant, *Organizer*, J. E. Sabol, *Organizer, Presiding*

- 8:30 *Introductory Remarks.*
- 8:35 49. Building an effective technology transfer operation to support small business development. **P.K. Dorhout**, C. Brandt, K. Glasscock
- 9:00 50. Introduction to Northwest Green Chemistry, a Pacific Northwest resource center for entrepreneurs and businesses. **A. Nestler, L. Heine**
- 9:25 51. Working for yourself is neither easy nor difficult, you just need to find your zone. **J.E. Sabol**
- 9:50 *Intermission.*
- 10:30 52. The chemistry entrepreneur's toolkit: Tips and tricks to maximize ACS meeting and other resources. **J.M. Sophos**, J.L. Bryant
- 10:55 53. Investing 101: What are angel investors? **J.C. Giordan**
- 11:20 *Concluding Remarks.*

Environmental Chemistry General Session

Egan Center Room 6

P. Tomco, *Organizer, Presiding*

- 8:30 54. Efforts towards improving quantification of woodsmoke contribution to Fairbanks North Star Borough fine particulate (PM_{2.5}) pollution. **W.R. Simpson**, K. Nattinger, M. Hooper

- 8:50 55. Advanced membrane treatment for rural Alaska: From synergistic UV/membrane to novel applications of nanofiltration. **A. Dotson**, J. Alvey, G. Michaelson, C. Lucas
- 9:10 56. Removal of the pharmaceuticals salicylic acid, 4-nitroaniline, benzoic acid and phthalic acid from wastewater using magnetized fast pyrolysis biochar produced from timber industry waste wood. **A.G. Karunanayake**, O.A. Todd, M. Crowley, R. Anderson, T. Mlsna
- 9:30 57. HS-GC-MS analysis of flower, leaf, and stem volatiles of the Arctic root *Rhodiola rosea* L. for fast normalized maturation cycle analysis. **I. Schacht**, C. McGill
- 9:50 *Intermission.*
- 10:20 58. Movement of aminopyralid, clopyralid, and dicamba in potatoes and degradation in cold soils. **S. Seefeldt**, P. Tomco, R. Boydston
- 10:40 59. Complex environmental and biological analysis using a new 21T ultra-high resolution Fourier transform ion cyclotron resonance mass spectrometer system. M. Tfaily, L. Walker, J. Shaw, N.J. Hess, L. Pasa-Tolic, **D.W. Koppelaar**

Inorganic Chemistry General Session

Egan Center Room 4

B. T. Rasley, *Organizer, Presiding*

- 8:30 60. Understanding interactions of organophosphates and thioethers with polyoxometalate clusters. S.L. Giles, J.G. Lundin, B.T. Rasley, **J.H. Wynne**
- 9:15 61. The use of functionalized aminopolycarboxylates for improved actinide/lanthanide separations. **T.S. Grimes**, C. Heathman, S. Jansone-Popova, P.R. Zalupski
- 10:00 62. Design of silica-based hybrid catalysts and their application in alkane oxidation. **A.J. Karkamkar**
- 10:45 *Intermission.*
- 11:00 63. The role of soil matrix in determining liquid water content at subfreezing temperatures in antarctic soils. **L. Vugmeyster**, M. Clark, B. Hagedorn

MONDAY AFTERNOON

Biochemistry General Session

Egan Center Room 9

K. Dunlap, *Organizer, Presiding*

- 2:30 64. Periodizing nutrition and conditioning for optimum performance. **A. Reynolds**
- 3:10 65. Quantification of plasma 25(OH)D levels reveal trained student athletes are at greater risk of vitamin D insufficiency and deficiency compared to sedentary students living at 64° north. **S. Jerome**, K. Sticka, T.M. Schnurr, S. Mangum, A. Reynolds, K. Dunlap
- 3:30 66. Physical activity energy expenditure attenuates the effect of the *TBC1D4*

p.Arg684Ter loss-of-function variant on plasma glucose levels 2 hours after an oral glucose load in the Inuit population. **T.M. Schnurr**, E. Jørsboe, I. Dahl-Petersen, B. Carstensen, P. Bjerregaard, N. Grarup, M.E. Jørgensen, A. Albrechtsen, T. Hansen

3:50 *Intermission.*

4:10 **67.** Determination of sugar metabolism profiles for non-traditional brewing yeasts of the genus *brettanomyces*. **K. Johnson**, W. Deutschman

4:30 **68.** A chimera of the protein tyrosine phosphatases YopH and PTP1B investigates the connection between loop dynamics and catalysis. **G. Moise**

4:50 **69.** Dynamics and solvation of amyloid- β hydrophobic core. **L. Vugmeyster**, M. Clark, I.B. Falconer, D. Ostrovsky, W. Qiang, G.L. Hoatson

Entrepreneurs' Tool Kit: Resources and True Stories

Egan Center Room 7

Cosponsored by SCHB[‡]

J. E. Sabol, *Organizer*, J. L. Bryant, J. C. Giordan, *Organizers, Presiding*

2:30 *Introductory Remarks.*

2:35 **70.** Opening overview: Chemists using business acumen and transformative research to address societal needs with chemistry business solutions. **J.C. Giordan**

2:50 **71.** Panel 1: Innovation and Commercialization in Industry and Ventures. J.C. Giordan (Moderator), M. Dolgos, D.W. Johnson, A. Hinkle, A. Schauss

3:30 *Facilitated Q&A.*

3:50 **72.** Overview for panel 2: Educating and preparing students for careers in innovation. **J.C. Giordan**

4:00 **73.** Panel 2: From Researchers to Innovators – Expanding the Vision of Graduate Student Education and Training. **J.C. Giordan** (Moderator), S. Saha, J. Amador, D.P. Leonard, I. Rodriguez Perez

4:40 *Facilitated Q&A.*

5:00 *Concluding Remarks.*

5:05 **74.** Office hours: Meet the speakers and ask more personalized questions. All Speakers from AM & PM Sessions of the Entrepreneurs' Tool Kit: Resources and True Stories

High Latitude Pollution Chemistry

Egan Center Room 6

W. R. Simpson, *Organizer, Presiding*

2:30 **75.** Low temperature air pollution. **C.S. Benson**

2:45 **76.** Nitrogen oxides in the cold and dark: New directions in winter air pollution chemistry. **S.S. Brown**

3:15 **77.** Observations of intermediate volatility organic compounds during the Fort

McMurray oil sands strategic investigation of local sources (FOSSILS) campaign: Implications for secondary organic aerosol formation. T.W. Tokarek, Y.M. Taha, J. Liggio, C. Stroud, S. Li, **H.D. Osthoff**

3:45 *Intermission.*

4:05 78. Transformations of natural and anthropogenic organic materials in sunlit snowpack. **A.M. Grannas**, A. Fede, B. Pierce, L. Pagano, R. Bobby, G. Rowland

4:35 79. Key findings of the AMAP 2015 assessment on black carbon and tropospheric ozone as arctic climate forcers. **P. Quinn**

5:05 80. Measurements of atmospheric aerosol vertical distributions above Svalbard, Norway using unmanned aerial systems (UAS). **T. Bates**, J. Johnson, H. Telg, D. Murphy, P. Quinn, R. Stordvold

5:25 *Concluding Remarks.*

Inorganic Chemistry

Egan Center Room 4

B. T. Rasley, *Organizer, Presiding*

2:30 81. Earth-abundant nickel-iron hybrid catalysts for solar water splitting. **B. Weintraub**

3:00 82. Crystallization of defect limited bulk pyrite. **E.R. Young**, Q. Tong, E. Johansson

3:30 83. Spectroelectrochemical photoluminescence spectroscopy of TiO₂ reveals intraband trap states. J. McHale, **F.J. Knorr**, R. Rex

4:00 *Intermission.*

4:15 84. Solvent assisted tuning of betalain aggregates on TiO₂ surfaces: Impacts on DSSC efficiency and stability. **N. Treat**, F.J. Knorr, J. McHale

4:45 85. Green synthesis of water soluble gold nanoparticles reduced and stabilized by squaric acid and rhodizonic acid supported on cellulose fibers for the catalytic reduction of 4-nitrophenol. **M.T. Islam**, J. Noveron

Organic Chemistry General Session

Egan Center Room 5

M. R. McCoy, *Organizer, Presiding*

2:30 86. Transition metal-catalyzed C-C bond-forming reactions using cyclopropanols: Revealing functionality upon C-C bond formation. **A. Orellana**

2:50 87. Gold-catalyzed and NaH-supported cyclization reactions of N-propargylated pyrrole and indole derivatives: Synthesis of heterocycles with new scaffolds. **M. Balci**

3:10 88. Zirconium-mediated synthesis of natural products: The first total synthesis of (+)-mucocin. **J. Stec**, A.R. Henderson, D.R. Owen, R.J. Whitby

3:30 89. Oxocarboxylic acid racemization: Rate estimation and structural influences. **E.J. Valente**

3:50 *Intermission.*

4:10 90. New routes to substituted phenols: Unconventional approaches using palladium-catalysis. **A. Orellana**

4:30 91. An isoxazole conformational scan. **N.R. Natale**

- 4:50 92. The reaction of n-silyl amines with thioesters: A green chemistry approach for the parallel synthesis of diheteroarylamides with anti-HIV activity. **A. Koperniku**, D. Grierson

TUESDAY MORNING

Applications of Analytical & Radiochemistry for Harsh Environments

Egan Center Room 6

S. A. Bryan, A. M. Lines, *Organizers, Presiding*

- 8:30 *Introductory Remarks. S. Bryan.*
- 8:40 93. Spectroelectrochemical sensors for harsh environments. **W.R. Heineman**, S. Branch, S.A. Bryan
- 9:15 94. Modified spectroelectrochemical sensor for the detection of technetium. **S.D. Branch**, J. Bello, S.A. Bryan, W.R. Heineman
- 9:35 95. Spectroelectrochemical sensors for the *in situ* generation and subsequent analysis of luminescent complexes of Eu and Ru. **A. Lines**, Z. Wang, W.R. Heineman, S.B. Clark, S.A. Bryan
- 9:55 96. Phase transfer kinetics of advanced-TALSPEAK solvent extraction system. **F. Heller**, K.L. Nash, G.J. Lumetta, Z. Wang, A. Casella, S. Sinkov, S.A. Bryan
- 10:15 *Intermission.*
- 10:35 97. Spectroscopy and microscopy characterization of Eu(III)-oxalate precipitation processes. **Z. Wang**, W.C. Isley, S. Kathmann, G.B. Hall, S. Chatterjee, J. De Yoreo, E. Buck, J.A. Soltis, M. Conroy, G.J. Lumetta, T. Meadows, S.B. Clark
- 10:55 98. Development of spectroscopic instruments and fiber optic probes for applications in radiological analysis. **J.M. Bello**
- 11:15 99. Developing and testing a novel micro-Raman probe for spectroscopic interrogation of microfluidic devices. **G. Nelson**, A. Lines, J. Bello, S.A. Bryan
- 11:35 100. Telescopic Raman technology for remote in-situ identification of nuclear tank waste. **S.A. Bryan**, A.M. Lines, T. Levitskaia, F.N. Smith, J. Bello

Applying Methods in Engaging Students in STEM Classes

Egan Center Room 5

Financially supported by Arctic Division, AAAS

L. K. Duffy, *Organizer, Presiding*

- 8:30 101. Sustainability: What, how, and why now? Ver. 2.0. **C.H. Middlecamp**
- 8:50 102. An engaging approach to undergraduate science learning. **D.D. Kumar**
- 9:10 103. Engaging students by including Chapter 18 in first semester general chemistry. **T. Holme**, M.H. Towns
- 9:30 104. Using tiered mentoring curriculum to engage early-career students in research. **S.M. Hayes**
- 9:50 *Intermission.*
- 10:10 105. Implementing deliberative democracy pedagogy: Increasing student engagement,

improving science identity, and promoting positive relationships and collaborations.

G.P. Shusterman

- 10:30 106.** Biomembranes transformation: Instructor led to iPad-based student LED. C. Scerbak, M. Swarup, **T.M. Schnurr**, A. Tackett, J. Zheng, G. Bender, K. Dunlap
- 10:50 107.** Surface water quality occupational endorsement: Monitoring rural Alaskan streams. **T. Radenbaugh**
- 11:10 108.** Ilisagvik Tribal College's summer climate camp: Teaching STEM concepts to North Slope Alaska high school and middle school students. **L. Nicholas-Figueroa**, R. Hare, M. van Muelken, L.K. Duffy, C.H. Middlecamp

Drug Discovery: From Natural Products to Medicinal Chemistry

Egan Center Room 9

Financially supported by Alaska INBRE

K. Drew, S. Yu, *Organizers*, T. Kuhn, *Presiding*

- 8:30 109.** A model of natural products research. The scientific study of the Amazonian palm fruit, acai (*Euterpe* spp.) and its potential impact on health and the environment. **A.G. Schauss**
- 9:30 110.** Natural polyphenols: Potential in the prevention of sexually transmitted viral infections. **C. Destache**
- 10:00 111.** A nonpolar blueberry fractions blunts NADPH oxidase activation. **T. Kuhn**
- 10:30** *Intermission.*
- 10:45 112.** Rejuvenating neural stem cells in the aging brain. **J. Chen**
- 11:15 113.** Alternative mitochondrial electron transfer for the treatment of neurodegenerative diseases and cancers: Methylene blue connects the dots. **S. Yang**

Recent Advances in Transition Metal Chemistry

Egan Center Room 4

W. A. Howard, J. J. Pak, *Organizers*, *Presiding*

- 8:30** Introductory Remarks.
- 8:35 114.** Tuning transition metal reactivity based on the protonation state of a tridentate Bis(NH,NHC) ligand. **B.M. Cossairt**, S.E. Flowers, M. Norris
- 9:15 115.** Scope and limitations of single source precursor approach to I-III-VI nanomaterials. **J.J. Pak**, A.W. Holland
- 9:55 116.** Living on the edge: Chemistry at the interfaces. **M. Dolgos**
- 10:35** *Intermission.*
- 10:50 117.** Main group coordination clusters: Synthesis, solution speciation, structure and their use as "inks" for oxide material. **D.W. Johnson**

TUESDAY AFTERNOON

Computational Chemistry: New Methods in Quantum Theory & Applications to Solution & Surface Chemistry

Egan Center Room 10

Cosponsored by COLL & COMP[‡], Financially supported by Wavefunction, Inc.
R. Devanathan, *Organizer*, J. W. Keller, *Organizer, Presiding*

- 2:30 118. Insights into the electronic structure of molecules from generalized valence bond theory. **T.H. Dunning**
- 3:10 119. If it walks and talks like a hydrogen bond. **S. Scheiner**
- 3:40 *Intermission.*
- 3:55 120. Molecular modeling of cellulose, cellulases, and hemicellulose for making biofuels and biomaterials. **M.F. Crowley**, B. Knott, L. Bu, G. Beckham, M. Himmel
- 4:25 121. Modern molecular models: Catalysts for chemical thought. **A.J. Shusterman**
- 4:55 *Concluding Remarks/Software Drawing.*

High-Latitude Earth-Water Systems

Egan Center Room 7

K. L. Zamzow, *Organizer, Presiding*

- 2:30 122. Likely impacts of the anomalous warming of 2013-2016 on the nutrient supply to surface waters of the Gulf of Alaska. **J. Crusius**, A. Schroth, R.W. Campbell
- 3:00 123. Glacier Fed: Investigating marine iron within Berners Bay. **M. Rhodes-Reese**
- 3:30 *Intermission.*
- 3:45 124. Biogeochemical cycling of mercury in glacial environments: A case study, Matanuska Glacier, Alaska. **B. Hagedorn**
- 4:15 125. Biomimetic polyol surface modifications as potential inhibitors of tetrahydrofuran hydrate formation. **J.R. Hall**, P.W. Baures

Neuroinflammation, Stroke & Aging

Egan Center Room 9

S. Yu, *Organizer*, K. Drew, *Organizer, Presiding*

- 2:30 126. Pharmacological hypothermia for the treatment of stroke and traumatic brain injury. **S. Yu**
- 2:55 127. Combination stem cell therapy for ischemic stroke. **L. Wei**
- 3:20 128. Voltage-gated K channel Kv1.3: A potential therapeutic target for neurodegenerative disorders associated with neuroinflammation. **H. Xiong**
- 3:45 *Intermission.*
- 4:05 129. Role of sirtuin-3 in cognitive deficits of Parkinson's disease. **J. Wu**
- 4:30 130. Selective inhibition of matrix metalloproteinase-9 for the treatment of traumatic brain injury in mice. **Z. Gu**

Recent Advances in Transition Metal Chemistry

Egan Center Room 4

W. A. Howard, J. J. Pak, *Organizers, Presiding*

- 2:30 131. The influence of secondary coordination sphere effects on the reactivity of zinc thiolate complexes. **E.C. Brown**, J. Elsberg, J. Barlow, L. Volz
- 3:10 132. Imaging and modeling transition metal complexes at the solid-solution interface. **B. Chilukuri**, U. Mazur Hippius, K. Hippius
- 3:50 133. On the reaction between rhodium(III) bromide hydrate and diphenylphosphine. **W.A. Howard**, K.A. Wheeler, D. Buccella, M.O. Cogley

Scaling from Atomic to Bulk Processes: Computational, Spectroscopic & Other Techniques for Analyzing Complex Materials

Egan Center Room 6

S. M. Hayes, *Organizer, Presiding*

- 2:30 *Introductory Remarks.*
- 2:35 134. Structure and excited state dynamics of vibronically coupled chromophore dimers in DNA by two-dimensional fluorescence spectroscopy (2DFS). **L.M. Kringle**, M. Saif, J.R. Widom, N.P. Sawaya, A. Aspuru-Guzik, A.H. Marcus
- 2:55 135. Advanced distillation curve analysis and high-temperature rotary viscometry of coal-tar pitch. **P.Y. Hsieh**, T. Bruno
- 3:15 136. Synthesis of surrogate nuclear debris. **A.J. Carman**, M. Liezers, M. Endres, B. Valenzuela, M. Snyder, G.C. Eiden
- 3:35 137. Comparison of designs of various PDMS based microfluidic devices for water quality monitoring. h. Zhang, H. Ilkhani, W. Zhang, S. Williams, **A. Zhou**
- 3:55 *Intermission.*
- 4:15 138. Computational photochemistry of model pollutants and the interface of theory and experiment. **S.N. Eustis**
- 4:35 139. Potential environmental implications of tellurium-rich mine tailings as a function of climate. **N. Knight**, D. Knight, S.M. Hayes
- 4:55 140. Early detection of corrosion via spectroelectrochemical techniques. **C. Price**, T. Lasseter Clare
- 5:15 141. In situ EIS measurements on sculptures using surface hydrogel electrodes. **K. Hosbein**, A. England, T. Lasseter Clare

Student Engagement & Enhanced Learning in the Chemistry Classroom & Laboratory

Egan Center Room 5

F. J. Creegan, *Organizer, Presiding*

- 2:30 *Introductory Remarks.*
- 2:35 142. Student assessment data before and after general chemistry instruction. **R.L. Nafshun**

- 2:55 143. Development of an interdisciplinary junior-level nanoscience course for science and engineering majors with active learning components. **S. Anthony**, M.K. Beekman
- 3:15 144. Introducing solar cells to undergraduate students in the laboratory. **T.M. Pappenfus**
- 3:35 *Intermission.*
- 3:50 145. The POGIL laboratory: Using student-generated data to teach chemistry. **F.J. Creegan**
- 4:10 146. How to make chemistry YouTube videos that aren't boring. **M.A. Christiansen**

WEDNESDAY MORNING

Computational Chemistry: New Methods in Quantum Theory & Applications to Solution & Surface Chemistry

Egan Center Room 10

R. Devanathan, *Organizer*, J. W. Keller, *Organizer, Presiding*

- 8:00 147. Dynamic formation of catalytic active sites during CO oxidation on TiO₂ and CeO₂-supported gold nanoparticles. Y. Wang, Y. Yoon, D. Canu, M. Lee, V. Glezakou, **R. Rousseau**
- 8:30 148. The march towards task-specific transformational solvents for CO₂ capture. **V. Glezakou**, R. Rousseau, D.C. Cantu, M. Lee, J. Lee, D.J. Heldebrant, P.K. Koech, C.J. Freeman
- 9:00 149. CCSD(T) and SAPT exploration of the potential energy landscape of R-Br... π interactions with applications to protein-ligand complexes. **K. Riley**
- 9:35 *Concluding Remarks.*

Neuroinflammation, Stroke & Aging

Egan Center Room 9

K. Drew, *Organizer*, S. Yu, *Organizer, Presiding*

- 9:00 150. Precision translational stroke research. **J. Zhang**
- 9:30 151. Targeted delivery of nanocomplex to the brain tumor-associated macrophages. **H. Dou**
- 10:00 *Intermission.*
- 10:20 152. Resistance to cerebral ischemia/reperfusion injury in arctic ground squirrels. **K. Drew**
- 10:50 153. Targeting NLRP3 inflammasome with a novel pharmacological inhibitor to treat neuroinflammatory conditions. **D. Sun**

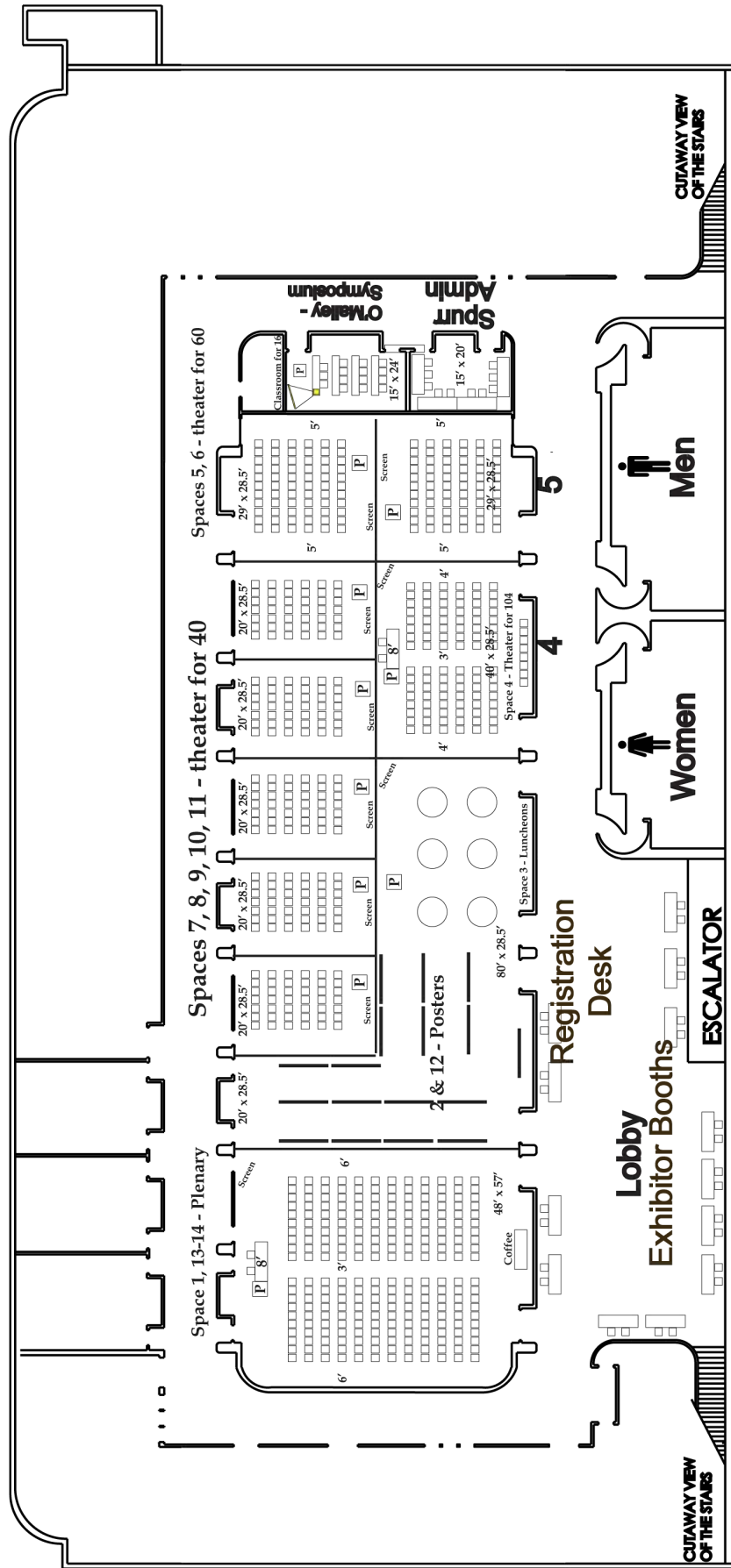
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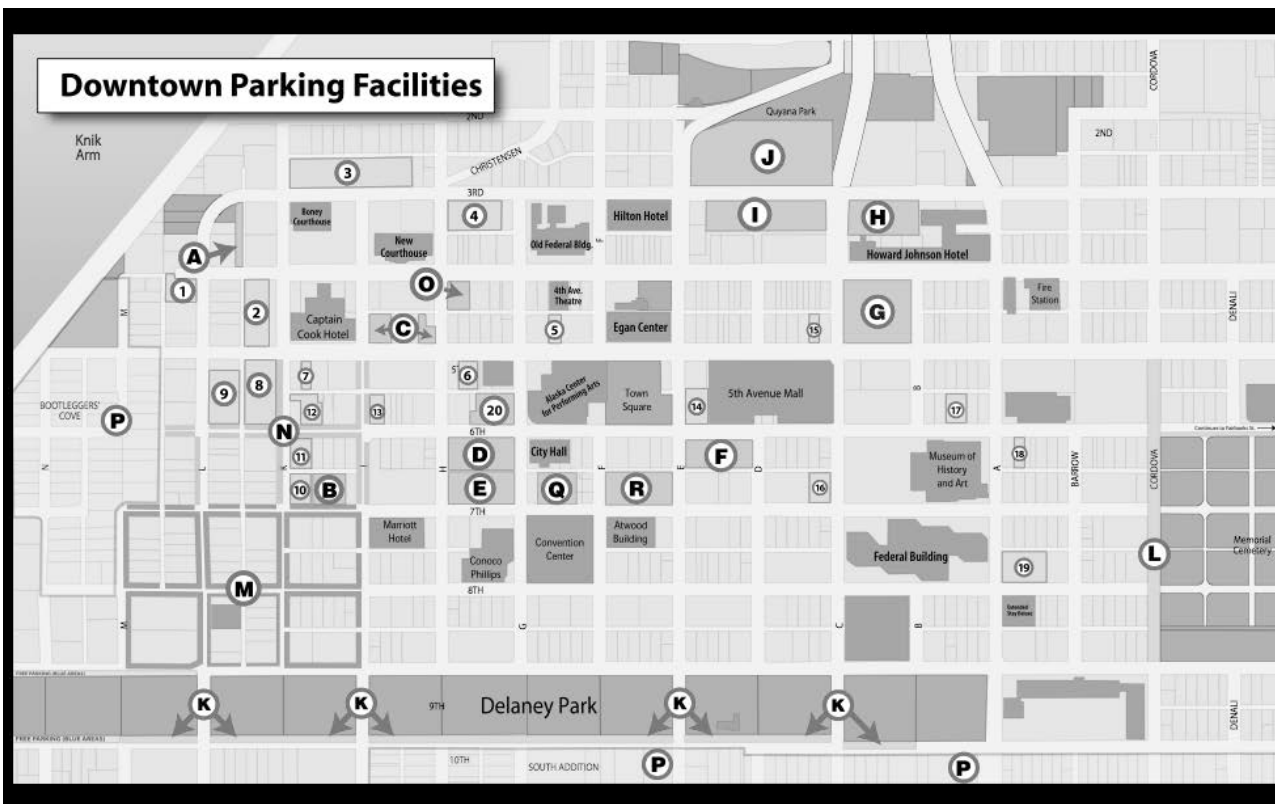
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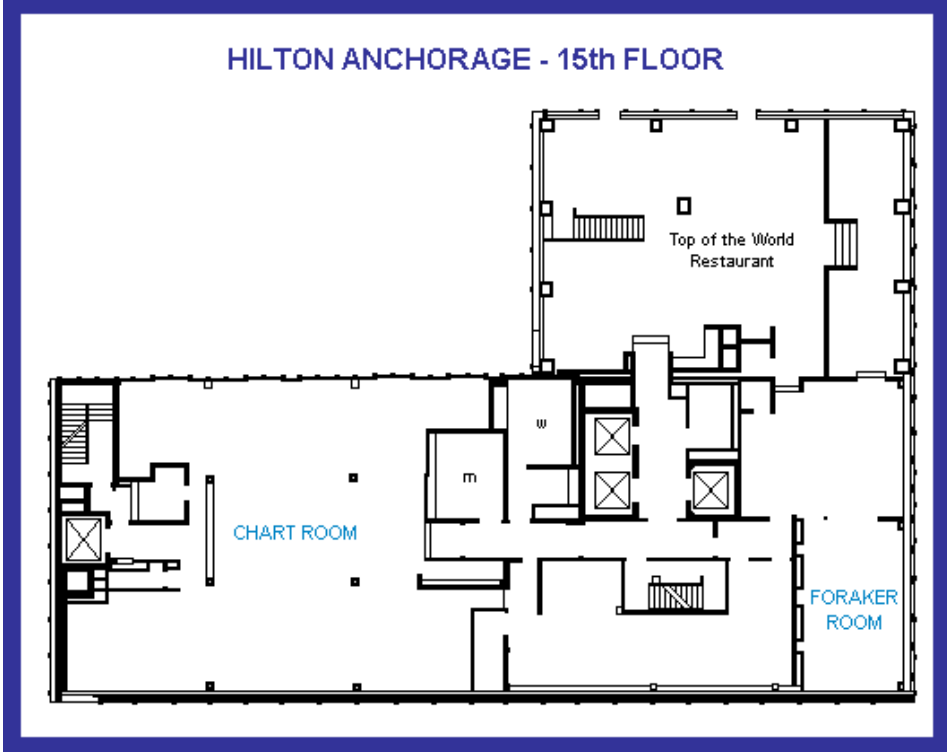
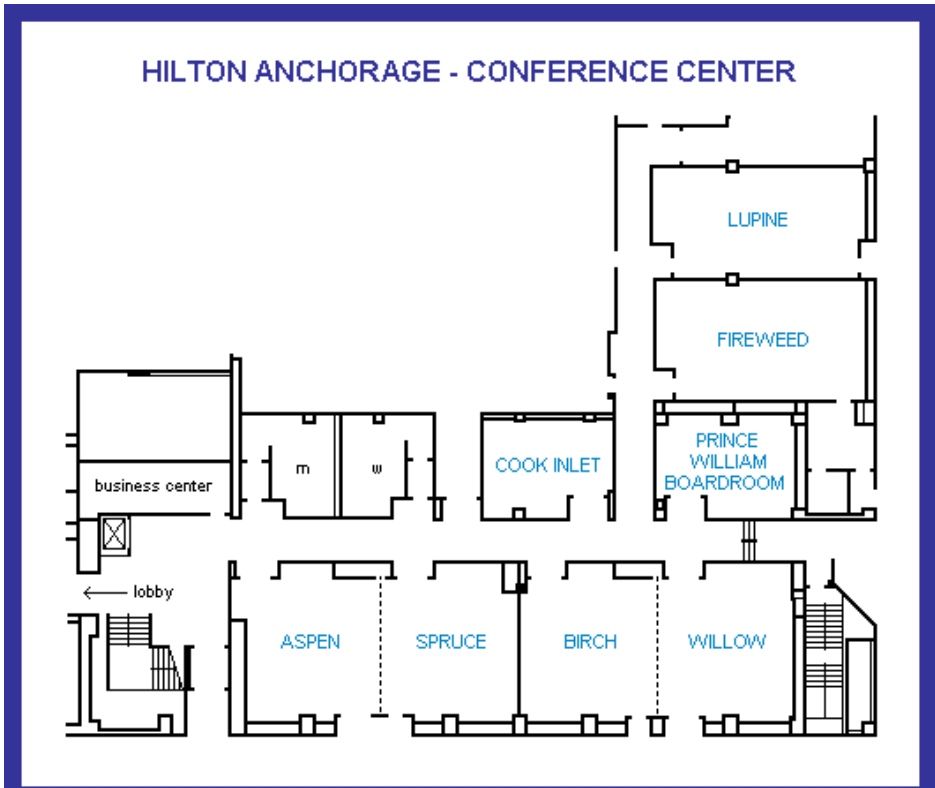
Downtown Anchorage



- STATE and MUNI PARKING**
- A** 3rd & L Street (311 L Street)
Open 24 hours
Hourly: \$1 | Monthly: N/A
 - B** 7th & I (921 West 7th Avenue)
Public: Mon-Fri 5:30 pm-7 am; Saturday-Sun: All Day
Permit: 24 hrs | Hourly: \$1 | Monthly: N/A
 - C** Court Lot (444 H Street)
Public: Mon-Fri 5:30 pm-7 am, Sat-Sun: All Day
Permit: N/A | Hourly: \$1 | Monthly: N/A
 - D** 7th & G Street Garage (627 H Street)
Open 24 hours
Hourly: \$1 | Monthly: \$105; \$115 Premium
 - E** 6th & H Street Garage (700 West 6th Avenue)
Open 24 hours
Hourly: \$1 | Monthly: \$95; \$105 Premium
 - F** J.C. Penney Garage (414 W 6th Avenue)
Open 24 hours
Hourly: \$1 | Monthly: \$85; \$95 Premium
 - G** 5th & B Street Garage (420 B Street)
Open 24 hours
Hourly: \$1 | Daily: | Monthly: \$95
 - H** Howard Johnson (220 W 3rd Avenue)
Open 24 hours
Hourly: \$1; \$1.50 Oversized | Monthly: \$30
 - I** Post Office Mall (344 W 3rd Avenue)
Open 24 hours
Hourly: \$1; \$1.50 Motorcycle | Monthly: \$65; \$80 Long Term
 - J** Lower Bowl (225 E Street)
Open 24 hours
Hourly: \$1; \$1.50 Motorcycle; \$1.50 Oversized | Monthly: \$50
 - K** Park Strip (10th Avenue - B to M Street)
Public: Mon-Fri 8 am-5 pm, Sat-Sun 24 hrs
Permit: 24 hrs
Hourly: Public - Free | Monthly: \$25
 - L** Area 1 (5th-9th on Cordova & 6th Ave from Cordova - Fairbanks)
Open 24 hours
Hourly: \$0.75 Meter (10 hrs) | Monthly: \$50
 - M** Area 3 (J-M Street & 7th-9th Avenue)
Open 24 hours
Hourly: 5.75 Meter (10 hrs), \$1.25 Meter (2 hrs) | Monthly: \$50
 - N** Area 4 (L, K & L Street, between 5th-7th Avenue)
Open 24 hours
Hourly: 5.75 Meter (10 hour), \$1.25 Meter (2 hour) | Monthly: \$50
 - O** LIO Lot (716 W 4th Avenue)
Public: Mon-Fri 5:30 pm-7 am, Sat-Sun 24 hrs
Permit: N/A
Hourly: \$1 | Monthly: N/A
 - P** Residential Areas
Permit ONLY: \$12 per year
 - Q** City Hall (7th Avenue)
Public: Mon-Fri 6 pm - 6 am, Sat-Sun 24 hrs
0-2 hours \$4
2-4 hours \$7
4-6 hours \$10
6-10 hours \$15
M-F 6 AM - 6 PM
Free, 2 Hour maximum stay
 - R** Linnay Pacilio Parking Garage
State Employees & Visitors ONLY 6:00am-5:30pm Mon-Fri
Public: 5:30pm-2:30am Mon-Fri, 6 am - 2:30am Sat & Sun
Hourly: \$1
The garage is closed from 2:30am-6:00am daily

- DIAMOND PARKING**
- 1** Simon & Seafort's (0-2 hours) \$4.00
(2-4 hours) \$6.00
(4-6 hours) \$8.00
 - 2** Captain Cook garage (6am-6pm) \$1.00 per 20 mins
(Overnight) \$8.00
(One day) \$27.00
 - 3** Bonney Courthouse (at 3rd & K Street) (All day until 6pm) \$8.00
 - 4** Snow Goose (at 3rd & H Street) (0-2 hours) \$6.00
(2-4 hours) \$10.00
(4 hours) \$15.00
(6-10 hours) \$20.00
 - 5** Key Bank / PAC (at 5th & F Street) (after 6:00pm ONLY) (0-2 hours) \$5.00
(2-4 hours) \$8.00
(4-6 hours) \$11.00
(6-10 hours) \$15.00
 - 6** Westmark / Brewhouse (at 5th & H Street) (0-2 hours) \$8.00
(2-4 hours) \$15.00
(4-6 hours) \$25.00
(6-10 hours) \$20.00
 - 7** Captain Cook (at 5th & K Street) (0-2 hours) \$5.00
(2-4 hours) \$9.00
(4-6 hours) \$12.00
(6-10 hours) \$15.00
(6pm-6am) \$5.00
 - 8** Voyager Hotel (at 5th & K Street) (0-2 hours) \$5.00
(2-4 hours) \$10.00
(4-6 hours) \$15.00
(6-8 hours) \$20.00
(Monthly) \$145.00
 - 9** Copper Whale Inn (0-2 hours) \$4.00
(2-4 hours) \$6.00
(4-6 hours) \$8.00
(6-8 hours) \$10.00
(8-10 hours) \$12.00
(6pm-6am) \$5.00
 - 10** Marriott Hotel (at 7th & K Street) (0-2 hours) \$4.00
(2-4 hours) \$7.00
(4-6 hours) \$10.00
(6-10 hours) \$12.00
(Monthly) \$120.00
(6pm-6am) \$1.00
 - 11** Anchorage Chamber (at 6th & K Street) (0-2 hours) \$1.00
(2-10 hours) \$7.00
(6pm-6am) \$2.00
 - 12** Platinum Jaxx (at 6th & K Street) (0-2 hours) \$5.00
(2-4 hours) \$9.00
(4-6 hours) \$12.00
(6-10 hours) \$15.00
(6pm-6am) \$5.00
(Month) \$125.00 (Quarter) \$360.00
 - 13** Wings-N-Things (at 6th & I Street) (0-2 hours) \$5.00
(2-6 hours) \$10.00
(6-10 hours) \$15.00
(6pm-6am) \$5.00
 - 14** Town Square / Pennys (at 6th & E Street) (0-2 hours) \$5.00
(2-4 hours) \$8.00
(4-6 hours) \$11.00
(6-10 hours) \$15.00
(6pm-6am) \$5.00
 - 15** Elaine Baker / 5th Ave Mall (at 5th & C Street) (0-2 hours) \$5.00
(2-4 hours) \$8.00
(4-6 hours) \$11.00
(6-10 hours) \$15.00
(6pm-6am) \$5.00
 - 16** Nordstrom (at 7th & C Street) (0-2 hours) \$5.00
(4-10 hours) \$5.00
(6pm-6am) \$2.00
 - 17** Museum North (at 6th & A Street) (0-2 hours) \$3.00
(2-4 hours) \$5.00
(4-10 hours) \$7.00
(6pm-6am) \$2.00
 - 18** Museum East (at 6th between A Street & Barrow) (0-4 hours) \$3.00
(4-10 hours) \$5.00
(6pm-6am) \$2.00
(Sat/Sun/Hol) \$2.00
 - 19** Federal Building South (at 8th & A Street) (0-2 hours) \$4.00
(2-4 hours) \$6.00
(4-6 hours) \$8.00
(6-10 hours) \$12.00
(Monthly) \$95.00
(6pm-6am) \$3.00
 - 20** Augustine Energy Center lot (at 6th & G Street) (0-2 hours) \$5.00
(2-4 hours) \$8.00
(4-6 hours) \$12.00
(6-10 hours) \$15.00
 - 21** Koniag Property lot (at 6th & C Street) (0-2 hours) \$4.00

Hilton Hotel Anchorage







NORM 17
Unanticipated Discoveries



72nd Annual Northwest Regional Meeting
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