

KARL D. CASTILLO: CURRICULUM VITAE



University of North Carolina at Chapel Hill
Department of Marine Sciences/Environment, Ecology, and Energy Program

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(1.) Professional Preparation:

Southeast Missouri State University	Cape Girardeau, MO	Biology/Unified Sciences	B.S., 1998
University of South Carolina	Columbia, SC	Marine Science	M.S., 2004
University of South Carolina	Columbia, SC	Marine Science	Ph.D., 2008
University of North Carolina	Chapel Hill, NC	Ecophysiology	Postdoc., 2008-10
University of North Carolina	Chapel Hill, NC	Ecophysiology	Postdoc., 2010-12

(2.) Appointments:

University of North Carolina at Chapel Hill	Assistant Professor	2012 – 2018
University of North Carolina at Chapel Hill	Associate Professor	2018 – Present

(3.) Products:

- 2018 Benson BE, Rippe JP, Bove CB, **Castillo KD**. Apparent timing of density banding in the Caribbean coral *Siderastrea siderea* suggests complex role of key physiological variables. *Coral Reefs* <https://doi.org/10.1007/s00338-018-01753-w>
- 2018 Rippe J, Baumann JH, DeLeener DN, Aichelman HE, Davies SW, **Castillo KD**. Corals sustain growth but not skeletal density across the Florida Keys Reef Tract despite ongoing warming. *Global Change Biology* 25: (11) 5205-5217
- 2016 Davies SW, Marchetti A, Ries J, **Castillo KD**. Thermal and $p\text{CO}_2$ stress elicit divergent transcriptomic responses in a resilient coral. *Frontiers in Marine Sciences* 3: 112
- 2014 **Castillo KD**, Ries JB, Bruno JF, Westfield IT. The reef-building coral *Siderastrea siderea* exhibits parabolic responses to ocean acidification and warming. *Proceedings of the Royal Society B: Biological Sciences* 281: 20141856
- 2012 **Castillo KD**, Ries JB, Weiss JM, Lima FP. Decline of forereef corals in response to recent warming linked to history of thermal exposure. *Nature Climate Change* 2: 756-760

(4.) Additional Relevant Publications:

- 2018 Davies SW, Ries JB, Marchetti A, **Castillo KD**. *Symbiodinium* functional diversity in the coral *Siderastrea siderea* is influenced by thermal stress and reef environment, but not ocean acidification. *Frontiers in Marine Sciences*: 5: 150

- 2017 Baumann JH, Davies SW, Aichelman HE, **Castillo KD**. Coral *Symbiodinium* communities across the Belize Mesoamerican Barrier Reef System is influenced by coral host species and thermal variation. *Microbial Ecology* 75: 903-915
- 2011 **Castillo KD**, Ries JB, Weiss JW. Declining coral skeletal extension for forereef colonies of *Siderastrea siderea* on the Mesoamerican Barrier Reef, southern Belize. *PLoS ONE*: 6: e14615
- 2010 **Castillo KD**, Lima FP. Comparison of *in situ* and satellite-derived (MODIS-Aqua/Terra) methods of assessing temperature on coral reefs. *Limnology and Oceanography: Methods* 8: 107-117
- 2005 **Castillo KD**, Helmuth BS. Influence of thermal history on the response of the *Montastraea annularis* to short-term temperature exposure. *Marine Biology* 148:261-270

(5.) Synergistic Activities:

- (i) Lab booth at the North Carolina Museum of Natural Sciences for Marine Mammal Day with undergrads, graduate students for presentation on coral reefs and climate change including ocean warming and ocean acidification
- (ii) Reviewer, *Nature Climate Change*, *Marine Ecology Progress Series*, *Marine Biodiversity*, *Coral Reefs*, *Proceeding of the National Academy of Sciences B*, *Limnology and Oceanography*, *Limnology and Oceanography: Methods*; *Marine Geodesy*; *Marine Environmental Research*, *Invertebrate Biology*
- (iii) Developed lesson plans for middle school science teachers through the GK-12 Fellowship Program at the University of South Carolina (2007-2008)
- (iv) Guest Speaker/Lab Tours/Mentoring for Increasing Diversity and Enhancing Academia (IDEA) program at UNC Chapel Hill (Spring, Fall 2013; Spring, Summer 2014)
- (v) Guest Speaker for Climate Leadership and Energy Awareness Program (Climate LEAP) at UNC Chapel Hill (Summer 2009, 2010, 2011, 2014)

(6.) Collaborators and other affiliations:

(i) Collaborators and Co-authors

Justin Ries, Northeastern University, Marine and Environmental Sciences
 John Bruno, University of North Carolina at Chapel Hill, Biology
 Brian Helmuth, Northeastern University, Environmental Science and Policy
 Fernando Lima, University of South Carolina, Columbia
 Adrian Marchetti, University of North Carolina at Chapel Hill, Marine Sciences
 Chris Martens, University of North Carolina at Chapel Hill, Marine Sciences
 Melanie McField, Healthy Reefs Initiative, Belize
 Sarah Davies, Boston University, Biology

(ii) Graduate Advisors and Postdoctoral Sponsors:

Brian Helmuth (M.S. thesis advisor, Northeastern University)
 Brian Helmuth (Ph.D. dissertation advisor, Northeastern University)
 John Bruno (Postdoctoral advisor, University of North Carolina at Chapel Hill)
 Justin Ries (Postdoctoral advisor, Northeastern University)

(iii) Thesis advisees and postdoctoral scholars sponsored

Clare Fieseler (Ph.D.), Justin Baumann (Ph.D.), John Rippe (Ph.D.), Colleen Bove (Ph.D.), Sarah Davies (Postdoc)