Diane Marie O'Brien, Professor

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EDUCATION

PhD	1998	Princeton University	Department of Ecology and Evolutionary Biology
BA	1991	Amherst College	Department of Biology, *Magna cum laude*

EMPLOYMENT HISTORY

2015 –	Professor	UAF	CANHR, IAB, B & W
2009 – 2015	Associate Professor	UAF	CANHR, IAB, B & W
2004 – 2009	Assistant Professor	UAF	IAB, B & W
2003 – 2004	Assistant Professor	Wellesley College	Dept. of Biology
2001 – 2002	Visiting Assistant Professor	Swarthmore College	Dept. of Biology
2000 – 2001 2002– 2003	Visiting Scientist	Carnegie Institution of Washington	Geophysical Laboratory
1998 – 2001 2002– 2003	Postdoctoral Associate	Stanford University	Dept. of Biological Sciences
1996 – 1997	Harold W. Dodds Honorific Graduate Fellow	Princeton University	Dept of Ecol. and Evol Biology
1992 - 1995	NSF Graduate Fellow	Princeton University	Dept of Ecol. and Evol Biology

PUBLICATIONS

ResearcherID profile: http://www.researcherid.com/rid/B-2919-2010
Google Scholar profile: http://scholar.google.com/citations?user=_zycsjkAAAAJ
My NCBI Bibliography: http://bit.ly/1TAVrqq

64. Smith, JS, S Karpovich, GA Breed, **DM O'Brien**. 2018 "Morphological characteristics of harbor seal (*Phoca vitulina*) whiskers and their use in dietary reconstruction using stable isotope ratios" *Canadian Journal of Zoology in press*

63. Bersamin, A, J Nu, **DM O'Brien**, B Izumi, MJ Paschall "A food systems intervention improves diet quality in remote Alaska Native communities: results from the Neqa Elicarvigmun Pilot Study" *Journal of Nutrition Education and Behavior* in revision

62. Philip, J, TK Ryman, SE Hopkins, **DM O'Brien**, A Bersamin, J Pomeroy, KE Thummel, MA Austin, BB Boyer, K Dombrowski 2017 "Bi-cultural dynamics for risk and protective factors for cardiometabolic health in an Alaska Native (Yup'ik) population. *PLoS One* 12(11): e0183451

61. Nash, SH and **DM O'Brien** 2017 "Stable isotope ratios as emerging dietary biomarkers", *in Advances in the Assessment of Dietary Intake*, eds. D Schoeller and M Westerterp-Plantenga. Taylor and Francis/CRC Press

60. **O'Brien, DM**, Thummel, KE, Bulkow, L, Wang, Z, Corbin, B, Klejka, J, Boyer, BB, Hennessey, T, Singleton, R 2017 "Declines in traditional marine food intake and vitamin D levels from the 1960s to present in young Alaska Native women". *Public Health Nutrition 20:1738-17.*

59. Lee, TN*, MM Richter*, CT Williams, Ø Tøien, BM Barnes, **DM O'Brien**, CL Buck 2017 "Stable isotope analysis of CO 2 in breath indicates metabolic fuel shifts in torpid arctic ground squirrels" *Comparative Biochemistry and Physiology A* 209:10-15.

58. Oxtoby, LE*, L Horstmann, SM Budge, **DM O'Brien**, SW Wang, T Schollmeier, MJ Wooller 2017 "Resource partitioning between Pacific walruses and bearded seals in the Alaska Arctic and sub-Arctic" *Oecologia* 184(2): 385-398.

57. Au NT, M Reyes, BB Boyer, SE Hopkins, J Black, **DM O'Brien**, AE Fohner, J Yracheta, T Thornton, MA Austin, W Burke, KE Thummel, AE Rettie 2017 "Dietary and genetic influences on hemostasis in a Yup'ik Alaska Native Population" *PLoS One* 12(4): e173616.

56. Lemas DJ, Klimentidis, YC, Wiener, HC **O'Brien, DM**, Hopkins, SE, Stanhope, KL, Havel, PJ, Allison, DB, Fernandez, JR, Tiwari, HK, Boyer, BB 2016 "Polymorphisms in *stearoyl CoA desaturase* and *sterol regulatory element binding protein* interact with n-3 polyunsaturated fatty acid intake to modify associations with obesity-related anthropometric and metabolic phenotypes in Yup'ik people" *Molecular Nutrition and Food Research* 60:2642-2653

55. Oxtoby, LE, SM Budge, K Iken, **DM O'Brien**, MJ Wooller 2016 "Feeding ecologies of key bivalve and polychaete species in the Bering Sea as elucidated by fatty acid and compound specific stable isotope analyses" *Marine Ecology Progress Series* 557:161-175.

54. Aslibekyan, S., LK Vaughan, HW Wiener, BA Hidalgo, DJ Lemas, **DM O'Brien**, SE Hopkins, KL Stanhope, PJ Havel, KE Thummel, BB Boyer, HK Tiwari 2016 "Linkage and association analysis of circulating vitamin D and parathyroid hormone identifies novel loci and interactions with dietary n-3 polyunsaturated fatty acids in Alaska Native Yup'ik people" *Genes and Nutrition* 11:23

53. Larsen, T, M Ventura, K Maraldo, X Triadó-Margarit, EO Casamayor, YV Wang, N Andersen, **DM O'Brien** 2016 "The dominant detritus-feeding invertebrate in arctic peat soils derives its essential amino acids from gut symbionts" *Journal of Animal Ecology* 85(5):1275-1285.

52. Fohner, AE, Wang, Z, Yracheta, J, **O'Brien DM**, Hopkins, SE, Black, J, Philip, J, Wiener, HW, Tiwari, H, Stapleton, PL, Tsai, JM, Thornton, TA, Boyer, BB, Thummel, KE 2016 "Genetics, diet, and season are associated with serum 25-hydroxylcholecalciferol concentration in a Yup'ik study population from Southwestern Alaska" *Journal of Nutrition* 146(2):318-32.

51. Chi, DL, S Hopkins, **D O'Brien**, L Mancl, E Orr, D Lenaker 2015 "Association between added sugar intake and dental caries in Yup'ik children using a novel hair biomarker" *BMC Oral Health* 15:121

50. **O'Brien, DM**. 2015. "Stable isotope ratios as biomarkers of diet for health research" *Annual Review of Nutrition 35:* 565-594.

49. Beaulieu-Jones, B**, **DM O'Brien**, A Bersamin, BB Boyer, JH Moore, and D Gilbert-Diamond. 2015. "Sex and adiposity modify the protective effect of marine intake on blood pressure in Alaska Yup'ik people" *Journal of Nutrition* 145: 931-938.

48. Vaughan, LK, Wiener, HW, Aslibekyan, S, Allison, DB, Havel, PJ, Stanhope, K, **O'Brien, DM**, Hopkins, SE, Lemas, DJ, Boyer, BB, Tiwari, HK. 2015. "Linkage and association analysis of obesity traits reveals novel loci and interactions with dietary n-3 fatty acids in an Alaska native population" *Metabolism* 64: 689-697.

47. Ryman, T.*, J Philip, B. Kavanaugh, **DM O'Brien**, K Thummel, SE Hopkins, BB Boyer, M. Austin. 2015. "Characterizing Health-Related Dietary Patterns among Yup'ik Alaska Native People: Reproducibility and

Reliability" *British Journal of Nutrition* 113: 634-643.

46. Savory, G*, Hunter, C, Wooller, MJ and **DM O'Brien**. 2014. "Anthropogenic food use and diet overlap by red and arctic foxes in Prudhoe Bay, AK" *Canadian Journal of Zoology* 92:657-663.

45. **O'Brien, DM**, AR Kristal, SH Nash*, SE Hopkins, BR Luick, KL Stanhope, PJ Havel, BB Boyer 2014. "A stable isotope biomarker of marine food intake captures associations between n-3 fatty acid intake and chronic disease risk in a Yup'ik study population, and detects new associations with blood pressure and adiponectin" *Journal of Nutrition* 144:706-713.

44. Nash, SH*, Kristal, AR, Bersamin, A, Choy, K, Hopkins, SE, Stanhope, KL, Havel, PJ, Boyer, BB, and **DM O'Brien** 2014. "Isotopic estimates of sugar intake are related to chronic disease risk factors but not obesity in an Alaska Native (Yup'ik) study population" *European Journal of Clinical Nutrition* 68:91-96.

43. Nash, SH*, Kristal, AR, Hopkins, SE, Boyer, BB, and **DM O'Brien** 2014. "Stable isotope models of sugar intake using hair, red blood cells and plasma, but not fasting plasma glucose, predict sugar intake in a Yup'ik study population" *Journal of Nutrition* 144:75-80.

42. Aslibekyan, S, Wiener, HW, Havel, PJ, Stanhope, KL, **O'Brien, DM**, Hopkins, SE, Absher, DM, Tiwari, HK, Boyer, BB 2014. "DNA methylation patterns are associated with n-3 fatty acid intake in Yup'ik people" *Journal of Nutrition* 144: 425-430.

41. Klimentidis, YC, DJ Lemas*, HH Wiener, **DM O'Brien**, PJ Havel, KL Stanhope, S Hopkins, HK Tiwari, and BB Boyer 2014. "*CDKAL1* and *HHEX* are associated with type-2 diabetes-related traits among Yup'ik people." *Journal of Diabetes* 6:251-259.

40. Ryman, T*, J Austin, J Phillip, S Hopkins, **DM O'Brien**, K Thummel, Boyer, B. 2014. "Using exploratory factor analysis of FFQ data to identify dietary patterns among Yup'ik people." *Public Health Nutrition* 17:510-518.

39. Choy K†, SH Nash*, AR Kristal, S Hopkins BB Boyer and **DM O'Brien** 2013. "The carbon isotope ratio of alanine in red blood cells is a new candidate biomarker of sugar-sweetened beverage intake" *Journal of Nutrition* 143:878-884.

38. Nash, SH*, AR Kristal, A Bersamin, SH Hopkins, BB Boyer, and **DM O'Brien**. 2013. "Carbon and nitrogen stable isotope ratios predict intake of sweeteners in a Yup'ik study population" *Journal of Nutrition* 143: 161-165.

37. Larsen, T†, M Ventura, N Andersen, **DM O'Brien**, U Piatsowski, MD McCarthy 2013. "Amino acid stable isotope fingerprints trace primary production sources through aquatic and terrestrial food webs" *PLOS One* 8(9): e73441 doi: 10.1371/journal.pone.0073441.

36. Aslibekyan, S, Wiener, HW, Havel, PJ, Stanhope, KL, **O'Brien, DM**, Klimentidis, JC, Lemas, DJ*, Boyer, BB, Tiwari, HK 2013. "Evidence for novel genetic loci associated with metabolic traits in Yup'ik people" *American Journal of Human Biology* 25(5): 673-680.

35. Lemas DJ*, Klimentidis, YC, Wiener, HH, **O'Brien, DM**, Hopkins, S, Allison, DB, Fernandez, JR, Tiwari, HK, Boyer, BB. 2013. "Obesity polymorphisms identified in genome-wide association studies interact with n-3 polyunsaturated fatty acid intake and modify the genetic association with adiposity phenotypes in Yup'ik people" *Genes and Nutrition* 8(5): 495-505.

34. Nash, SH*, , Bersamin, A, Kristal, AR, Hopkins, SA, Church, RS**, Pasker, RL*, Luick, BR, Mohatt, GV, Boyer, BB, and **O'Brien, DM**. 2012. "Stable nitrogen and carbon isotope ratios indicate traditional marine

and market food intake in an indigenous circumpolar population" *Journal of Nutrition* 142: 84-90.

33. Lee, TN*, BM Barnes, CL Buck, and **DM O'Brien**. 2012. "A test of alternative models for increased tissue nitrogen isotope ratios during fasting in hibernating arctic ground squirrels." *Journal of Experimental Biology* 215: 3354-3361.

32. Van Hemert, C*, C Handel, and **DM O'Brien**. 2012. "Stable isotopes identify dietary changes associated with beak deformities in black-capped chickadees (*Poecile atricapillus*)" *The Auk* 129(3): 460-466.

31. Larsen, T. †, Wooller, M.J., Fogel, M.L., and **D.M. O'Brien**. 2012. "Can amino acid carbon isotope ratios distinguish primary producers in a mangrove ecosystem?" *Rapid Communications in Mass Spectrometry* 26: 1541-1548.

30. Lemas, DJ*, Wiener, HW, **O'Brien, DM**, Hopkins, S, Stanhope, KL, Havel, PJ, Allison, DB, Fernandez, JR, Tiwari, HK, and BB Boyer. 2012. "Genetic polymorphisms in carnitine palmitoyltransferase 1A gene are associated with variation in body composition and fasting lipid traits in Yup'ik Eskimos." *Journal of Lipid Research* 53: 175-184.

29. Lee, TN*, Fridinger, RW*, Barnes, BM, Buck, CL, and **DM O'Brien**. 2011. "Estimating lean mass over a wide range of body composition: A calibration of deuterium dilution in the arctic ground squirrel." *Rapid Communications in Mass Spectrometry* 25: 3491-3496.

28. Larsen, T†, M Ventura, **DM O'Brien**, J Magid, BA Lomstein, and J Larsen. 2011. "Contrasting effects of nitrogen and amino acid limitation on nutrient turnover in three species of Collembola" *Soil Biology and Biochemistry* 43: 749-759.

27. Makhoul, Z†., AR Kristal, R Gulati, B Luick, A Bersamin, **DM O'Brien**, SE Hopkins, CB Stephensen, KL Stanhope, PJ Havel, and BB Boyer. 2011. "Associations of obesity with triglycerides and C-reactive protein are attenuated in adults with high red blood cell eicosapentaenoic and docosahexaenoic acids" *European Journal of Clinical Nutrition* 65: 808-817.

26. Oppel, S*, AN Powell, **DM O'Brien.** 2010. "King eiders use an income strategy for egg production – a case study for incorporating individual dietary variation in nutrient allocation research" *Oecologia* 164(1): 1-12.

25. Oppel, S*, R Federer*, **DM O'Brien**, A.N. Powell, T. Hollmen. 2010. "Effects of lipid extraction on stable isotope ratios in avian egg yolk – is arithmetic correction a reliable alternative?" *The Auk* 127(1): 72-78.

24. Carsten-Conner, LD*, DR Papaj, and **DM O'Brien**. 2010. "Resource allocation to testes in walnut flies and implications for reproductive strategy" *Journal of Insect Physiology* 56(11) 1523-1529.

23. Nash, SH*, Kristal, AR, Boyer, BB, King, IB, Metzgar, JS, and **DM O'Brien**. 2009. "Relation between stable isotope ratios in human red blood cells and hair: implications for using the nitrogen isotope ratio of hair as a biomarker of eicosapentaenoic acid and docosahexaenoic acid." *The American Journal of Clinical Nutrition* 90:1642-1647. PMC 777473

22. **O'Brien, DM**, AR Kristal, MA Jeannet**, MJ Wilkinson**, A Bersamin, BR Luick. 2009. "Red blood cell $\delta^{15}N$: a novel biomarker of dietary eicosapentaenoic acid and docosahexaenoic acid intake" *The American Journal of Clinical Nutrition* 89(3) 913-919. PMC 2646803

21. Larsen T†, DL Taylor, MB Leigh, **DM O'Brien**. 2009. "Stable isotope fingerprinting: a method for identifying plant, fungal or bacterial origins of amino acids" *Ecology* 90(12):3526-3535.

20. Sears J*, SA Hatch, and **DM O'Brien**. 2009. "Disentangling effects of growth and nutritional status on seabird stable isotope ratios." *Oecologia* 159(1):41-48.

19. Wang, Y*, **DM O'Brien**, J Jenson, D Francis, and MJ Wooller. 2009. "The influence of diet and water on the stable oxygen and hydrogen isotope composition of chironomids (Chironomidae: Diptera), with paleoecological implications" *Oecologia* 160(2): 225-233.

18. Oppel, S*, AN Powell, and **DM.O'Brien**. 2009. "Using eggshell membranes as a non-invasive tool for investigating nutrient allocation to egg production." *Journal of Ornithology* 150(1): 109-115.

17. Wang, Y.*, D. Francis, **D.M. O'Brien**, and M.J. Wooller. 2008. "A protocol for preparing subfossil Chironomid head capsules (Diptera: Chironomidae) for stable isotope analysis in paleoclimate reconstruction." *Journal of Paleolimnology* 40(3) 771-781.

16. Kaufman, M.R.*, R.R. Gradinger, B.A. Bluhm, and **D.M. O'Brien**. *2008*. "Using stable isotopes to assess carbon and nitrogen turnover in the Arctic sympagic amphipod *Onisimus litoralis*." *Oecologi*a 158(1) 11-22.

15. **O'Brien, DM**, KJ Min, T Larsen†, and M Tatar. 2008. "Use of stable isotopes to examine how diet restriction extends *Drosophila* life span." *Current Biology* 18(4) R155-R156.

14. Wilkinson, M.J.**, Y. Yai*, and **D.M. O'Brien**. 2007. "Age-related variation in red blood cell stable isotope ratios ($\delta^{13}C$ and $\delta^{15}N$) from two Yup'ik villages in Southwest Alaska: a pilot study." *The International Journal of Circumpolar Health,* 66(1):31-41.

13. **O'Brien, D.M.** and M.J. Wooller. 2007. "Tracking human migration using stable oxygen and hydrogen isotope analyses of hair and urine." *Rapid Communications in Mass Spectrometry* 21: 2422-2430.

12. Min, K.J., M.F. Hogan**, M. Tatar, **D.M. O'Brien**. 2006. "Resource allocation to reproduction and soma in *Drosophila*: stable isotope analysis of carbon from dietary sugar." *Journal of Insect Physiology* 52(7):763-770.

11. Scott, J.H., **D.M. O'Brien**, D. Emerson, H. Sun, G.D. McDonald, A. Salgado, M.L. Fogel. 2006. "Examination of the Carbon Isotopic Effects Associated with Amino Acid Biosynthesis in Microbes." *Astrobiology* 6(6): 867-880.

10. **O'Brien, DM**, CL Boggs, and ML Fogel. 2005. "The amino acids used in reproduction by butterflies: a comparative study of dietary sources using compound specific stable isotope analysis" *Physiological and Biochemical Zoology* 78(5): 819-827.

9. Suarez, R.W., C.A. Darveau, K. Welch, Jr., **D.M. O'Brien**, D.W. Roubik, P.W. Hochachka. 2005. "Energy metabolism in orchid bee flight muscles: Carbohydrate fuels all." *Journal of Experimental Biology* 208: 3573-3579.

8. **O'Brien, D.M**, C.L. Boggs and M.L. Fogel. 2004. "Making eggs from nectar: the role of life history and dietary carbon turnover in butterfly reproductive resource allocation." *Oikos* 105: 279-291.

7. Fisher, K, **D.M. O'Brien**, and C.L. Boggs. 2004. "Allocation of larval and adult resources to reproduction in a fruit-feeding butterfly." *Functional Ecology* 18:656-663.

6. **O'Brien, DM**, CL Boggs and ML Fogel. 2003. "Pollen feeding in *Heliconius charitonius*: isotopic evidence for essential amino acid transfer from pollen to eggs." *Proceedings of the Royal Society of London: B* 270:2631-2636.

5. **O'Brien, DM**, Fogel, ML, and CL Boggs. 2002. "Renewable and non – renewable resources: amino acid turnover and allocation to reproduction in Lepidoptera." *Proceedings of the National Academy of the Sciences USA* 99(7): 4413-4418.

4. **O'Brien, D.M**. and R.K. Suarez. 2001. "Fuel use in hawkmoth (*Amphion floridensis*) flight muscle: enzyme

activities and flux rates." *Journal of Experimental Zoology* 290:108-114.

3. **O'Brien, DM**, DP Schrag, and C Martínez del Rio 2000. "Allocation to reproduction in a hawkmoth: a quantitative analysis using stable carbon isotopes." *Ecology* 81:2822-2831.

2. **O'Brien, D.M**. 1999. "Fuel use in flight and its dependence on nectar feeding in the hawkmoth *Amphion floridensis*." *Journal of Experimental Biology* 202:441-451.

1. Gannes, LZ, **DM O'Brien**, C Martínez del Rio. 1997. "Stable isotopes in animal ecology: Assumptions, caveats, and a call for more laboratory experiments." *Ecology* 78:1271-1276.

GRANTS AND AWARDS

Pending NSF pre-proposal: "Does energy source or colonization mode affect island soil food web assembly?: Post-eruption arthropod, nematode, and microbial succession on Kasatochi Volcano" co-PI, with L Zeglin (PI, KSU), D. Sikes (co-PI) and M. Herman (co-PI, KSU). Submitted Jan 2017.

Pending NIH NARCH "ANTHC NARCH X", PI, E. Ferucci. Project: "Stable isotope biomarkers of diet amoung urban Alaska Native people", Project academic mentor and UAF PI, with K. Koller and S. Nash (project co-PIs, Alaska Native Tribal Health Consortium). $14,829/5 years.

Pending NIH R01: "Genetic and environmental determinants of vitamin D among Alaska Native people" Role: Co-I, with K. Thummel and B. Boyer (multiple PIs). Submitted June 2017. $3,728,930/5 years.

Pending NIH R01: "Reducing Sugared Fruit Drinks in Alaska Native Children", Role: Co-I and Subaward PI, with D. Chi (PI, UW), S. Hopkins and A. Bersamin (Co-I's, UAF). Subaward budget: $1,664,408/5 years. Re-submitted May 2017

Pending NIH R01: "Reducing Sugared Fruit Drinks in Alaska Native Children", Role: Co-I and Subaward PI, with D. Chi (PI, UW), S. Hopkins and A. Bersamin (Co-I's, UAF). Subaward budget: $1,664,408/5 years. Submitted May 2016. Score: 36 (24th percentile).

2017-2021 NIH R01: "Protecting the Health of Future Generations: Assessing and Preventing Exposures to Endocrine-Disrupting Flame Retardant Chemicals and PCBs in Two Alaska Native Arctic Communities on St. Lawrence Island" Role: Co-I and Subaward PI, with P Miller (Alaska Community Action on Toxics), PI. Subaward budget: $95,500/1 year

2017-2018 NIH Supplement to R01: "Investigation of biomarkers of sugars intake – a controlled feeding study" Supplement title: "An Investigation of Breath Carbon Isotope Ratios as Biomarkers for Sugars Intake." "Role: Co-I and UAF Subaward PI, with N Tasevska (PI), Arizona State University. UAF budget: $42,87/ 1 year

2016-2021 NIH P01: "Pharmacogenetics Program Project Grant" Role: UAF Co-I, with K Thummel (PI, UW) and B Boyer (UAF Subaward PI). Subaward budget: $1,000,356/5 years.

2016-2020 NIH R01: "Epigenome modification by a dietary pattern rich in polyunsaturated fatty acids" Role: Co-I, with B. Boyer (co-PI, UAF), H. Tiwari, (co-PI, UAB), and D. Absher (co-PI, Hudson Alpha). $2,568,122/4 years.

2016 - 2020 NIH R01: "Molecular Stable Isotope Profiles of Dietary Exposure" Role: PI, with P Shaw (Penn State) and M. Wooller (UAF), co-I's. Budget: $1,980,341/4 years. Submitted Sept 2015

2016-2018 NSF MRI: "Acquisition of a shared multi-collector inductively coupled mass spectrometer (MS-ICPMS) to benefit teaching, federal, state, and national research needs." Senior Personnel, with MJ Wooller (PI) and A Aguilera (co-PI). $845,289/3 years.

2016-2019 Coastal Marine Institute (BOEM): "Identifying sources of organic matter to benthic organisms in the Beaufort and Chuckchi outer continental shelves" Role: Co-Investigator, with M Wooller (PI) and K Iken (Co-I). $246,082/3 years.

2015-2020 NIH R01: "Investigation of biomarkers of sugars intake – a controlled feeding study" Role: Co-I and UAF Subaward PI, with N Tasevska (PI), Arizona State University. Subaward budget: $219/155/4 years

2015-2016 CANHR COBRE III Pilot Grant Program: "Validating the carbon isotope ratio of breath CO_2 as a biomarker of recent added sugar intake" Role: PI, with D Schoeller (co-I). $75,000/2 years

2014-2016 NIH R21 CA182674-01: "Validating Multiple Stable Isotope Measures of Diet in the NPAAS Feeding Study". Role: PI, with Johanna Lampe (co-I) at the Fred Hutchinson Cancer Research Center. $378,511/2 years

2010-2015 NIH 1U01GM092676: "Pharmacogenetics in Underserved and Rural Populations", Co-I, with B. Boyer (UAF PI) and Scarlett Hopkins (UAF co-I). UAF budget: $1,021,730/5 years

2013-2014 University of Washington Royalty Research Fund: "Improving the oral health of Alaska Native (Yup'ik) children and adolescents: first steps in developing a community-centered intervention to reduce sugar-sweetened beverage intake" Role: Co-I and UAF subaward PI, with D. Chi (PI, UW), A. Bersamin (UAF co-I), and S. Hopkins (UAF co-I) $30,000/1 year

2011 Alaska EPSCOR Integrative Faculty Development Award: "Terrestrial arthropod ecosystem assembly on Kasatochi volcano: Population genetics and food web dynamics" Co-PI, with D. Sikes (PI) $30,000/6 months

2008 NSF MRI: "Acquisition of a Stable Isotope Ratio Mass Spectrometer for analyzing specific organic compounds to promote a vigorous isotopic research and teaching program" Co-PI, with M. Wooller (PI), K. Walter, T. Sutton, A. Springer, R. Gradinger, B. Bluhm, P. McRoy, K. Iken, S. Fowell (co-PIs). $237,452 /2 years

2007 - 2010 NSF OPP: "Collaborative research: IPY: Extremes of hibernation physiology: Patterns of expression, regulation, and limits". UAF PI, with Loren Buck (UAA PI) and Brian Barnes (UAF co-PI). UAF budget: $428,750/3 years

2007 - 2012 NIH COBRE: "Investigating Obesity and Chronic Disease-Related Risk Factors of Alaska Natives" (COBRE PI: Gerald Mohatt). Project PI: "Developing a novel set of diet pattern biomarkers, based on stable isotope ratios". Project budget: $1,131,588/5 years

2006 - 2007 NSF IOB-0552014: "Stable Isotope Fingerprinting: a novel approach for identifying amino acid biosynthetic sources, using stable isotope variation among amino acids" (PI). $92,766/1 year

2003 Wellesley College Faculty Research Award: $3000/1 year

1999 – 2002 NSF IBN-9983044: ""Nutrient allocation to flight and reproduction in the Lepidoptera". Role: named postdoc and author*, with Carol Boggs (PI) $226,510/3 years
**Stanford University did not permit PI or co-I status for postdocs at that time.*

1997 - 1998 Princeton University Harold W. Dodds Honorific Graduate Fellowship

1995 - 1998 National Science Foundation Dissertation Improvement Grant

1992 - 1995 National Science Foundation Graduate Fellowship

TEACHING

Course	Level	Institution	Years taught
Animal Stable Isotope Ecology	Graduate	UAF	S18, S14, S12, S11, S09, S07, S06
Fundamentals of Biology I	Undergrad, 1st year	UAF	F16, F15, F14, F13, F11, F09, S08
Fundamentals of Biology II	Undergrad, 1st year	UAF	F06
Animal Physiology	Undergrad, 3rd year	UAF	F04, F05
Animal Ecological Physiol.	Undergrad, 3rd year	Wellesley College	2003, 2004
Stable Isotope Ecology	Undergrad, 4th year	Wellesley College	2003
Human Biology	Undergrad, 1st year	Wellesley College	2003
Introductory Biology	Undergrad, 1st year	Swarthmore College	2002
Diet and Metabolism	Undergrad, 4th year	Swarthmore College	2002
Animal Physiology	Undergrad, 3rd year	Swarthmore College	2001

MENTORING

Postdoctoral scholars

Dr. Hee Young Yun	2015-2018	Project: "Validating serum amino acid carbon isotope ratios as biomarkers of meat and sugar intake in the NPAAS Feeding Study"
Dr. Kyungcheol Choy	2011-2013	Project: "Evaluating amino acid carbon isotope ratios as dietary biomarkers in human populations" Currently: Postdoc with Dr. Matthew Wooller, UAF
Dr. Thomas Larsen	2007-2009	Project: "Evaluating amino acid carbon isotope ratios as markers for biosynthetic source: "stable isotope fingerprinting" Currently: Postdoc, Leibnitz-Laboratory for Radiometric Dating and Stable Isotope Research, Christian-Albrechts-Universitat zu Kiel

PhD student advisees

Jessica J. Johnson	In progress	Project: "Molecular stable isotope profiles of dietary exposure in a 14-wek controlled feeding study
Dr. Sarah Nash	PhD 2013	Project: "Developing stable isotope biomarkers of Yup'ik traditional and market foods to detect associations with chronic disease risk" Currently: Director of Cancer Surveillance at the Alaska Native Tribal Health Consortium
Dr. Trixie Lee* *(with C.L. Buck)*	PhD 2012	Project: "Expression and mechanisms of hibernation in the arctic: the Alaska marmot and the arctic ground squirrel" Currently: Assistant Professor, Harding University
Dr. Caroline van Hemert* *(with T. O'Hara)*	PhD 2012	Project: "Epizootic of beak deformities in Alaska: investigation of an emerging avian disease" Currently: Research Wildlife Biologist, USGS

MS student advisees

Justin Smith	MS 2017	Project: "Assessing seasonal diet use by harbor seals using stable isotope ratios of vibrissae"
Garrett Savory* *(with C. Hunter)*	MS 2013	Project: "Anthropogenic food use by red and arctic foxes and the effects of an oil field and sea ice use on arctic fox survival on the arctic coastal plain of Alaska."
Justine Sears	MS 2007	Project: "Rhinoceros auklet developmental responses to moderate food restriction"

Undergraduate research advisees		Currently:
Sammer Dia	Current	BS in progress
Diane Murph	Current	BS in progress
Kjersten Williams	Current	BS in progress
Sarah Hartmann	Summer 2016	BS in progress
Katie Roseberry	Spring 2016	BS in progress
Brittany Corbin	BS 2017, UAF	Applicant to UAA Masters in Education program
April Mustard	BS 2015, UAF	UAA Nursing Program
Rebecca (Church) Wilbur	BS 2011, UAF	Doctor of Optometry at Chief Andrew Isaac Health Center
M. Alyssa (Jeannet) Terra	BS 2008, UAF	DO (Doctor of Osteopathy) candidate, Pacific Northwest University of Health Sciences
Michael Wilkinson	BS 2007, UAF	MD, Drexel University, currently an Internal Medicine Resident at the University of Chicago
Kelsey (Alexander) Gregg	BS 2006, UAF	PhD candidate, Department of Microbial Pathogenesis, University of Maryland
Meghan Hogan	BA 2005, Wellesley	PhD candidate, Salk Institute for Biological Studies, University of California San Diego
Madeleine deBlois	BA 2004, Wellesley	PhD candidate, Department of Society, Human Development, and Health, Harvard School of Public Health
Tsiri Agbenyega	BA 2003, Swarthmore	MBA candidate, FUQUA School of Business, Duke University

GRADUATE STUDENT COMMITTEES

Student	Degree	Advisor
Robin Andrews	PhD in Biological Sciences, in progress	R. Ruess
Audrey Rowe	MS in Marine Biology, in progress	M. Wooller
Roxanne Beltran	PhD in Biological Sciences, in progress	G. Breed
Tim Spivey	MS Wildlife Biology and Conservation, 2017 Seasonal variation in the health of high-latitude urban wintering mallards (*Anas platyrhynchos*)	M. Lindberg
Laura Oxtoby	PhD in Marine Biology , 2016 "Carbon sources and trophic connectivity in seafloor food webs in the Alaska arctic and sub-arctic"	M. Wooller
Brian Robinson	MS Wildlife Biology and Conservation, 2016 "Feeding ecology of black oystercatcher (*Haematopus bachmani*) chicks"	A. Powell

Heather Craig	MS Wildlife Biology and Conservation 2015 "Breeding ecology of Smith's longspurs (*Calcarius pictus*) in the Brooks Range, Alaska"	A. Powell
Chris Barger	MS Wildlife Biology and Conservation, 2013 "Resource Partitioning in Seabirds"	S. Kitaysky
Neil Lehner	MS Wildlife Biology and Conservation 2012 "Arctic fox winter movement and diet in relation to industrial development on Alaska's North Slope"	B. Pearson/K. Kielland
Dominick Lemas	PhD Biochemistry 2012 "Gene-diet interactions and obesity among Yup'ik people living in Southwest Alaska."	B. Boyer
Katrina Knott	PhD Biological Sciences 2012 "Contaminant exposure and biological responses in Southern Beaufort Sea polar bears"	T. O'Hara
Steffen Oppel	PhD Biological Sciences 2008 "King Eider migration and seasonal interactions at the individual level"	A. Powell
Laura Carsten-Conner	PhD Ecology and Evolutionary Biology, University of Arizona 2007 "The role of context in investment into reproductive tissue and implications for mating"	D. Papaj
Yiming Wang	PhD Geology and Geophysics 2008 "The development and application of stable oxygen and hydrogen isotope analyses of Chironomideae (Diptera) as indicators of past environmental change"	M. Wooller
Matthew Urschel	MS Biology 2008 "Molecular basis of mitochondrial form and function in the hearts of Antarctic notothenioids that vary in the expression of hemoglobin and myoglobin"	K. O'Brien
Mette Nielson-Kaufmann	MS Marine Biology 2006 "Estimating ^{13}C and ^{15}N turnover rates in the arctic amphipod *Onisimus litoralis*: potential applications for analyzing the transfer of sea ice production to under-ice fauna."	B. Bluhm

CONFERENCES*

2017	*Alaska Native Health Conference*	Anchorage, AK	1 invited talk
2017	*Experimental Biology: The American Society of Nutrition*	Chicago, IL	1 abstract
2016	*Experimental Biology: The American Society of Nutrition*	San Diego, CA	1 abstract
2015	*NIH IDeA Western Regional Conference*	Cour d'Alene, ID	1 invited talk
2015	*Experimental Biology: The American Society of Nutrition*	Boston, MA	1 abstract
2012	*15th International Congress on Circumpolar Health*	Fairbanks, AK	4 abstracts
2012	*Experimental Biology: The American Society of Nutrition*	San Diego, CA	4 abstracts
2010	*The 7th International Conference on Applications of Stable Isotope Techniques to Ecological Studies (ISOECOL7)*	Fairbanks, AK (**Organizer**)	3 abstracts
2009	*The Alaska Native Health Conference*	Anchorage, AK	2 abstracts
2008	*The 6th International Conference on Applications of Stable Isotope Techniques to Ecological Studies (ISOECOL6)*	Honolulu, HI	6 abstracts
2007	*University of Alaska Biomedical Research Conference*	Fairbanks, AK	2 abstracts
2006	*American Physiological Society*	Virginia Beach, VA	1 invited talk
2006	*NIH National IDeA Symposium of Biological Research Excellence*	Washington, DC	1 abstract
2006	*5th International Conference on Application of Stable Isotope*	Belfast, N Ireland	2 abstracts

	Techniques to Ecological Studies (ISOECOL5)		
2005	*The Society for the Study of Evolution*	Fairbanks, AK	2 abstracts
2004	*3rd International Conference on Comparative Biochemistry and Physiology*	Ithala, South Africa	1 abstract
2004	*4th International Conference on Application of Stable Isotope Techniques to Ecological Studies (ISOECOL4)*	Wellington, New Zealand	2 abstracts
2002	*The Society for Integrative and Comparative Biology*	Anaheim, CA	1 abstract
2002	*3rd International Conference on Application of Stable Isotope Techniques to Ecological Studies (ISOECOL3)*	Flagstaff, AZ	
2000	*The Society for Integrative and Comparative Biology*	Atlanta, GA	1 abstract
2000	*2nd International Conference on Application of Stable Isotope Techniques to Ecological Studies (ISOECOL2)*	Braunschweig, Germany	1 abstract
1999	*The Society for Integrative and Comparative Biology*	Denver, CO	1 abstract
1998	*The Ecological Society of America*	Baltimore, MD	1 abstract
1998	*The Society for Integrative and Comparative Biology*	Boston, MA	1 abstract
1998	*3rd International Butterfly Ecology and Evolution Symposium*	Crested Butte, CO	1 abstract

**Includes only conferences I attended.*

INVITED SEMINARS

2017 National Institutes of Health, Nutrition Research Task Force Meeting
2015 University of Wisconsin, Madison, Department of Nutritional Sciences
2010 Fred Hutchinson Cancer Research Center, Seattle, WA
2009 NIH-NIDDK, Obesity and Diabetes Clinical Research Section, Phoenix, AZ
2005 Brown University, Ecology and Evolutionary Biology
2003 University of Arkansas, Dept. of Biology
2003 University of Montana, Dept of Biology
2003 University of British Columbia, Dept of Zoology
2003 University of New Mexico, Dept of Biology
2002 Wellesley College, Dept of Biology
2002 University of Alaska, Fairbanks, Institute of Arctic Biology
2002 University of California, Riverside, Ecology and Evolutionary Biology
2001 Carnegie Institution of Washington, Geophysical Laboratory
2001 Swarthmore College, Department of Biology
2001 University of Alaska Anchorage, Dept of Biology
2001 University of Cincinnati, Dept of Biology
2000 State University of New York, Stony Brook, Department of Ecology and Evolutionary Biology
1999 Macalester College, Dept of Biology
1999 University of California, Irvine, Dept of Ecology and Evolutionary Biology

SERVICE

2017 Member, Nutrition Thought Leaders Panel, NIH Strategic Plan for Nutrition
2017 Member, ZRG1-EMNR-50G Special Emphasis Panel (NIH Study Section)
2017 Strategic Pathways III: Social and Natural Sciences Review panel
2016 – present Chair, Biology and Wildlife Unit Peer Review Committee
2016 – present Deputy Director, Institute of Arctic Biology (IAB)
2014 – present Deputy Director, Center for Alaska Native Health Research (CANHR)
2015 Graduate student poster judge, *Experimental Biology* (American Society of Nutrition)
2014 Graduate Admissions Policy Review Committee, Chair
2013 – 2014 Committee to review the Biology and Wildlife Fundamentals of Biology series

2013 – 2014	Search Committee for CANHR Program Coordinator
2012 – 2015	Faculty mentor for Dr. Trey Coker
2012 – present	Faculty mentor for Dr. Andrej Podlutsky
2010 – 2012	CANHR: Search Committee Chair, Joint Health Science positions
2011	IAB Summer Graduate Research Fellowships Review Committee
2011- present	Faculty mentor to Dr. Andrea Bersamin
2010 – 2011	CANHR: Interim Core Leader, Biostatistics and Epidemiology Core Resource
2009 – present	Biology and Wildlife Unit Peer Committtee
2009 - 2010	Lead Organizer, the 7th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Fairbanks, AK August 8-13, 2010
2008 - 2012	Center for Global Change Scientific Steering Committee
2008 - 2009	CANHR: Biostatistician Search Committee, Chair
2007 - 2008	CANHR: Nutritionist Search Committee
2007 – 2014	Faculty mentor to Dr. Karsten Hueffer
2007	Alaska EPSCOR Summer Research Fellowship Award Committee
2006 – 2008	Arctic Health Research Building remodel, Users Committee
2006 - 2008	B&W: Teaching Advisory Committee
2006	Scholander Award Judge, American Physiological Society Comparative Physiology 2006: Integrating Diversity (Virginia Beach, VA)
2006	IAB Summer Graduate Research Fellowships Review Committee
2006	Alaska State High School Science Symposium: Student paper reviewer
2004 - 2006	IAB/B&W: Infectious Disease Microbiologist search committee
2004 - 2006	IAB/B&W: General Microbiologist search committee
2005	National Science Foundation panelist: Doctoral Dissertation Improvement Grants
2005 - 2006	Alaska EPSCOR Equipment Grant Committee
2003 - 2004	Wellesley College: Budget Advisory Committee
2003 - 2004	Wellesley College: Howard Hughes Medical Institute Curriculum Development Committee

REVIEWING

Auk, American Journal of Clinical Nutrition, American Journal of Human Biology, Canadian Journal of Fish and Aquatic Sciences, Earth and Planetary Science Letters, Ecology, Entomologia Experimentalis et Applicata, European Journal of Nutrition, Food Control, Functional Ecology, Isotopes in Environmental Health Studies, Journal of Comparative Physiology B, Journal of Experimental Biology, Journal of Human Biology, Journal of Insect Physiology, Journal of Nutrition, Minerva-Weizmann Foundation (proposals), National Science Foundation (Proposals), *Oecologia, Physiological and Biochemical Zoology, Proceedings of the Royal Society of London B, Rapid Communications in Mass Spectrometry, Soil Biology and Biochemistry,* UAF Center for Global Change.