

Kriya L. Dunlap  
Department of Chemistry & Biochemistry  
Institute of Arctic Biology  
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## EDUCATION

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- Cornell University, Ithaca, New York 1998
- B.S.— Animal Science
- University of Alaska, Fairbanks, Alaska 2003
- M.S.— Biochemistry and Molecular Biology
  - *Thesis: Comparison of blood parameters associated with exercise and the total antioxidant power in sled dogs supplemented with blueberries*
- University of Alaska, Fairbanks, Alaska 2007
- Ph.D.— Nutrition
  - *Thesis: Sled dogs as a sentinel and model for nutritional and physiological adaptations in the circumpolar north.*
- University of Alaska, Fairbanks 2007 – 2010
- Postdoc— Neurochemistry
  - Wild AK berries modulate neuroinflammation in SHSY-5Y neuroblastoma cells.

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## PROFESSIONAL EXPERIENCE

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- Associate Professor Biochemistry** 2019 – present  
*Department of Chemistry and Biochemistry, Institute of Arctic Biology, University of Alaska Fairbanks*
- Nestlé Purina** 2016 – 2019  
*Consultant*
- Assistant Professor Biochemistry** 2012 – 2019  
*Department of Chemistry and Biochemistry, Institute of Arctic Biology, University of Alaska Fairbanks*
- Term Research Assistant Professor** 2009 – 2012  
*Engineering, Science and Technology Experiment Station (ESTES), University of Alaska Fairbanks*

<b>Post Doctoral Research (Neurochemistry)</b> <i>Department of Chemistry and Biochemistry, University of Alaska Fairbanks</i> <i>Mentor: Thomas B Kuhn</i>	2007 – 2009
<b>Research Assistant</b> <i>Department of Chemistry and Biochemistry, University of Alaska Fairbanks</i>	2004 – 2005
<b>Teacher's Assistant</b> <i>Department of Chemistry and Biochemistry, University of Alaska Fairbanks</i> <i>General Chemistry</i>	2001 – 2007
<b>High School Summer Science Camp (co-instructor)</b> <i>Alaska Science Research Academy, University of Alaska Fairbanks</i>	summer 2002 & 2003
<b>Laboratory Technician</b> <i>Nestlé Purina Sled Dog Research Facility, Salcha, Alaska</i>	2000 – 2001
<b>Laboratory Technician</b> <i>Woodchuck Hepatitis Research Facility, Cornell University</i>	1999
<b>Laboratory Technician</b> <i>Sheep Breeding Research Facility, Cornell University</i>	1999
<b>Sled Dog Research Facility Student Manager</b> <i>Cornell University</i>	1996 – 1998

## SKILLS

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- Cell culture
- Microscopy
- Western blot and gel electrophoresis
- Immunoprecipitation
- Enzyme-linked immunosorbent assay (ELISA)
- Flow Cytometry
- Canine blood sampling
- Buffy coat and plasma extraction
- Canine handling – exercising, hair sampling, fecal swabs, muscle biopsies
- Community and science outreach
- Rural sample collection
- Augmented reality
- Infrared imaging
- Graduate, undergraduate, and high school student mentoring
- Flipped classroom
- Distance delivery
- Technology in the classroom

**FUNDING**

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**CURRENT:**

1. USDA ANNH 08/01/18-06/30/22  
Project Title: Back to the river: the science behind Alaska's traditional subsistence lifestyle  
Role: PI (489K)
2. Transformative Research in Metabolism (TRiM) 07/01/21-06/30/23  
Project Title: Vitamin D and healthy aging: establishing a sled dog model for the circumpolar north  
Role: PI (100K)

**IN PREPARATION:**

3. NIH R03  
Project Title: Vitamin D and healthy aging: establishing a sled dog model for the circumpolar north. Due February 16
4. American Diabetes Association – Visionary Award – canceled it for this year because of COVID. Waiting for it to re-open.  
Project Title: Peripheral blood mononuclear cells as a surrogate for tissue for assessing GLUT4 translocation

**COMPLETED:**

1. Nestlé Purina 01/2017-09/2018  
Project Title: Brown adipose thermogenesis in Alaska sled dogs: Influence of age, training, and cold adaptation
2. NIH Building Infrastructure leading to diversity (BUILD) Initiative (U54) 05/06/16-06/30/18  
Project Title: Exploring Traditional Ecological Knowledge on the Yukon River  
Role: Pilot Project award (30K/year)
3. NIH Building Infrastructure leading to diversity (BUILD) Initiative (U54) 07/01/16-06/30/17  
Equipment award for a 24 foot Yukon River boat  
Role: PI
4. NIH/NCRR/NIGMS (INBRE) – Barnes (PI) 07/8/15-08/30/15  
Project Title: Diet and exercise as social determinants of disease in Alaska (Chem 494/694)  
Role: Curriculum development award (12K)
5. NIH/NCRR/NIGMS (INBRE) – Barnes (PI) 07/01/14-6/30/15  
Project Title: The environment, diet and metabolic syndrome  
Role: Pilot project funding (25K)
6. UAF College of Liberal Arts 01/01/15-05/15/15  
Project Title: Thermal Portraits  
Role: CoPI with Jennifer Moss from eLearning (\$1,000)
7. NIH/NCRR/NIGMS (INBRE) – 8P20GM103395-12: Krebs (PI), Frye 05/01/09-02/28/14

- Project Title: The environment, diet and metabolic syndrome  
 Role: Sub-Project Principal Investigator
8. UAF Office of Sustainability 01/10/13-05/15/13  
 Project Title: Sustainability Enhancement for Chemistry 104  
 Role: PI (\$1300)
  9. Nestlé Purina 09/01/12-08/30/13  
 Project Title: The effects of exercise on glucose transporter 4 expression in mononuclear cells of sled dogs  
 Role: PI (\$19,286)
  10. Nestlé Purina 12/10-12/11  
 Project title: Glucose transporter 4 expression on the plasma membrane of resting and activated white blood cells  
 Role: PI (10K)
  11. Nestlé Purina 2004-2007  
 Project Title: Immune function and contaminants in sled dogs on village diets along the Yukon River  
 Role: PhD thesis project
  12. Nestlé Purina 2005-2007  
 Project Title: Cross-latitudinal, seasonal and diurnal comparisons in thyroid hormone and melatonin concentrations in sled dogs  
 Role: PhD thesis project
  13. Alaska EPSCoR 09/04-09/05  
 Role: Graduate Research Fellowship Award
  14. Nestlé Purina 2004-2005  
 Project Title: Proinflammatory cytokines in canines  
 Role: PhD thesis project
  15. Nestlé Purina 2001-2003  
 Project title: Antioxidant properties of blueberries supplemented to racing sled dogs  
 Role: MS thesis project

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## PUBLICATIONS

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## MANUSCRIPTS

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1. Witkop JJ, Vertigan T, Reynolds A, Duffy L, Barati B, Jerome J, **Dunlap K.** (2021) Sled dogs as a model for PM2.5 exposure from wildfires in Alaska. Environ Int. doi:10.1016/j.envint.2021.106767
2. Kromrey L, Jerome S, Olnes S, Duffy L, Reynolds A, **Dunlap K.** (2020) Sled dogs as a model for brown fat research. Adv Clin Toxicol. DOI: 10.23880/act-16000195
3. Collin A, Jimmie S, Reynolds A, Schnurr T, Duffy L, **Dunlap K.** (2019) Weight gain, conditioning and metabolic syndrome: a sled dog model. Am J Biochem Biotechnol. DOI: 10.3844/ajbbbsp.2019
4. Chauhan S, **Dunlap K.**, Duffy LK. (2018) Methyl Mercury, Adipokines, 3T3-L1 cells and Diabetes. Adv Clin Toxicology; 3(4). DOI: 10.23880/act-16000141

5. Duffy LK, De Wilde L, Spellman K, **Dunlap KL**, Dainowski B, McCullough S, Luick B, van Muelken M. (2018) Resilience and adaptation: Yukon River watershed contaminant risk indicators. *Scientifica*; accepted July 12.
6. Sticka K, Schnurr TM, Jerome SP, Dajles A, Reynolds AJ, Duffy LK, Knall CM, **Dunlap KL**. (2018) Exercise increases Glucose Transporter-4 levels on peripheral blood mononuclear cells. *MSSE*; 50(5): 938-944. DOI: 10.1249/MSS.0000000000001528
7. McGill CM, Brown TJ, Cheng YY, Fisher LN, Shanmugavelandy SS, Gustafson SJ, **Dunlap KL**, Lila MA, Kester M, Toran PT, Claxton DF, Barth BM. (2018). Therapeutic Effect of Blueberry Extracts for Acute Myeloid Leukemia. *Int J Biopharm Sci*; 1(1). DOI: 10.31021/ijb.20181102
8. Jerome SP, Sticka KD, Schnurr TM, Mangum SJ, Reynolds AJ, **Dunlap KL**. (2017) 25(OH)D levels in trained versus sedentary university students at 64° north. *Int J Circumpolar Health*; 76(1): 1314414. DOI: 10.1080/22423982.2017.1314414
9. Duffy LK, Vertigan T, Dainowski B, **Dunlap K**, Hirons A. (2017) Climate change, one health and mercury. *Adv Clin Toxicol*; 2(1).
10. Vertigan T, **Dunlap K**, Reynolds A, Duffy L. (2017) Effects of methylmercury exposure in 3T3-L1 Adipocytes. *AIMS Environ Sci*; 4(1): 94-111. DOI: 10.3934/environsci.2017.1.94.
11. Harley JR, Bammler TK, Farin FM, Beyer RP, Kavanagh TJ, **Dunlap KL**, Knott KK, Ylitalo GM, O'Hara TM. (2016) Using domestic and free-ranging Arctic canid models for environmental molecular toxicology research. *Environ Sci Technol*; 50(4): 1990-1999. DOI: 10.1021/acs.est.5b04396
12. Schnurr TM, Reynolds AJ, Komac AM, Duffy LK, **Dunlap KL**. (2015) The effects of acute exercise on GLUT4 levels in peripheral blood mononuclear cells of sled dogs. *Biochem Biophys Rep*; 2: 45-49.
13. Nicholas-Figueroa L, Barnhardt R, Duffy LK, **Dunlap K**, van Meulken M, Middlecamp CH. (2015) Delivering post-secondary STEM education on the North Slope, Alaska: resilience and adaptation. *Int Res Educ*; 3(2): 97-108.
14. Scerbal C, Swarup M, Schnurr T, Tackett A, Zheng J, Bender G, **Dunlap K**. (2015) Biomembrane Transformation: Instructor Led to iPad Based Student Led. *Journal of Modern Education Review*; 5(2): 195-203. DOI: 10.15341/jmer(21557993)/02.05.2015/009
15. Duffy LK, **Dunlap KL**, Godduhn AR. (2014) Bias, complexity, and uncertainty in ecosystem risk assessment: pharmaceuticals, a new challenge in scale and perspective. *Environ Res Lett*; 9. DOI: 10.1088/1748-9326/9/9/091004
16. Schnurr TM, Reynolds AJ, Gustafson SJ, Duffy LK, **Dunlap KL**. (2014) Conditioning causes an increase in glucose transporter-4 levels in mononuclear cells in sled dogs. *Int J Biochem Cell Biol*; 55: 227-231. DOI: 10.1016/j.biocel.2014.09.009
17. Zheng J, Schnurr T, **Dunlap KL**, Das D, Duffy LK. (2014) Effects of zinc oxide nanoparticles on neuroblastoma SH-SY5Y cells. *Am J Biochem Biotech*; 10(2): 116-124. DOI: 10.3844/ajbbbsp.2014.116.124
18. Duffy LK, **Dunlap K**, Reynolds A, Gerlach SC. (2013) Sled dogs as indicator of climate change and resultant contaminant fate and transport along the Yukon River. *Int J Circumpolar Health*; 72: 508-510.
19. Grace MH, Esposito D, **Dunlap KL**, Lila MA. (2013) Comparative analysis of phenolic content and profile, antioxidant capacity, and anti-inflammatory activity in wild Alaskan and commercial Vaccinium Berries. *J Agric Food Chem*; 62(18): 4007-4017. DOI: 10.1021/jf403810y

20. Schnurr T, Reynolds AJ, Duffy LK, **Dunlap KL**. (2013) Glucose transporter 4 expression in white blood cells: a sled dog model for human health. *Polar Record*. DOI: <http://dx.doi.org/10.1017/S0032247413000831>
21. Gustafson SJ, **Dunlap KL**, McGill CM, and Kuhn TB. (2012) A nonpolar blueberry fraction blunts NADPH oxidase activation in neuronal cells exposed to tumor necrosis factor-alpha. *Ox Med and cell Long*; 2012: doi:10.1155/2012/768101
22. **Dunlap KL**, Reynolds AJ, Gerlach SG, and Duffy LK. (2011) Mercury interferes with endogenous antioxidant levels in Yukon River subsistence-fed sled dogs. *Environ Res Lett*; 6.
23. **Dunlap KL**, Reynolds AJ, Duffy LK, Gerlach SG, Loring PA, Cleroux M and Godin JP. (2011) Selected plasma fatty acid levels in subsistence fed sled dogs along the Yukon River: a pilot study for biomonitoring. *Polar Record*, Available on CJO 2011 doi:10.1017/S0032247411000350
24. Lokken JA, Finstad GL, **Dunlap KL**, Duffy LK. (2009) Mercury in lichen and reindeer hair from Alaska: 2005-2007 pilot survey. *Polar Record*; 45(4): 368-374.
25. **Dunlap KL**, Reynolds AJ, Refsal KR, Kerr WW, Duffy LK. (2008) Cross-latitudinal, seasonal and diurnal comparisons in thyroid hormone concentrations in sled dogs. *Am J Animal & Vet Sci*; 3(4): 96-103.
26. **Dunlap KL**, Reynolds AJ, Bowers PM, Duffy LK. (2007) Hair analysis in sled dogs (*Canis lupus familiaris*) illustrates a linkage of mercury exposure along the Yukon River with human subsistence food systems. *Sci Total Environ*; 385(1-3): 80-5.
27. **Dunlap KL**, Reynolds AJ, Tosini G, Kerr WW, Duffy LK. (2007) Seasonal and diurnal melatonin production in exercising sled dogs. *Comp Biochem Physiol A Mol Integr Physiol*; 147(4): 863-7.
28. **Dunlap KL**, Reynolds AJ, Duffy LK. (2006) Total antioxidant power in sled dogs supplemented with blueberries and the comparison of blood parameters associated with exercise. *Comp Biochem Physiol A Mol Integr Physiol*; 43(4): 429-34.

## MANUSCRIPTS IN REVIEW

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## MANUSCRIPTS IN PREPARATION

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Jerome SP, **Dunlap KL**, Duffy LK, Reynolds AJ. (2019) Oxidative stress in collegiate endurance athletes: insights into overtraining syndrome. *Redox*

Jerome SP, **Dunlap KL**, Duffy LK, Reynolds AJ. (2018) Jerome SP, **Dunlap KL**, Duffy LK, Reynolds AJ. (2019) Seasonal Changes of Vitamin D and Cognitive Function in Collegiate Cross Country Skiers at 64° North

## CONFERENCE PROCEEDINGS & POSTERS

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**Dunlap KL**. The sled dog model for human health and science outreach. American Chemical Society, Philadelphia, PA. March 22-26, 2020. Invited speaker. Canceled due to COVID-19. Abstract published.

**Dunlap KL.** Sled dogs as a model for human health in the circumpolar north. One Health—One Arctic Conference, Oulu Finland, February 7-9, 2019. Oral presentation and published abstract.

Kromrey L, Jerome S, Reynolds A, Olnes S, Duffy L, **Dunlap K\***. Monitoring brown adipose tissue in Alaskan sled dogs: a pilot study. 17<sup>th</sup> International Congress of Circumpolar Health, Copenhagen, Denmark, August 2018. Oral and poster presentation.

Jerome SP\*, Sticka K, Schnurr TM, Mangum SJ, Reynolds AJ, **Dunlap KL.** 25(OH)D Levels in Trained v. Sedentary University Students at 64°. 17<sup>th</sup> International Congress of Circumpolar Health, Copenhagen, Denmark, August 2018. Oral.

Duffy LK\*, Middlecamp CH, Nicholas-Figueroa L, Lindstrom TD, **Dunlap KL.** Combining chemistry with knowledge of the local environment. 253<sup>rd</sup> ACS National Meeting, San Francisco, CA, April 2017. Oral-presentation.

Jerome SP\*, Sticka K, Schnurr TM, Mangum SJ, Reynolds AJ, **Dunlap KL.** 25(OH)D Levels in Trained v. Sedentary University Students at 64°. American Chemical Society Northwest Regional Meeting, Anchorage, AK, June 2016. Oral presentation.

Jerome SP\*, Sticka K, Schnurr TM, Mangum SJ, Reynolds AJ, **Dunlap KL.** 25(OH)D Levels in Trained v. Sedentary University Students at 64°. Annual meeting of the American College of Sports Medicine, Boston, MA, June 2016. Poster and abstract. President's Cup entrant.

Jerome SP\*, Sticka K, Schnurr TM, Mangum SJ, Reynolds AJ, **Dunlap KL.** 25(OH)D Levels in Trained v. Sedentary University Students at 64°. University of Alaska Biomedical Research Conference, Fairbanks, AK, May 2016. Oral presentation.

Jerome SP\*, Sticka K, Schnurr TM, Mangum SJ, Reynolds AJ, **Dunlap KL.** 25(OH)D Levels in Trained v. Sedentary University Students at 64°. Annual meeting of the Northwest and Alaska Chapters of the American College of Sports Medicine, Tacoma, WA, April 2016. Poster, oral presentation and abstract. Poster won the President's Award.

Sticka KD\*, Schnurr TM, Knall CM, Jerome SP, Duffy LK, **Dunlap KL.** The Role of Glucose Transporter 4 in Diabetes and Insulin Resistance, Arctic Health Sciences Seminar, Anchorage, AK, 2015. Student Presentation.

Jimmie S\*, Collin A, **Dunlap K.** The inflammatory effect of weight gain in racing sled dogs. NIDDK STEP-UP, Washington D.C., August 2014. Presentation & Poster.

Sticka KD\*, Schnurr TM, Knall CM, Jerome SP, Duffy LK, **Dunlap KL.** Glucose Transporter-4 (GLUT4) Expression on Peripheral Blood Mononuclear Cells in Conditioned vs. Sedentary College Students. UAA Faculty Research & Creative Activity Symposium, Anchorage, AK, 2014. Poster.

**Dunlap KL,** Bender G, Schnurr TM. Biomembrane Transformation: Instructor Led to iPad Based Student Led. The International Conference of Higher Education Teaching & Learning, Anchorage Alaska, May 2014. Abstract.

Rusconi JC, **Dunlap KL**, Schnurr TM, Power JM, Walf AA, Frye CA. Differences in plasma levels of progesterone in male and female sled dogs immediately and twenty four hours after exercising. Neuroscience, San Diego California, November 2013. Abstract.

Jimmie S\*, Schnurr T, Collin A, **Dunlap K**. Measuring Hb1Ac and adiponectin concentrations in conditioned and sedentary sled dogs. NIDDK STEP-UP, Washington D.C., August 2013. Presentation & Poster.

Grace MH\*, Esposito D, **Dunlap K**, Lila MA. Phytochemical profiles of Alaskan berries and their importance to human health. Berry Health, Kannapolis North Carolina, June 2013. Abstract published in proceedings. Poster.

Schnurr TM\*, Reynolds AJ, Komac A, **Dunlap KL**. Glucose transporter-4 expression in white blood cells of sled dogs and the effects of conditioning. Midnight Sun Science Symposium, Fairbanks Alaska, March 2013. Poster.

Schnurr TM\*, Reynolds AJ, Gustafson SJ, Duffy LK, **Dunlap KL**. Glucose transporter 4 levels in old versus young sled dogs. 15<sup>th</sup> International Congress of Circumpolar Health, Fairbanks Alaska, August 2012. Abstract & Poster.

Schnurr TM, Gustafson SJ, **Dunlap KL\***. Glucose transporter 4 expression in white blood cells of young and old sled dogs. Native Health Research conference, Seattle, WA, July 16-19, 2012. Poster.

**Dunlap KL\***, Reynolds AJ, Duffy LK. Lipid profiles in subsistence fed sled dogs along the Yukon River. Native Health Research conference, Seattle, WA, July 16-19, 2012. Poster.

**Dunlap KL\***, Gustafson SJ, McGill CM, Clausen TP, Kuhn TB. Inhibition of Neutral Sphingomyelinase with compounds isolated from wild Alaskan Blueberries. Functional Foods in Chronic Diseases, Las Vegas Nevada March 2011. Abstract & Poster.

**Dunlap KL**, Loring PA, Reynolds AJ, Gerlach SC, Murray MS, Duffy LK\*. Eat, Prey, Hg – Climate change impacts and circulating biomarkers of effect along the Yukon River: sled dogs as potential sentinels of vulnerabilities to rural populations. Girdwood, AK, October 2010. Abstract & Poster.

**Dunlap KL\***, Reynolds AJ, Gerlach SC, Duffy LK. Lipid profiles in subsistence fed sled dog along the Yukon River. Biomedical EAC/PAC meeting. Fairbanks, AK, June 2010. Poster.

**Dunlap, KL\***, Reynolds AJ, Barnett B, Tosini G, Zanghi BM, Duffy LK. Effect of latitude and exercise on diurnal and seasonal variations in melatonin. 35<sup>th</sup> Annual American Aging Association. Boston, MA, June 2006. Abstract & Poster.

**Dunlap KL\***, Reynolds AJ, Duffy LK. Cholesterol and triglyceride levels in aging sled dogs. 34<sup>th</sup> Annual American Aging Association. Oakland, CA, June 2005. Abstract & Poster.

**Dunlap KL\***, Reynold AJ, Duffy LK. Comparison of blood parameters associated with exercise and the total antioxidant power in sled dogs supplemented with blueberries. 32<sup>nd</sup> Annual American Aging Association, Baltimore, Maryland, June 2003. Abstract & Poster.

**Dunlap KL\***, Creed M, Ma D, Mathews E, Tirrell P, Duffy LK. 2002. Comparison of total antioxidant studies in berries and sled dogs. 53<sup>rd</sup> Arctic Science Conference, September 2002. Abstract & Poster.



\* **presenting author**

## BOOK CHAPTERS

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Lila, MA and **Dunlap K.** 2021. Chapter 3. Answering the call of the wild: Polyphenols in traditional therapeutic practice. p. 49- 68 In: (Jess Reed, Victor de Freitas and Stephane Quideau, editors). Recent Advances in Polyphenol Research Volume 7. Wiley Blackwell. 305 pp.

**Dunlap KL**, Godduhn A, Duffy LK. (2011) Foods and Nutrition in the Arctic. In Land and Environment in the North. (Duffy, A., Duffy, L., Erickson, K., and Kelly, J. eds). Traditional Knowledge Network Publishers.

Duffy LK, Godduhn A, **Dunlap KL**, van Muelken M. (2011) Sustainability and Chemistry: Key concepts in an Arctic-focused interdisciplinary course. In Sustainability in the chemistry curriculum (Middlecamp, ed) ACS Books, Washington, DC.

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## TEACHING

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### ***Fall 2020:***

University of Alaska Fairbanks	Organic Chemistry I (CHEM 321)
University of Alaska Fairbanks	Membranes Biochemistry and Biophysics (CHEM 674)

### ***Spring 2020:***

University of Alaska Fairbanks	Chemistry Seminar (CHEM 482)
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### ***Fall 2019:***

University of Alaska Fairbanks	Basic General Chemistry (CHEM 103)
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### ***Fall 2018:***

University of Alaska Fairbanks	Basic General Chemistry (CHEM 103)
University of Alaska Fairbanks	Membranes Biochemistry and Biophysics (CHEM 674)

### ***Spring 2018:***

University of Alaska Fairbanks	Undergraduate Research (CHEM 488)
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### ***Fall 2017:***

University of Alaska Fairbanks	Basic General Chemistry (CHEM 103)
University of Alaska Fairbanks	Chemistry Seminar (CHEM 481, 482)

### ***Fall 2016:***

University of Alaska Fairbanks	Membranes Biochemistry and Biophysics (CHEM 674)
University of Alaska Fairbanks	Nutritional Biochemistry (CHEM 494)

### ***Spring 2016:***

University of Alaska Fairbanks	General Organic and Biochemistry (CHEM 104)
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University of Alaska Fairbanks	Nutritional Biochemistry (CHEM 494)
<b>Summer 2015:</b> University of Alaska Fairbanks	Seminar (CHEM 692 F02)
<b>Spring 2015:</b> University of Alaska Fairbanks	Membranes Biochemistry and Biophysics (CHEM 674)
<b>Spring 2014:</b> University of Alaska Fairbanks University of Alaska Fairbanks	General Organic and Biochemistry (CHEM 104) Nutritional Biochemistry (CHEM 493)
<b>Fall 2014</b> University of Alaska Fairbanks	Seminar (CHEM 692 F02)
<b>Spring 2013:</b> University of Alaska Fairbanks	Membranes Biochemistry and Biophysics (CHEM 674)
<b>Fall 2011:</b> University of Alaska Fairbanks	Principles of Metabolism and Biochemistry (BIOL 303)
<b>Spring 2011:</b> University of Alaska Fairbanks University of the Arctic	General Chemistry I (CHEM 105) Land and Environment I (BCS 311)
<b>Fall 2010:</b> University of Alaska Fairbanks University of the Arctic	Animal Nutrition (VTS 150) Land and Environment II (BCS 312)
<b>Summer 2010:</b> University of Alaska Fairbanks	Chemistry in Complex Systems (CHEM 100)
<b>Fall 2008:</b> University of Alaska Fairbanks	Basic General Chemistry (CHEM 103)
<b>Summer 2008:</b> University of Alaska Fairbanks	Basic General Chemistry (CHEM 103)
<b>Spring 2008:</b> University of Alaska Fairbanks	Chemistry in Complex Systems (CHEM 100)
<b>Fall 2007:</b> University of Alaska Fairbanks	Chemistry in Complex Systems (CHEM 100)
<b>Summer 2007</b> University of Alaska Fairbanks	General Chemistry II (CHEM 106)

University of Alaska Fairbanks      Basic General Chemistry (CHEM 103)

***Spring 2007***

University of Alaska Fairbanks      Chemistry in Complex Systems (CHEM 100, co-instructor)

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**SERVICES**

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**GRADUATE STUDENT COMMITTEES**

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**Kali Striker (MS)**      2019 – present  
*Chair*

**Laura Lamecker (MS)**      2019 – present  
*Chair*

**Shubhangi Chauhan (MS)**      2017 – 2019  
*Committee member*

**Savanna Chesworth (MS)**      2016 – present  
*Chair*

**Sarah Suarez**      2019 – present  
*Committee member*

**Tyler Smith**      2018 – present  
*Committee member*

**Shahab Soltani**      2018 – present  
*Committee member*

**Moriah Hunstiger (PhD)**      2016 – present  
*Committee member*

**Jacob Witcop (MS)**      2015 – 2019  
*Chair*

**John Harley (PhD)**      2014 – 2017  
*Co-Chair*

**Bonita Dainowski (PhD)**      2015 – 2018  
*Committee member*

**Anil Damarancha (PhD)**      2015 – present  
*Committee member*

**Lisa Smith (PhD)**      2014 – present

*Committee member*

**Malabika Maulik (PhD)** 2014 – 2018  
*Committee member*

**Swarup Mitra (PhD)** 2013 – 2017  
*Committee member*

**Kendra Sticka (PhD)** 2013 – 2016  
*Co-Chair*

**Theresia Schnurr (MS)** 2013 – 2013  
*Chair*

**Corey Oldman (MS)** 2013 – 2016  
*Committee member*

**Gaelen Dwyer (MS)** 2012 – 2016  
*Committee member*

**Courtney Nichols (PhD)** 2012 – 2016  
*Committee member*

**Jessica St. Laurant (MS)** 2012 – 2015  
*Committee member*

**Jinghui Zheng (MS)** 2011 – 2013  
*Co-Chair*

**Linda Nicholas-Figueroa (PhD)** 2010 – 2017  
*Committee member*

**Arianna Demmerly (PhD)** 2009 – 2017  
*Committee member*

**Mary Hogan (MS)** 2009 – 2012  
*Committee member*

**Sally Gustafson (PhD)** 2008 – 2010  
*Committee member*

**Linda Nicholas-Figueroa (MA)** 2007 – 2010  
*Committee member*

**Njideka Chukwu (MA)** 2007 – 2008  
*Committee member*

**UNDERGRADUATE, HIGH SCHOOL & VISITING STUDENTS**

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<b>Cheyenna Schafer</b> <i>Sled dogs as a model for human health: capstone project</i>	Fall 2020, Spring 2021
<b>Madison Jerome</b> <i>Vitamin D in sled dogs</i>	Summer 2019
<b>Alex Bergholtz</b> <i>Carbohydrate loading in dogs and human athletes</i>	Spring 2019
<b>Shannon Jimmie</b> <i>USDA grant research, "Back to the river: The science behind Alaska's traditional subsistence lifestyle"</i>	Summer 2019 - current
<b>Debbie Kim</b> <i>Monitoring brown adipose tissue and effects of weight gain and exercise on metabolic syndrome</i>	Summer 2018
<b>Laura Kromrey</b> <i>Monitoring Brown Adipose Tissue in Alaskan Sled Dogs: A Pilot Study</i>	Spring 2017, Summer 2017
<b>Emma Jerome</b> <i>The effects of weight gain and exercise on metabolic syndrome</i>	Summer 2017
<b>Ella Kuhn</b> <i>The effects of weight gain and exercise on metabolic syndrome</i>	Summer 2017
<b>Hannah Short</b> <i>Markers of overtraining syndrome in endurance athletes.</i>	Spring 2016, Summer 2016
<b>Joseph Taylor</b> <i>Visiting undergraduate from British Columbia: Exercise and gut health in sled dogs.</i>	Summer 2016
<b>Josephine Walsky</b> <i>BLaST award: Traditional Preparations of Wormwood Tested for Anti-inflammatory Properties</i>	Spring 2016, Summer 2016
<b>Josephine Walsky</b> <i>BLaST award: The effects of wild AK Vaccinium berries on lipid accumulation in 3T3-L1 adipocytes</i>	Spring 2015, Fall 2015
<b>Caroline Streeter</b> <i>The dietary transition from rural Alaska to UAF</i>	Spring 2014
<b>Jennifer Hafferman</b> <i>Colorado State visiting veterinary student: Conditioning and seasonality on vitamin D levels in sled dogs.</i>	Summer 2014
<b>Jessica Lally</b> <i>CHEM 488: The influence of AK blueberries and TNF on GLUT4 expression in 3T3-L1 cells.</i>	Summer 2014
<b>Shannon Jimmie</b> <i>NIDDK STEP-UP Program: inflammatory cytokines in obese dogs.</i>	Summer 2014

**Stacey Krepel** Spring 2014  
*CHEM 488: The effects of wild Alaskan blueberry supplementation on glucose utilization in 3T3-L1 adipocytes.*

**Stacey Krepel** Fall 2013  
*CHEM 488: Adiponectin levels in 3T3-L1 differentiating adipocytes with wild AK blueberry supplementation.*

**Shannon Jimmie** Summer 2013  
*NIDDK STEP-UP Program: Measuring Hb1Ac and adiponectin concentrations in conditioned and sedentary sled dogs.*

**Allysa Komac** Fall 2012  
*Exercise induced Glut4 in mononuclear cells in sled dogs*

**Theresia Schnurr** Fall 2011 & Spring 2012 & Fall 2012  
*Glut4 expression in white blood cells of sled dogs*

**Benjamin Walker** Summer 2012  
*Flow cytometry validation of Glut4 expression in white blood cells*

**Ananya Gupta** Summer 2011  
*Pennsylvania State University – inflammatory cytokines in neuroblastoma cells*

**Breana Murphy** 2010  
*West Valley High School – Antioxidant capacities in Berries*

**Armin Gollogly** 2008  
*University of Pennsylvania undergraduate – neuroblastoma nSMase inhibition*

**Mika Straub** 2006  
*University of Alaska Fairbanks undergraduate – antioxidant status of fruits*

**Chelsea Paskvan** 2004-2005  
*University of Alaska Fairbanks undergraduate – antioxidant capacities of berries*

## SCIENTIFIC PEER REVIEWS

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- Science of the Total Environment (2020)
  - Journal of Applied Physiology (2017)
  - Comparative Exercise Physiology (2016)
  - International Journal Environmental Research and Public Health (2015)
  - Polar Health (2015)
  - Ecotoxicology (2013)
  - Proceedings for International Conference of Circumpolar Health (2013)
  - Journal of Food Chemistry
  - American Journal of Veterinary Research
  - Redox Report
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## CONFERENCES & MEETINGS

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1. A-CHILL Teacher Professional Development Opportunity. Anchorage, Alaska. Attended. February 27.
2. One Health – One Arctic. Attended and presented. Oulu, Finland. February 7-9, 2019
3. 17<sup>th</sup> International Congress of Circumpolar Health. Attended and presented. Copenhagen, Denmark. August 2018.
4. Introduction to Clinical Research Boot Camp. Attended. ITHS, Seattle, WA. June 6-7, 2018.
5. American Chemical Society Northwest Regional Meeting. Attended and session chair. Anchorage, AK. June 2016.
6. Alaska Forum on the environment. Co-Author on Presentation. Anchorage, AK. February 9-13, 2015.
7. Arctic Division AAAS. Fairbanks, AK. Session Chair. September 27<sup>th</sup>, 2014.
8. Higher Education Teaching and Learning. Presented, “Biomembrane Transformation: Instructor led to iPad based student led”. Anchorage, AK. May 31<sup>st</sup> – June 2<sup>nd</sup> 2014.
9. 74<sup>th</sup> American Diabetes Association Conference. Attended. San Francisco, CA. June 13-17, 2014.
10. 73<sup>rd</sup> American Diabetes Association Conference. Attended. Chicago, Illinois. June 21-25, 2013.
11. North Carolina Research Campus. Plants For Human Health Institute. AK Berry Collaboration with Mary Ann Lila. Meeting in Kannapolis, NC December 2012.
12. 2012 International Sled Dog Veterinary Medical Association, Banff BC. **\*Keynote speaker.** 1) Sled dogs as a model for nutritional and physiological adaptation in the circumpolar north and 2) Mercury levels in salmon-fed sled dogs; the potential risks and benefits of subsistence diets.
13. 2012 University of Alaska Biomedical Research Conference, Fairbanks AK. Session Moderator for Natural products and drug discovery
14. 2012 Native Health Research Conferences, Seattle WA. 1) Glucose transporter 4 expression in white blood cells of young and old sled dogs 2) Lipid profiles in subsistence fed sled dogs along the Yukon River
15. 2012 15<sup>th</sup> International Conference of Circumpolar Health, Fairbanks AK. The environment, diet and insulin resistance.
16. 2010 University of Alaska Biomedical Research Conference, Anchorage AK. Lipid profiles in subsistence fed sled dogs
17. 2009 AAAS Arctic Division, Juneau, Alaska. Correlations in antioxidant status with environmental stressors in a sled dog model.
18. 2009 ACUN’ Student Conference on Northern Studies, Whitehorse, Yukon Territory. Sled dogs, Health, and the Yukon River.
19. 2009 University of Alaska Biomedical Research Conference, Fairbanks, AK. Insulin resistance, inflammation and wild Alaskan bog blueberries: Is there a link?
20. 2007 Alaska Dog Mushers Association Symposium, Fairbanks, AK. Effects of latitude and exercise on diurnal and seasonal variations in thyroid hormones and melatonin.

## OUTREACH & PROFESSIONAL SERVICE

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### Council of Athabascan Tribal Government

July 2018

Contributed educational material and activities for their plant conference.

### Denali Summer Speaker Series

July 28, 2017

Guest Speaker – “The Sled dog research model”

<b>32<sup>nd</sup> Alaska Statewide High School Science Symposium</b> <i>Abstract/Paper review</i>	March 2017
<b>Screen-2-Nature</b> <i>Tested health properties of traditional plants in St Mary's and Pitka's Point, AK</i>	August 1-3, 2016
<b>American Chemical Society Northwest Regional Meeting,</b> <i>Biochemistry Session Chair, Anchorage, AK</i>	June 2016
<b>Science Café: Colors of Nature</b> <i>Presentation and activity for Youth age 7-14 with Jennifer Moss</i>	April 2015
<b>American Chemical Society Northwest Regional Meeting 2016</b> <i>Organization Committee</i>	Fall 2014 – 2016
<b>NIDDK STEP-UP</b> <i>Short-Term Research Experience for Underrepresented Persons</i> <i>Alaska Program Director</i>	2013 – present
<b>One Health Seminar</b> <i>The Sled Dog Sentinel</i>	November 2014
<b>Ilisavik College</b> <i>Augmented reality project on mercury and climate change</i>	September 2013
<b>American Chemical Society</b> <i>Nome and Kotzebue high school outreach</i>	2002
<b>Science Potpourri</b> <i>Grade school science education, University of Alaska Fairbanks</i>	2003, 05, 07, 11
<b>Rural Nutrition Services – UAF Interior Aleutian Campus</b> <i>Anti-inflammatory properties of Wild Alaskan Blueberries</i>	2009
<b>Rural Nutrition Services – UAF Interior Aleutian Campus</b> <i>Sled dogs as a model and sentinel for subsistence living.</i>	2007
<b>UNIVERSITY SERVICE</b>	
<b>Department of Chemistry and Biochemistry</b> <i>Search Committee for Assistant Professor of Chemistry</i>	February 7, 2017
<b>Outside Examiner</b> <i>Lexie Tom Oral Comprehensive Exam</i>	January 24, 2017
<b>Outside Examiner</b>	April 29, 2016



*Sarah Traiger's Oral Comprehensive Exam*

**Department of Chemistry and Biochemistry**  
 Graduate Student Coordinator Hiring Committee

September 2013

**IAB Grants Coordinator Hiring Committee**

August 2013

**DNA Core Lab Committee**

April 2013 – present

**Sled Dog Learning, Extension and Discovery (SLED)**

2012 – present

*University outreach and curriculum Committee*  
*Co-Chair*

**Outside Examiner**

November 2012

*Amy Barnsley's Oral Comprehensive Exam*

**Environmental Toxicology (CHEM 455/655)**

Oct. 17 &amp; 23, 2012

*Outside reviewer for midterm presentations*

**University of Alaska Biomedical Research Conference**

2012

*Organize and lead the "Art in Science" competition*

**Responsible Conduct of Research (LAS 601)**

February 2012

*Guest panelist for IACUC discussion*

**INBRE graduate fellowship award**

2012 &amp; 13

*Proposal reviewer*

**Global Change Student Research Grant Competition**

2012

*Proposal reviewer*

**Faculty Search Committee**

2004 – 2005

*Assistant Professor of Biochemistry*

## **COMMUNITY SERVICE**

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**Alaska Dog Mushers Association**

2007 – 2012

*Symposium Organization Committee*

**Alaska Dog Mushers Association**

2009

*Open North American Drug Testing Committee*

**Alaska Dog Mushers Association**

2006 – 2007

*Board Member*

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## PROFESSIONAL MEMBERSHIPS

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- American Chemical Society (2014-16)
- American Diabetes Association (2013,14, 15)
- Phi Kappa Phi Honor Society
- American Society for Circumpolar Health
- International Sled Dog Racing Association
- Alaska Dog Mushers Association

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## HONORS AND AWARDS

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## PUBLICATIONS AND MEDIA FEATURED IN

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**American College of Sports Medicine: Medicine & Science in Sports & Exercise** May 2018  
*Featured manuscript*

**Alaska Dispatch** November 2013  
*Alaska's rugged low-bush cranberries turn out to be antioxidant-rich super food.*

**eLearning** Fall 2013  
*Faculty Spotlight*

**Cornell Alumni Magazine** January/February 2013  
*MUSH!*

**KUAC Morning Edition with Emily Schwing** September 28 2012  
*UAF Scientist takes her sled dog research to Alberta*

**Alaska Magazine** March 2011  
*Arctic Lessons*

**CBC broadcast** 2007  
*Mercury Levels in Subsistence Fed Sled Dogs*

**Discovery News** 2007  
*Sled Dogs Warn of Alaskan Mercury Levels*

**Mushing Magazine** 2003  
*Can Sled Dogs Help Fight Cancer?*

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## AWARDS & RECOGNITION

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**Alaska INBRE** 2019

*Travel award to attend One Health – One Arctic conference*

**University of Alaska Fairbanks College of Natural Science and Mathematics** 2018  
*Outstanding Teaching Award*

**American Society of Circumpolar Health** 2018  
*Travel Award to present at the 17<sup>th</sup> International Congress on Circumpolar Health*

**UNAC Travel Award** 2018  
*Travel Award to present at the 17<sup>th</sup> International Congress on Circumpolar Health*

**Alaska INBRE** 2018  
*Travel Award to attend Institute of Translational Health Science's Introduction to Clinical Research*

**SENCER leadership fellow for the National Center for Science Engagement** 2015  
*18-month term*

**Chancellor's Innovation in Technology and Elearning Program** 2013 – 2014  
*Fellowship*

**American Chemical Society** 2010  
*Travel Award*

**UAF Summer Sessions** 2010  
*Travel Award*

**Alaska EPSCoR** 2004  
*Graduate Research Fellowship Award*

**American Aging Association** 2003  
*Travel Award*

**University of Alaska Graduate School** 2003  
*Travel Grant*

## **ADDITIONAL EDUCATION**

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**Introduction to Clinical Research** June 6 – 7, 2018  
*Institute of Translational Health Sciences*

**iTeach2** May 8 – 12, 2017  
*UAF eLearning & Distance Learning*

**Designing a Flipped Learning Experience Workshop** August 26, 2015  
*University of Alaska Fairbanks*

**Bear Safety Course**

*Firearms instructional services with Joe Nava*

May 31, 2013

**iTeach clinic**

*UAF eLearning & Distance Learning*

May 20 – 24, 2013

**UAF Mobile Technology Showcase Program**

April 22, 2013

**Wilderness First Aid**

April 8-9, 3013

**OIT Training: Introducing the iPad2 for instructional use**

Oct 23, 2012

**OIT Training: Introducing the iPad2**

Oct 16, 2012

**American Chemical Society**

*Teaching Chemistry in the Context of Sustainability, Washington D.C.*

2010

**Techfest**

*Creating Podcasts, University of Alaska Fairbanks*

2010

**Grants 101**

*Workshop, University of Alaska Anchorage*

2007

**Tufts University Friedman School of Nutrition Science and Policy:**

*Fall 2005:*

- 1) General Nutrition (NUTR 202)
- 2) Friedman Seminar Series
- 3) HNRCA Seminar Series

*Fall 2004:*

- 1) Nutrition and Exercise (NUTR 272)
- 2) Qualitative research methods in nutrition (NUTR 233)
- 3) Nutritional Biochemistry (NUTR 250A)
- 4) Nutritional impact on immune systems (NUTR 291I)