

## Curriculum Vitae

Brian Rasley

900 Yukon Drive; room 178  
Department of Chemistry & Biochemistry/CRCD/CNSM  
University of Alaska Fairbanks  
Fairbanks, AK 99775-6160  
907-474-5029  
btrasley@alaska.edu

### Education

B.S., Chemistry, Arizona State University  
M.A., Chemistry, University of Alaska Fairbanks  
PhD., Inorganic Chemistry, Georgetown University

### Work History

1999-2003 Instructor of general and analytical chemistry, University of Alaska Fairbanks  
2002-2004 Research Associate, University of Alaska Fairbanks  
2004-2005 Term Assistant Professor of Chemistry, University of Alaska Fairbanks  
2005-2012 Assistant Professor of Chemistry, University of Alaska Fairbanks  
2012-present Associate Professor of Chemistry, University of Alaska Fairbanks

### Professional Organizations

Member, American Chemical Society 1994-present  
Society for College Science Teachers 2004-present  
National Science Teacher Association 2004-present

### Selected Publications

#### Journal Articles/ Book Chapters

1. Bhowmick, Saurav ; Moore, Jeanette T.; Kirschner, Daniel L.: Curry, Mary C.; Westbrook, Emily G.; Rasley, Brian T.; Drew, Kelly L. Acidotoxicity via ASIC1a Mediates Cell Death during Oxygen Glucose Deprivation and Abolishes Excitotoxicity. *ACS Chem. Neurosci.*, **2017**, 8 (6), 1204–1212.
2. Lundin, Jeffrey G.; Giles, Spencer L.; Yesinowski, James P.; Rasley, Brian T.; Wynne, James H. Nature of Polyoxometalate Intramolecular Coordination to Quaternary Ammonium Salts from Paramagnetic Relaxation Enhancement. *Journal of Physical Chemistry C* **2016**, 120(31), 17767-17776.
3. Christian Sherri L, Rasley, Brian T., Roe Tanna; Moore Jeanette T, Harris Michael B, Drew Kelly L. Habituation of Arctic ground squirrels (*Urocitellus parryii*) to handling and movement during torpor to prevent artificial arousal. *Frontiers in Physiology* **2014**, 5,174
4. Chen C-f., Rasley, BT, Warlick BPE, Green TK, Swearingen KE, Drew KL, Microdialysis and Advances for Sampling Synaptic and Extrasynaptic Pools in *Microdialysis Techniques in*

*Neuroscience*. GD Giovanni DiMatteo (Eds.), Neuromethods; Springer, **2013**, 75, 63-88 (book chapter).

5. Jinka, Tulasi R., Rasley, Brian T., Drew, Kelly L. Inhibition of NMDA Type Glutamate Receptors Induces Arousal from Torpor in Hibernating Arctic Ground Squirrels (*Urocitellus parryii*). *Journal of Neurochemistry*, **2012**, 122(5&6), 934-940

6. Ma, Yi Long; Wu, Shufen; Rasley, Brian; Duffy, Lawrence Adaptive response of brain tissue oxygenation to environmental hypoxia in non-sedated, non-anesthetized arctic ground squirrels. *Comparative Biochemistry and Physiology, Part A*, **2009**, 154, 315–322.

7. Christian, Sherri L.; Ross, Austin P.; Zhao, Huiwen W.; Kristenson, Heidi J.; Zhan, Xinhua; Rasley, Brian T.; Bickler, Philip E.; Drew, Kelly L. Arctic ground squirrel (*Spermophilus parryii*) hippocampal neurons tolerate prolonged oxygen-glucose deprivation and maintain baseline ERK1/2 and JNK activation despite drastic ATP loss. *Journal of Cerebral Blood Flow & Metabolism*, **2008**, 28(7), 1307-1319.

8. Kelly L. Drew\*, C. Loren Buck, Brian M. Barnes, Sherri L. Christian, Brian T. Rasley, Michael B. Harris, Central Nervous System Regulation of Mammalian Hibernation. *Journal of Neurochemistry*, **2007**, 102(6), 1713-1726.

9. Ramesh R. Pant, Brian T. Rasley, Joseph P. Buckley, Christopher T. Lloyd, Robert F. Cozzens, Patrick G. Santangelo, James H. Wynne Synthesis, Mobility Study and Antimicrobial Evaluation of Novel Self-Spreading Ionic Silicone Oligomers. *Journal of Applied Polymer Science*, **2007**, 104(5), 2954-2964.

10. McGill, Colin M., Swearingen, Kristian E., Drew, Kelly L., Rasley, Brian T., Green, Thomas K. Reaction of Naphthalene-2,3-dialdehyde with Cyanide; A Unique Oxidative Condensation Product *J. Heterocyclic Chem.*, **2005**, 42(4), 475-481.

11. Drew, K.L., Pehek, E.A., Rasley, B.T., Ma, Y., Green, T.K. Sampling Glutamate and GABA with Microdialysis: How to get the Membrane Closer to the Synapse? *J. Neuroscience Methods* **2004**, 140, 127-131.

12. Rasley, B.T., Rapta, M., Kulawiec, R.J. Diastereoselectivity in enolate coordination in a new class of chiral ruthenium enolate complexes. *Organometallics* **1996**, 15, 2852-2854.

13. Braddock, J.F., Lindstrom, J.E., Rasley, B.T., Brown, E.J. Patterns of microbial activity in oiled and unoled sediments in Prince William Sound. *American Fisheries Society Symposium* **1996**, 18, 94-108.

14. Rasley, B.T., Rapta, M., Kulawiec, R.J. 2'-(Diphenylphosphino)propiofenone, a Functionalized Tertiary Phosphine. *Acta Cryst.* **1995**, C51, 523-525.

#### **Abstracts/Posters/Presentations/Proceedings**

15. Wynne, James H; Lundin, Jeffrey; Giles, Spencer L.; Rasley, Brian T. Surface segregating coating additives for self-decontaminating applications. From abstracts of papers, 287<sup>th</sup> ACS National Meeting & Exposition, San Diego, CA, United States, Aug. 25-29, 2019.

16. Giles, Spencer L.; Lundin, Jeffrey; Daniels, Grant C.; Rasley, Brian T.; Wynne, James H. Effects of zirconium heterometal substituted polyoxometalate on the reactivity of tungsten peroxy species for CWA decontamination. From abstracts of papers, 257<sup>th</sup> ACS National Meeting & Exposition, Orlando, FL, United States, Mar. 31-April 4, 2019.
17. Rasley, Brian. Using Undergraduate Research to Recruit and Retain STEM Students. Presentation at the Western Alaska Interdisciplinary Science Conference, Unalaska, AK, United States, April 26-29, 2017.
18. Lundin, Jeffrey; Giles, Spencer L.; Rasley, Brian T.; Balow, Robert B.; Pehrsson, Pehr E.; Wynne, James H. Self-decontaminating polymer additives for CWA protection. From Abstracts, 45<sup>th</sup> Middle Atlantic Regional Meeting of the American Chemical Society, Hershey, PA, United States, June 4-6 (2017), MARM-423.
19. Giles, Spencer; Lundin, Jeffrey; Pehrsson, Pehr; Balow, Robert; Gordon, Wesley; Peterson, Gregory; Rasley, Brian; Wynne, James. Comparative roles of Zr(IV) and Ni(II) hetero-metal substituted polyoxometalates in oxidation solutions. From Abstracts, 253<sup>rd</sup> National Meeting of the American Chemical Society, San Francisco, CA, United States, April 2-6 (2017), COLL-835.
20. Giles, Spencer L.; Lundin, Jeffrey G.; Rasley, Brian T.; Wynne, James H. Understanding interactions of organophosphates and thioethers with polyoxometalate clusters. From Abstracts, 71<sup>st</sup> Northwest Regional Meeting of the American Chemical Society, Anchorage, AK, United States, June 26-29 (2016), NORM-60.
21. Lundin, Jeffrey; Streifel, Benjamin; Daniels, Grant; Baumann, Rachel; Duncan, Jesse; Stockelman, Michael; Watters, Chase; Stanbro, Joshua; Rasley, Brian; Wynne, James. Interfacial control of highly absorbent polymers for hemostatic and drug-releasing properties. From Abstracts of Papers, 251<sup>st</sup> ACS National Meeting & Exposition, San Diego, CA, United States, March 13-17, 2016 (2016), COLL-173.
22. Wynne, James; Lundin, Jeffrey; Steifel, Benjamin; Rasley, Brian, "Thermoresponsive Hydrogels for Absorptive Decontamination of CB exposed Skin and Surfaces", Chemical and Biological Defense Science and Technology Conference, St. Louis, MO, May 12-14, 2015.
23. Bechtel, Peter, J.; Nigg, Jon; Rasley, Brian, "Low molecular weight nitrogen compounds in salmon and pollock byproducts", From Abstracts of Papers, 245<sup>th</sup> ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11 (2013), AGFD-124.
24. Giles, Spencer L.; Coneski, Peter N.; Wynne, James H.; Cozzens, Robert F.; Fulmer, Preston A.; Honeychuck, Robert V.; Weatherspoon, Gerald L.; Rasley, Brian T., "Examination of polyoxometalates as possible microbial decontamination agents and subsequent incorporation into electrospun nano-fibrous materials", From Abstracts, 43<sup>rd</sup> Middle Atlantic Regional Meeting of the American Chemical Society, Baltimore, MD, United States, May 31-June 2 (2012), MARM-273

25. Giles, Spencer L.; Coneski, Peter N.; Wynne, James H.; Fulmer, Preston A.; Rasley, Brian T., "Surface active fibrous polymers containing polyoxometalates", From Abstracts of Papers, 243rd ACS National Meeting & Exposition, San Diego, CA, United States, March 25-March 29, 2012 (2012), COLL-406.
26. Rasley, Brian T.; Giles, Spencer L.; Lundin, Jeffrey G.; Watson, Kelly E.; Wynne, James H., "Novel Organometallic Species as Coatings Additives for Self Decomposition of Surfaces" Chemical and Biological Defense Science and Technology (CBD S&T) Conference, November 2010, Orlando, FL.
27. Harrod, Bronwyn; Rasley, Brian; Keller, John, "Computational studies of several ruthenium complexes" from Abstracts, Joint 65th Northwest and 22nd Rocky Mountain Regional Meeting of the American Chemical Society, Pullman, WA, United States, June 20-23 (**2010**), NWRM-134.
28. Rasley, Brian T.; Giles, Spencer L.; Wynne, James H.; Watson, Kelly E., "Decomposition of organic compounds via the use of metal oxide nanoparticles and polyoxometallates" from Abstracts of Papers, 239th ACS National Meeting, San Francisco, CA, March **2010**, INOR-851.
29. Rasley, Brian T.; Giles, Spencer L., "Synthesis of Metal Oxide Nanoparticles and Polyoxometallates for the Decomposition of Organic compounds" Chemical and Biological Defense Science and Technology (CBD S&T) Conference, November 2009, Dallas, TX.
30. James H. Wynne, Collin J. Bright and Brian T. Rasley, "Reactive Self-Decontaminating Coating Systems", 2009 NanoTechnology for Defense Conference, March **2009** San Francisco, CA.
31. Wynne, J.H.; Harney, M.B.; Buckley, J.P.; Cooper, V.K.; Rasley, B.T., "Functional Coatings Utilizing Surface-Actives to Degrade Pesticides and Chemical Simulants", Polymeric Materials: Science & Engineering, **2009**, 100, 123-124.
32. Kirschner, D.L.; Wilson, A.; Wright, G.; Rasley, B; Green, T.K.; Drew, K. Endogenous efflux of D-ser, L-glu, and adenosine in response to model ischemia using microperfusion sampling of single acute hippocampal slices. Proceedings of the 12<sup>th</sup> International Conference on In Vivo Methods 2008, Vancouver, BC, Canada, August 10-14, **2008**, 378-379.
33. Jinka, T.R., Toien, O., Rasley, B.T., Drew, K.L. MK-801 Induces Arousal from Hibernation through Peripheral Effects. The Society for Integrative & Comparative Biology (SIBC) Annual Meeting, San Antonio, TX, January 2-6, **2008**.
34. Daniel Chythlook, (Aleknagik Traditional council), Todd Radenbaugh, and Brian Rasley. Water quality of the Nushagak/Mulchatna Watershed in Western Alaska. 8<sup>th</sup> ACUNS International Conference on Northern Studies, Saskatoon, SK. October 2007.

35. Rodney Etheridge, Todd Radenbaugh, and Brian Rasley Water quality sampling of Squaw Creek, Dillingham, Alaska. 8<sup>th</sup> ACUNS International Conference on Northern Studies, Saskatoon, SK. October 2007.
36. Wynne, James H.; Pant, Ramesh R.; Buckley, Joseph P.; Lloyd, Christopher T.; Santangelo, Patrick G.; Rasley, Brian T. **Highly mobile antimicrobial silicone oligomers.** PMSE Preprints (2007), 96 665-666.
37. Green, T.K.; Kirschner, D.L.; Jarimillo, M.; Rasley, B; Drew, K. Analysis of glutamate and D-serine by reverse polarity capillary electrophoresis using highly charged sulfated  $\beta$ -cyclodextrin. Proceedings of the 11<sup>th</sup> International Conference on In Vivo Methods 2006, Cagliari, Italy, May 19-22, 2006, 258-260.
38. Warlick, B.; Drew, K.; Rasley, B. Some Performance Characteristics of Hand-Constructed, Low Dead Volume, Microdialysis Probes. Proceedings of the 11<sup>th</sup> International Conference on In Vivo Methods 2006, Cagliari, Italy, May 19-22, 2006, 269-271.
39. Christian, S.L.; Schulenburg, B; Kristenson, H.; Rasley, B.T.; Ross, A.P.; Zhao, H.W.; Drew, K.L. The Neuroprotective Molecular Mechanisms Used by the Arctic Ground Squirrel, *Spermophilus Parryii*, to Survive Oxygen-Glucose Deprivation. Abstracts, 6<sup>th</sup> Annual Conference of Specialized Neuroscience Research Programs, Fairbanks, AK, May 31-June 2, 2006, P-6.
40. Green, T.K.; Kirschner, D.L.; Jarimillo, M.; Drew, K.; Rasley, B. Enantioseparation and Stacking of DL-serine by Capillary Electrophoresis and Laser Induced Fluorescence Detection. Abstracts, 6<sup>th</sup> Annual Conference of Specialized Neuroscience Research Programs, Fairbanks, AK, May 31-June 2, 2006, 79-80.
41. Harris, Michael B.; Drew, Kelly L.; Rasley, Brian T.; Green, Thomas K. Ultra small microdialysis microelectrode combination. Abstracts, 60<sup>th</sup> Northwest Regional Meeting of the American Chemical Society, Fairbanks, AK, United States, June 15-18 (2005), GEN-037.
42. Chen, Cheng-fu; Bracio, Boris L.; Rasley, Brian T.; Drew, Kelly L. A Diffusion-Advection Model toward Performance Characterization of a Miniaturized Microdialysis Probe. Abstracts, 60<sup>th</sup> Northwest Regional Meeting of the American Chemical Society, Fairbanks, AK, United States, June 15-18 2005, GEN-038.
43. Swearingen, Kristian E.; Rasley, Brian T.; Green, Thomas K. Development and Characterization of a Capillary Electrophoresis Instrument with Laser-Induced Fluorescence Detection for On-Line In Vivo Analysis of Neurotransmitters via Microdialysis. Abstracts, 60<sup>th</sup> Northwest Regional Meeting of the American Chemical Society, Fairbanks, AK, United States, June 15-18 2005, GEN-053.
44. Warlick, Benjamin P.; Drew, Kelly L.; Rasley, Brian T. Characterization of a Low Dead Volume Microdialysis Probe. Abstracts, 60<sup>th</sup> Northwest Regional Meeting of the American Chemical Society, Fairbanks, AK, United States, June 15-18 2005, GEN-092.

45. Green, T.K., McGill, C.G., Swearingen, K.E., Rasley, B.T., Drew, K.L. Characterization of Side-products from NDA/NaCN On-Column Derivatization of Amino Acid Neurotransmitters. Monitoring Molecules in Neuroscience. Proceedings of the 10<sup>th</sup> International Conference on *In Vivo* Methods, Karolinska Institute, Stockholm, Sweden **2003**,478-480.
46. Rasley, B.T., Drew, K.L., Dick,E., Swearingen, K.E., Green, T.K, In Vivo Monitoring of Glutamate in Hibernating Ground Squirrels: Construction of an On-line Microdialysis/Capillary Electrophoresis/Laser-induced Fluorescence Instrument. Monitoring Molecules in Neuroscience. Proceedings of the 10<sup>th</sup> International Conference on *In Vivo* Methods, Karolinska Institute, Stockholm, Sweden **2003**,481-483.
47. Drew, K.L., Pehek, E.A., Rasley, B.T., Ma, Y., Green, T.K, Sampling glutamate and GABA with microdialysis: How to get the membrane closer to the synapse. Monitoring Molecules in Neuroscience. Proceedings of the 10<sup>th</sup> International Conference on *In Vivo* Methods, Karolinska Institute, Stockholm, Sweden **2003**,413-415.
48. Rasley, B.T., Bachman, R.E., Kulawiec R.J. "Synthesis and Coordination Chemistry of New Chelating Phosphino-Ketone and Phosphino-Imine Ligands" (INORG 0252); presented as a poster at the 213<sup>th</sup> National Meeting of the American Chemical Society, San Francisco, CA, April 13-17, **1997**
49. Kulawiec R.J., Rasley, B.T. "Stereoselective Formation and Reactions of Chiral Transition Metal Enolate Complexes"; presented as a poster at the 1996 Gordon Research Conference on Organic Reactions and Processes, New Hampton, NH, July 14-19, **1996**.
50. Rasley, B.T., Rapta, M., Dickman, M.H., Kulawiec R.J. "Synthesis , Structure and Reactivity of a Chiral Ruthenium Enolate Complex" (INORG) 03035); presented as a talk at the 210<sup>th</sup> National Meeting of the American Chemical Society, Chicago, IL, August 20-24, **1995**.
51. Rasley, B.T., Rapta, M., Dickman, M.H., Kulawiec R.J. "Synthesis and Characterization of a New Class of Chiral Ruthenium Enolate Complexes"; presented as poster #195 at the 29<sup>th</sup> Middle Atlantic Regional Meeting of the American Chemical Society, Washington, DC, May 24-27, **1995**.
52. Braddock, J.F., Lindstrom, J.E., Yeager, T.R., Rasley, B.T., Winter, G., Brown, E.J. **1993**. Microbial activity in sediments following the *TV Exxon Valdez* oil spill. Expanded and peer reviewed abstract from the *Exxon Valdez Oil Spill* Symposium, February 1993, Anchorage, AK.
53. Braddock, J.F., O'Malley, M., Rasley, B.T. **1991**. Hydrogen utilization in *Thiobacillus ferrooxidans*. Abstracts of the American Society for Microbiology 91<sup>st</sup> Annual Meeting, Dallas, TX.

### **Government Reports**

54. Braddock, J.F., K.A. Gannon and B.T. Rasley. **2004**. Petroleum hydrocarbon-degrading microbial communities in Beaufort–Chukchi Sea sediments. Final Report. OCS Study MMS 2004-061 University of Alaska Coastal Marine Institute, University of Alaska Fairbanks and USDO, MMS, Alaska OCS Region, 38 p.

55. Braddock, J.F., Rasley, B.T., Nix, L. **1992**. Hydrogen utilization by *Thiobacillus ferrooxidans* isolated from neutral pH mine drainage. Water Research Center, University of Alaska, Completion Report.

56. Braddock, J.F., Rasley, B.T., Yeager, T.R., Lindstrom, J.E., Brown, E.J. **1992**. Hydrocarbon mineralization potentials and microbial populations in marine sediments following the *Exxon Valdez* oil spill. Final report to the Alaska Department of Environmental Conservation. (**Peer reviewed** and revised in 1993)

57. Brown, E.J., Rasley, B.T., Dixson, D.P., Hong, S., Luong, H.V., Braddock, J.F. **1990**. Microbial Ecology of *Thiobacillus ferrooxidans*. Final technical report to the U.S. Department of the Interior, contract number 14-08-0001-61313.

#### **Patents Awarded**

58. Mobile Self-Spreading Biocides Filed May 16, 2007, serial number 11/749,252. Patent awarded June 22, 2010 (U.S. Patent 7,741,503)

59. Mobile Self-Spreading Biocides Filed May 21, 2010, serial number 12/784,752. Patent awarded January 29, 2013 (U.S. Patent 8,362,290)