

DIANE MARIE O'BRIEN, PROFESSOR

Center for Alaska Native Health Research (CANHR)
Institute of Arctic Biology (IAB)
Dept. of Biology and Wildlife (B & W)
University of Alaska Fairbanks (UAF)
Fairbanks, AK 99775-7000

230 Arctic Health Research Building
phone: (907) 474-5762
email: dmobrien@alaska.edu
website: http://faculty.iab.uaf.edu/diane_obrien

EDUCATION

| | | | |
|-----|------|----------------------|------------------------------------------------|
| PhD | 1998 | Princeton University | Department of Ecology and Evolutionary Biology |
| BA | 1991 | Amherst College | Department of Biology, <i>Magna cum laude</i> |

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/iTAVrqq>

61. 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* *accepted*
60. Lee, TN*, MM Richter*, CT Williams, Ø Tøien, BM Barnes, **DM O'Brien**, CL Buck 2017 "Stable isotope analysis of CO₂ in breath indicates metabolic fuel shifts in torpid arctic ground squirrels" *Comparative Biochemistry and Physiology A* 209:10-15.
59. 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.
58. 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
57. **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* [July 2016 epub ahead of print].

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 "Diverse feeding ecologies in the Bering Sea benthos: evidence from fatty acid profiles and compound-specific stable isotope analysis of fatty acid biomarkers" *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-hydroxycholecalciferol 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](https://doi.org/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 $\delta^{15}\text{N}$: 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*." *Oecologia* 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 ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$) 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 RoI: “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: \$95,500/2 years. Submitted Nov 2016
- Pending** NIH Ro3: “An investigation of breath carbon isotope ratios as biomarkers for sugars intake” Role: PI, with Natasha Tasevska, co-I. Submitted Nov 2016. \$164,334/2 yrs.
- Pending** NIH RoI: “Genetic and environmental determinants of vitamin D among Alaska Native people” Role: Co-I, with K. Thummel and B. Boyer (multiple PIs). Submitted Oct 2016. \$3,728,930/5 years. Score 35 (23rd percentile).
- Pending** NIH RoI: “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).
- 2016-2021** NIH PoI: “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 RoI: “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 RoI: “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 RoI: “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 CO₂ 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 | S14, S12, S11, S09, S07, S06 |
| Fundamentals of Biology I | Undergrad, 1 st year | UAF | F16, F15, F14, F13, F11, F09, S08 |
| Fundamentals of Biology II | Undergrad, 1 st year | UAF | F06 |
| Animal Physiology | Undergrad, 3 rd year | UAF | F04, F05 |
| Animal Ecological Physiol. | Undergrad, 3 rd year | Wellesley College | 2003, 2004 |
| Stable Isotope Ecology | Undergrad, 4 th year | Wellesley College | 2003 |
| Human Biology | Undergrad, 1 st year | Wellesley College | 2003 |
| Introductory Biology | Undergrad, 1 st year | Swarthmore College | 2002 |
| Diet and Metabolism | Undergrad, 4 th year | Swarthmore College | 2002 |
| Animal Physiology | Undergrad, 3 rd year | Swarthmore College | 2001 |

MENTORING

Postdoctoral scholars

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

PhD student advisees

| | | |
|------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dr. Sarah Nash | PhD 2013 | <u>Project</u> : “Developing stable isotope biomarkers of Yup’ik traditional and market foods to detect associations with chronic disease risk” <u>Currently</u> : Director of Cancer Surveillance at the Alaska Native Tribal Health Consortium |
| Dr. Trixie Lee* <i>*(with C.L. Buck)</i> | PhD 2012 | <u>Project</u> : “Expression and mechanisms of hibernation in the arctic: the Alaska marmot and the arctic ground squirrel” <u>Currently</u> : Assistant Professor, Harding University |
| Dr. Caroline van Hemert* <i>*(with T. O’Hara)</i> | PhD 2012 | <u>Project</u> : “Epizootic of beak deformities in Alaska: investigation of an emerging avian disease” <u>Currently</u> : Research Wildlife Biologist, USGS |

MS student advisees

| | | |
|---------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Justin Smith | in progress | <u>Project</u> : “Assessing seasonal diet use by harbor seals using stable isotope ratios of vibrissae” |
| Garrett Savory* <i>*(with C. Hunter)</i> | MS 2013 | <u>Project</u> : “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 | <u>Project</u> : “Rhinoceros auklet developmental responses to moderate food restriction” |

Undergraduate research advisees

| | | |
|---------------------------|--------------|--------------------------------------------------------------------------------------|
| Sammer Dia | Current | <u>Currently</u> : BS in progress |
| Diane Murph | Current | BS in progress |
| Kjersten Williams | Current | BS in progress |
| Sarah Hartmann | Current | BS in progress |
| Katie Roseberry | Spring 2016 | BS in progress |
| Brittany Corbin | Summer 2015 | BS in progress |
| April Mustard | BS 2015, UAF | UAA Nursing Program |
| Rebecca (Church) Wilbur | BS 2011, UAF | DO (Doctor of Optometry) candidate, College of Optometry, Pacific University Oregon |
| 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 |

| | | |
|--------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------|
| Kelsey (Alexander) Gregg | BS 2006, UAF | Resident at the University of Chicago 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 |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 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 (<i>Anas platyrhynchos</i>) | 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 (<i>Haematopus bachmani</i>) chicks” | A. Powell |
| Heather Craig | MS Wildlife Biology and Conservation 2015 “Breeding ecology of Smith’s longspurs (<i>Calcarius pictus</i>) 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 Ooppel | 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 Chironomidae (Diptera) as indicators of past environmental change” | M. Wooller |

| | | |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Matthew Urschel | MS Biology 2008 | K. O'Brien |
| | "Molecular basis of mitochondrial form and function in the hearts of Antarctic notothenioids that vary in the expression of hemoglobin and myoglobin" | |
| Mette Nielson-Kaufmann | MS Marine Biology 2006 | B. Bluhm |
| | "Estimating ¹³ C and ¹⁵ N turnover rates in the arctic amphipod <i>Onisimus litoralis</i> : potential applications for analyzing the transfer of sea ice production to under-ice fauna." | |

CONFERENCES*

| | | | |
|------|-----------------------------------------------------------------------------------------------------------------------|------------------------------|----------------|
| 2017 | <i>Experimental Biology: The American Society of Nutrition</i> | Chicago, IL | 1 abstract |
| 2016 | <i>Experimental Biology: The American Society of Nutrition</i> | San Diego, CA | 1 abstract |
| 2015 | NIH IDeA Western Regional Conference | Cour d'Alene, ID | 1 invited talk |
| 2015 | <i>Experimental Biology: The American Society of Nutrition</i> | Boston, MA | 1 abstract |
| 2012 | 15 th International Congress on Circumpolar Health | Fairbanks, AK | 4 abstracts |
| 2012 | <i>Experimental Biology: The American Society of Nutrition</i> | San Diego, CA | 4 abstracts |
| 2010 | <i>The 7th International Conference on Applications of Stable Isotope Techniques to Ecological Studies (ISOECOL7)</i> | Fairbanks, AK (Organizer) | 3 abstracts |
| 2009 | <i>The Alaska Native Health Conference</i> | Anchorage, AK | 2 abstracts |
| 2008 | <i>The 6th International Conference on Applications of Stable Isotope Techniques to Ecological Studies (ISOECOL6)</i> | Honolulu, HI | 6 abstracts |
| 2007 | <i>University of Alaska Biomedical Research Conference</i> | Fairbanks, AK | 2 abstracts |
| 2006 | <i>American Physiological Society</i> | Virginia Beach, VA | 1 invited talk |
| 2006 | NIH National IDeA Symposium of Biological Research Excellence | Washington, DC | 1 abstract |
| 2006 | <i>5th International Conference on Application of Stable Isotope Techniques to Ecological Studies (ISOECOL5)</i> | Belfast, N Ireland | 2 abstracts |
| 2005 | <i>The Society for the Study of Evolution</i> | Fairbanks, AK | 2 abstracts |
| 2004 | <i>3rd International Conference on Comparative Biochemistry and Physiology</i> | Ithala, South Africa | 1 abstract |
| 2004 | <i>4th International Conference on Application of Stable Isotope Techniques to Ecological Studies (ISOECOL4)</i> | Wellington, New Zealand | 2 abstracts |
| 2002 | <i>The Society for Integrative and Comparative Biology</i> | Anaheim, CA | 1 abstract |
| 2002 | <i>3rd International Conference on Application of Stable Isotope Techniques to Ecological Studies (ISOECOL3)</i> | Flagstaff, AZ | |
| 2000 | <i>The Society for Integrative and Comparative Biology</i> | Atlanta, GA | 1 abstract |
| 2000 | <i>2nd International Conference on Application of Stable Isotope Techniques to Ecological Studies (ISOECOL2)</i> | Braunschweig, Germany | 1 abstract |
| 1999 | <i>The Society for Integrative and Comparative Biology</i> | Denver, CO | 1 abstract |
| 1998 | <i>The Ecological Society of America</i> | Baltimore, MD | 1 abstract |
| 1998 | <i>The Society for Integrative and Comparative Biology</i> | Boston, MA | 1 abstract |
| 1998 | <i>3rd International Butterfly Ecology and Evolution Symposium</i> | Crested Butte, CO | 1 abstract |

*Includes only conferences I attended.

INVITED SEMINARS

| | |
|------|------------------------------------------------------------------------|
| 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 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 Podlutzky
 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 Committee
 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 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.