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

William Howard, Program Chair

SUNDAY EVENING
Egan Center
Room 2,12

General Poster Session

T. R. Long, A. Nestler, Organizers

6:30 - 8:30


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


9. Extraction and identification of usnic acid from Usnea. G. Carmichael

10. In vitro toxicity profiling of quinoneimine-forming agent. L. Valeu, B. Stamper

12. Highly stereoselective enzymatic reduction of \( \alpha \)-fluoro-\( \beta \)-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**


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**


22. Directed nano-precipitation into nanoporous carbon for hydrogen evolution catalysts. **D.P. Leonard, V. Raju, X. Ji**


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 CO\(_2\) 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


34. Get involved with the ACS Division of Chemical Education. **S. Anthony**


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


42. Adenosine 1AR targeted temperature management in rats and resultant physiological effects of a pharmacological induced hypometabolic state. **B. Laughlin**, K. Drew

**MONDAY MORNING**

Egan Center
Room 5

**Cope Scholar Symposium**

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

Egan Center
Room 7

Entrepreneurs' Tool Kit: Resources and True Stories

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


11:20 Concluding Remarks.

Egan Center
Room 6

Environmental Chemistry General Session

P. Tomco, Organizer, Presiding

8:30 54. Efforts towards improving quantification of woodsmoke contribution to Fairbanks North Star Borough fine particulate (PM2.5) pollution. W.R. Simpson, K. Nattinger, M. Hooper


9:10 56. Removal of the pharmaceuticals salicylic acid, 4-nitroaniliene, 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


Egan Center
Room 4

**Inorganic Chemistry**

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**


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**

Egan Center
Room 9

**Biochemistry General Session**

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

3:50 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


Egan Center
Room 7

Entrepreneurs' Tool Kit: Resources and True Stories

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: Chemists using business acumen and transformative research to address societal needs with chemistry business solutions. J.C. Giordan, J.L. Bryant, M. Dolgos, D.W. Johnson

3:30 Facilitated Q&A.

3:50 72. Overview for panel 2: Chemists using business acumen and transformative research to address societal needs with chemistry business solutions. J.C. Giordan

4:00 73. Panel 2: Chemists using business acumen and transformative research to address societal needs with chemistry business solutions. J.C. Giordan, S. Saha, J. Amador, D.P. Leonard, I. Rodriguez Perez

4:40 Facilitated Q&A.

5:00 Concluding Remarks.

5:05 74. Office hours: Chemists using business acumen and transformative research to address societal needs with chemistry business solutions. J.L. Bryant, J.C. Giordan
High Latitude Pollution Chemistry

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


3:45 Intermission.


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


5:25 Concluding Remarks.

Inorganic Chemistry

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

Egan Center
Room 5

Organic Chemistry General Session

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


3:30  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

Egan Center
Room 6

Applications of Analytical & Radiochemistry for Harsh Environments

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


10:15 Intermission.


10:55 98. Development of spectroscopic instruments and fiber optic probes for applications in radiological analysis. J.M. Bello


Egan Center
Room 5

Applying Methods in Engaging Students in STEM Classes

Financially supported by Arctic Division, AAAS
L. K. Duffy, Organizer, Presiding


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


10:50 107. 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

Egan Center
Room 9

**Drug Discovery: From Natural Products to Medicinal Chemistry**

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**

Egan Center
Room 4

**Recent Advances in Transition Metal Chemistry**

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


9:55 116. 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**

Egan Center  
Room 10

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

Cosponsored by COLL and COMP\textsuperscript{†}  
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.

Egan Center  
Room 7

**High-Latitude Earth-Water Systems**

K. L. Zamzow, *Organizer, Presiding*


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

Egan Center
Room 9

Neuroinflammation, Stroke & Aging

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


3:45 Intermission.

4:05 129. Role of sirtuin-3 in cognitive deficits of Parkinson’s disease. J. Wu


Egan Center
Room 4

Recent Advances in Transition Metal Chemistry

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


3:10 132. Imaging and modeling transition metal complexes at the solid-solution interface. B. Chilukuri, U. Mazur Hipps, K. Hipps

3:50 133. On the reaction between rhodium(iii) bromide hydrate and diphenylphosphine. W.A. Howard, K.A. Wheeler, D. Buccella, M.O. Cogley

Egan Center
Room 6
Scaling from Atomic to Bulk Processes: Computational, Spectroscopic & Other Techniques for Analyzing Complex Materials

S. M. Hayes, Organizer, Presiding

2:30 Introductory Remarks.


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


Egan Center
Room 5

Student Engagement & Enhanced Learning in the Chemistry Classroom & Laboratory

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 a 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. Pappensfus
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

Egan Center
Room 10

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

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


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

9:30 Concluding Remarks.

Egan Center
Room 9

Neuroinflammation, Stroke & Aging

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