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Education

- 2011 **Ph.D. (Biological Oceanography)** Massachusetts Institute of Technology-Woods Hole Oceanographic Institution Joint Program in Oceanography: Applied Ocean Science and Engineering
Dissertation Title: "Functional connectivity of coral reef fishes in a tropical seascape assessed by compound-specific stable isotope analyses." *Advisor: Dr. Simon Thorrold*
- 2005 **B.Sc. (Biology)** Bates College, Summa Cum Laude
Honors Thesis Title: "The impact of a changing food supply on Arctic benthos: digestibility of ice algae and phytoplankton" *Advisors: Dr. William Ambrose Jr. (Biology) and Dr. Beverly Johnson (Geology)*

Professional Appointments

- 2013 **Post-doctoral Scholar:** Ocean Science Department, University of California, Santa Cruz, Santa Cruz, CA, USA
Supervisor: Dr. Mathew McCarthy and Dr. Tom Guilderson
- 2011 - present **Post-doctoral Investigator:** Red Sea Research Center, King Abdullah University of Science and Technology, Thuwal, Kingdom of Saudi Arabia and Biology Department, Woods Hole Oceanographic Institution, Woods Hole, MA, USA
Supervisor: Dr. Michael Berumen (KAUST) and Dr. Simon Thorrold (WHOI)

Academic Honors and Awards

- 2011 Best Paper Award Coral Reefs Volume 30: Award finalist
2009 Best Student Paper Award at the 4th International Otolith Symposium
2009 Sally Richardson Best Student Paper Award at the 33rd Annual Larval Fish Conference
2005 Summa Cum Laude at Bates College
2005 Honors Thesis in Biology at Bates College
2005 Phi Beta Kappa Honor Society
2001-5 Dean's Honors List at Bates College (8 consecutive semesters)
2001 Arthur Crafts Award

Publications

13. **McMahon KW**, Hamady L, Thorrold SR (In review) Ocean ecogeochemistry – A review. Invited review for *Oceanography and Marine Biology: An Annual Review*
12. **McMahon KW**, Hamady L, Thorrold SR (In review) A review of ecogeochemistry approaches to estimating movements of marine animals. *Limnology and Oceanography*
11. **McMahon KW**, Berumen ML, Thorrold SR (In press) Linking habitat mosaics and connectivity in a coral reef seascape. *Proceedings of the National Academy of Science*
10. **McMahon KW**, Berumen ML, Mateo I, Elsdon TS, Thorrold SR (2011) Carbon isotopes in otolith amino acids identify residency of juvenile snapper (Family: Lutjanidae) in coastal nurseries. *Coral Reefs* **30**:1135-1145 (Best Paper Award finalist)
9. **McMahon KW**, Fogel ML, Johnson BJ, Houghton LA, Thorrold SR (2011) A new method to reconstruct fish diet and movement patterns from $\delta^{13}\text{C}$ values in otolith amino acids. *Canadian Journal of Fisheries and Aquatic Sciences* **68**:1330-1340
8. **McMahon KW**, Fogel ML, Elsdon T, Thorrold SR (2010) Carbon isotope fractionation of amino acids in fish muscle reflects biosynthesis and isotopic routing from dietary protein. *Journal of Animal Ecology* **79**:1132-1141
7. Elsdon T, Ayvazian S, **McMahon KM**, Thorrold SR (2010) Experimental evaluation of stable isotope fractionation in fish muscle and otoliths. *Marine Ecology Progress Series* **408**:195-205
6. Graham BS, Koch PL, Newsome SD, **McMahon KW**, and Aurioles D (2009) Using isoscapes to trace the movements and foraging behavior of top predators in oceanic ecosystems. In *Isoscapes: Understanding Movement, Pattern and Process on Earth Through Isotope Mapping* (eds. J. West, G. J. Bowen, T. E. Dawson, K. P. Tu). pp. 299-318, *Springer*, New York
5. Skomal GB, Zeeman SI, Chisholm JH, Summers EL, Walsh HJ, **McMahon KW**, Thorrold SR. (2009) Mesopelagic trans-equatorial migrations by basking sharks in the western Atlantic Ocean. *Current Biology* **19**:1019-1022
4. Carroll M, Johnson B, Henkes G, **McMahon KW**, Voronkov A, Ambrose W, Denisenko S. (2009). Bivalves as indicators of environmental variation and potential anthropogenic impacts in the southern Barents Sea. *Marine Pollution Bulletin* **59**:193-206
3. Ambrose WG, Carroll ML, Greenacre M, Thorrold SR, **McMahon KW**. (2006) “Variation in bivalve growth in a Norwegian high-Arctic fjord: Evidence for local- and large-scale climatic forcing.” *Global Change Biology* **12**:1595-1607

2. **McMahon KW**, Ambrose WG, Johnson BJ, Sun M-Y, Lopez GR, Clough LM, Carroll ML (2006) Benthic community response to ice algae and phytoplankton in Ny Ålesund, Svalbard. *Marine Ecology Progress Series* **310**:1-14 (Issue's feature article)
1. **McMahon KW**, Johnson BJ, Ambrose WG. (2005). Diet and movement of the killifish, *Fundulus heteroclitus*, in a Maine salt marsh assessed using gut contents and stable isotope analyses. *Estuaries* **28**:966-973

Research Grants and Fellowships

- 2008 International Society for Reef Studies/Ocean Conservancy Coral Reef Research Fellowship (\$14,546)
- 2008 Ocean Life Institute Student Research Grant (\$2,340)
- 2008 Isoscapes Conference Travel Grant (\$400)
- 2006-9 National Science Foundation Graduate Research Fellowship (\$121,500)
- 2005-6 Ocean Life Fellowship (\$28,446)
- 2005 Howard Hughes Travel Grant (\$500)
- 2004-5 Howard Hughes Summer Fellowship (\$3,000)
- 2004 Bates College Student Research Grant (\$3,000)
- 2004 Howard Hughes Student-Faculty Research Grant (\$12,000)
- 2004 Howard Hughes Travel Grant (\$500)
- 2003 Bates College Student Research Grant (\$3,000)

Teaching Experience

- 2010 **Guest Lecturer**, Sea Education Association, advanced undergraduates
- 2010 **Teaching Assistant**, MIT/WHOI Joint Program: 7.43 Biological Oceanography, graduate students
- 2010 **Guest Lecturer**, Connecticut College: Biology/Botany 294, advanced undergraduates
- 2009 **Co-Instructor**, Woods Hole Oceanographic Institution: Developed and co-taught three week course "Human Impacts on the Marine Environment," advanced undergraduates
- 2008 **Guest Lecturer**, Mullen-Hall Elementary School: Multiple lessons on ocean science, Elementary School
- 2008 **Guest Lecturer**, Brown University: BIOL1880 Comparative Biology of Vertebrates, advanced undergraduates
- 2007 **Guest Lecturer**, Codman Academy: Marine Biology Course, high school
- 2004-5 **Technical Writing Assistant**, Bates College: Biological Principles, Ecology, Cellular and Molecular Biology
- 2004-5 **Academic Tutor**, Bates College: Organic Chemistry I and II, Calculus I and II, Biological Principles, Ecology
- 2003-5 **Teaching Assistant**, Bates College: Organic Chemistry I and II, Biological Principles, Ecology

Academic Advising

- 2012 **Undergraduate mentor:** Elizabeth Sonshine, Bates College Career Discovery in Practice
- 2011 **Thesis committee member:** Carolyn Harris, Undergraduate honors thesis, Bates College
- 2010-11 **High school mentor:** MacKenzie Tasha, Falmouth High School Volunteer in Public Schools (VIPS)
- 2008-11 **MIT-WHOI Graduate Student mentor:** Santiago Herrera, Li Ling Hamady, Katherine Pitz, Maya Yamato

Conference Presentations

- McMahon KW**, Berumen M, Thorrold S. “Unraveling carbon flow pathways on coral reefs with compound specific stable isotope analysis.” Oral presentation at: 8th Annual Isotope Ecology Conference, August 2012, Brest, France.
- McMahon KW**, Berumen M, Thorrold S. “Seascape connectivity in a Red Sea coral reef ecosystem.” Oral presentation at: 12th International Coral Reef Symposium, July 2012, Cairns, Australia
- McMahon KW**, Berumen M, Thorrold S. “Functional connectivity of coral reef fishes in a Red Sea coral reef seascape assessed by compound specific stable isotope analysis.” Oral presentation at: Ocean Sciences Meeting, February 2012, Salt Lake City, UT, USA
- McMahon KW**, Thorrold S, Berumen M. “Revisiting the source of carbon fueling fisheries on coral reefs.” Poster presentation at: Ocean Sciences Meeting, February 2012, Salt Lake City, UT, USA
- McMahon KW**. “Functional connectivity of coral reef fishes in a Red Sea tropical seascape.” Oral presentation at: Living Oceans Foundation Symposium on Coral Reef Conservation in the Red Sea, January 2012, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia
- McMahon KW**. “Ontogenetic migration and trophic dynamics.” Oral presentation at: Red Sea Research Center Symposium, April 2011, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia
- McMahon KW**, Fogel M, Thorrold, S. “A new tool for inferring trophic interactions and fish movement using stable carbon isotope analysis of otolith amino acids.” Poster presentation at: Ocean Sciences Meeting, February 2010, Portland, OR, USA
- McMahon KW**, Fogel M, Elsdon T, Mateo I, Thorrold S. “Stable carbon isotope analysis of amino acids in otolith protein: a new tool for tracking fish movement.” Oral presentation at: 4th International Otolith Symposium, August 2009, Monterey, CA, USA (Best Student Paper Award)

McMahon KW, Fogel M, Elsdon T, Thorrold S. “Carbon isotope fractionation of amino acids of a marine fish.” Oral presentation at: 33rd Annual Larval Fish Conference, July 2009, Portland, OR, USA (Sally Richardson Best Student Paper Award)

McMahon KW, Fogel M, Elsdon T, Thorrold S. “Patterns in carbon isotope fractionation of amino acids between diet and consumer in a model fish species.” Oral presentation at: 6th Annual Isotope Ecology Conference, August 2008, Honolulu, HI, USA

McMahon KW, Lysiak N, Brin L, Buckman K, Kneeland J, Gibbons F, Thorrold SR. “Ocean ecogeochemistry applied to connectivity analyses in marine populations.” Poster presentation at: Isoscapes Conference, April 2008, Santa Barbara, CA, USA

McMahon KW, Ambrose WG, Johnson BJ, Sun M-Y, Lopez GR, Clough LM, Carroll ML. “The impacts of a changing food supply on Arctic benthos: digestibility of ice algae and phytoplankton.” Oral presentation at: 34th Annual Benthic Ecology Meeting. April 2005, Williamsburg, VA, USA

McMahon KW. “The Impacts of a changing food supply on Arctic benthos.” Oral presentation at: Mount David Research Symposium, March 2005, Lewiston, ME, USA

McMahon KW, Ambrose WG, Johnson BJ. “Contributions of local food items to the diet of *Fundulus heteroclitus*: analysis of $\delta^{13}\text{C}/\delta^{15}\text{N}$ and gut contents.” Poster presentation at: 33rd Annual Benthic Ecology Meeting. March 2004, Mobile, AL, USA

McMahon, KW. “Contributions of local food items to the diet of *Fundulus heteroclitus*” Poster presentation at: Mount David Research Symposium, March 2004, Lewiston, ME, USA

McMahon KW. “Impacts of *Phragmites* control on selected ecological functions within tidelands of the Lieutenant River.” Poster presentation at: Connecticut College Research Symposium, August 2003, New London, CT, USA

Invited Talks

McMahon KW “Compound-specific stable isotope analysis: why, how, and what’s next” in the Workshop II: Sampling animal tissues for stable isotope analysis. 8th Annual Isotope Ecology Conference, August 2012, Brest, France. Workshop co-organizer and presenter.

McMahon KW “Functional connectivity of snapper in a Red Sea coral reef seascape.” ARC Centre of Excellence Coral Reef Studies Seminar, June 2011, James Cook University, Townsville, Australia

McMahon KW “Tracking fish migration in the marine environment.” Sea Education Association, June 2010, Woods Hole, MA, USA

McMahon KW, “Tracking fish migration in the marine environment: new approaches to an old question.” Connecticut College, February 2010, New London, CT, USA

McMahon KW “Stable carbon isotope analysis of amino acids in otolith protein: a new tool for tracking fish movement.” Biology Department Seminar, November 2009, Woods Hole Oceanographic Institution, Woods Hole, MA

McMahon KW “The secret lives of coral reef fishes: tracking migration in the marine environment.” Ocean Science Journalism Fellows Lecture, September 2009, Woods Hole Oceanographic Institution, Woods Hole, MA, USA

McMahon KW “Tracking animal movement in the marine environment.” Biology Department Seminar, February 2009, Bates College, Lewiston, ME, USA

McMahon KW “Tracking coral reef fish migration: a chemical approach to an ecological question.” Trustee and Corporation Member Lecture, October 2008, Woods Hole Oceanographic Institution, Woods Hole, MA, USA

McMahon KW “Where do the juvenile coral reef fish play?” Ocean Science Journalism Fellows Lecture, September 2008, Woods Hole Oceanographic Institution, Woods Hole, MA, USA

McMahon KW “Impacts of a changing food supply on Arctic benthos: digestibility of ice algae and phytoplankton.” School of Marine and Atmospheric Sciences Lecture, April 2005, Stony Brook University, Stony Brook, NY, USA

McMahon KW “The impact of a changing food supply on Arctic benthos: digestibility of ice algae and phytoplankton.” Ecology and Evolutionary Biology Department Lecture, October 2004, Cornell University, Ithaca, NY, USA

Manuscript reviewer for: *Amino Acids, Coral Reefs, Environmental Science and Technology, Estuaries, Journal of Animal Ecology, Journal of Experimental Marine Biology and Ecology, Journal of Sea Research, Marine Ecology Progress Series, Methods in Ecology and Evolution, PLOS One, Progress in Oceanography*

Grant reviewer for: *National Science Foundation*

Dive certifications: NAUI Advanced Open Water, NAUI Rescue Diver, NAUI Nitrox, NAUI Drysuit, IANTD Closed-Circuit rebreather

Society membership: American Association for Underwater Scientists, American Fisheries Society, Advancing the Science of Limnology and Oceanography, Divers Alert Network, Phi Beta Kappa Society, Sigma Xi Scientific Research Society

Current as of August 2012