

Christopher H. Martin

Department of Biology
University of North Carolina at Chapel Hill
2256 Genome Sciences Building
250 Bell Tower Drive
Chapel Hill, NC 27514
email: chmartin@unc.edu
phone: 919-962-4841

Education

- 2013 **Ph.D. Population Biology**, University of California, Davis
Advisor: Peter Wainwright
- 2006-07 **Fulbright Scholar**, Cape Maclear, Malaŵi
- 2005 **B. S. Biology**, Duke University, *cum laude* with distinction

Professional appointments

- 2015- **Assistant Professor of Evolutionary Biology**, University of North Carolina at Chapel Hill
- 2013-2015 **Miller Postdoctoral Research Fellow**, University of California, Berkeley
Advisors: Erica Bree Rosenblum, Craig Miller

Publications

- In revision Keren T, Kiflawi M, **Martin CH**, China V, Mann O, Holzman R. A complex performance landscape for suction-feeding shapes the evolution of morphological diversity in a reef damselfish. *Journal of Experimental Biology*.
- In press Stager JC, Alton K, **Martin CH**, King DT, Livingstone DT. On the age and origin of Lake Ejagham and its endemic fishes. *Quaternary Research*.
- In press McGirr JA*, **Martin CH**. Novel candidate genes underlying extreme trophic specialization in Caribbean pupfishes. *Molecular Biology and Evolution*. doi:10.1093/molbev/msw286 *graduate student.
- In press **Martin CH**, Erickson PA, Miller CT. The genetic architecture of novel trophic specialists: higher effect sizes are associated with exceptional oral jaw diversification in a pupfish adaptive radiation. *Molecular Ecology*.

- 2016 **Martin CH.** The cryptic origins of evolutionary novelty: 1,000-fold-faster trophic diversification rates without increased ecological opportunity or hybrid swarm. *Evolution* 70:2504-2519.
- 2016 **Martin CH.** Context dependence in complex adaptive landscapes: frequency and trait-dependent selection surfaces within an adaptive radiation of Caribbean pupfishes. *Evolution* 70:1265-1282.
- 2016 Higham TE, Rogers SM, Langerhans RB, Jamniczky HA, Lauder GV, Stewart WJ, **Martin CH**, Reznick DN. Speciation through the lens of biomechanics: locomotion, prey capture, and reproductive isolation. *Proceedings of the Royal Society B*. 283:1294-1304.
- 2016 **Martin CH**, Crawford JE, Turner BJ, Simons LH. Diabolical survival in Death Valley: recent pupfish colonization, gene flow, and genetic assimilation in the smallest species range on earth. *Proceedings of the Royal Society B*. 283:23-34..
- 2015 **Martin CH**, Cutler JS, Friel JP, Dening Touokong C, Coop G, Wainwright PC. Complex histories of repeated gene flow in Cameroon crater lake cichlids cast doubt on one of the clearest examples of sympatric speciation. *Evolution* 69:1406-1422.
- 2014 Musilova Z, Indermaur A, Nyom ARB, Tropek R, **Martin CH**, Schliewen UK. Persistence of *Stomatepia mongo*, an endemic cichlid fish of the Barombi Mbo crater lake, Southwestern Cameroon, with notes on its life history and behavior. *Copeia* 3:556-560.
- 2014 **Martin CH**, Feinstein LC. Novel trophic niches drive variable progress toward ecological speciation within an adaptive radiation of pupfishes. *Molecular Ecology* 23:1846-1862.
- 2013 Schmitz L, Motani R, Oufiero CE, **Martin CH**, McGee MD, Gamarra AR, Lee JJ, Wainwright PC. Potential enhanced ability of giant squid to detect sperm whales is an exaptation tied to their large body size. *BMC Evolutionary Biology*. 13:226.
- 2013 **Martin CH**, Wainwright PC. A remarkable species flock of *Cyprinodon* pupfishes endemic to San Salvador Island, Bahamas. *Bulletin of the Peabody Museum of Natural History*. 54:231-240.
- 2013 Friedman M, Keck BP, Dornburg A, Eytan RI, **Martin CH**, Hulsey CD, Wainwright PC, Near TJ. Molecular and fossil evidence place the origin of cichlid fishes long after Gondwanan rifting. *Proceedings of the Royal Society London B* 280:1770.

- 2013 **Martin CH**, Wainwright PC. On the measurement of ecological novelty: scale-eating pupfish are separated by 168 my from other scale-eating fishes. *PLOS One*. 8:e71164.
- 2013 **Martin CH**. Strong assortative mating by diet, color, size, and morphology but limited progress toward sympatric speciation in a classic example: Cameroon crater lake cichlids. *Evolution*. 67:2114-2123.
- 2013 **Martin CH**, Wainwright PC. Multiple fitness peaks on the adaptive landscape drive adaptive radiation in the wild. *Science*. 339:208-211.
- 2013 Schmitz L, Motani R, Oufiero CE, **Martin CH**, McGee MD, Gamarra AR, Lee JJ, Wainwright PC. Allometry indicates giant eyes of giant squid are not exceptional. *BMC Evolutionary Biology*. 13:45.
- 2012 **Martin CH**. Weak disruptive selection and incomplete phenotypic divergence in two classic examples of sympatric speciation: Cameroon crater lake cichlids. *American Naturalist*. 180:E90-109.
- 2011 **Martin CH**, Wainwright PC. Trophic novelty is linked to exceptional rates of morphological diversification in two adaptive radiations of *Cyprinodon* pupfish. *Evolution*. 65:2197-2212.
- 2010 **Martin CH**. Unexploited females and unreliable signals of male quality in a Malawi cichlid bower polymorphism. *Behavioral Ecology*. 21:1195-1202.
- 2009 **Martin CH**, Genner MJ. High niche overlap between two successfully coexisting pairs of Lake Malawi cichlids. *Canadian Journal of Fisheries and Aquatic Sciences*. 66:579-588.
- 2009 **Martin CH**, Genner MJ. A role for male bower size as an intrasexual signal in a Lake Malawi cichlid fish. *Behaviour*. 146:963-978.
- 2007 **Martin CH**, Johnsen S. A field test of the Hamilton-Zuk hypothesis in the guppy *Poecilia reticulata*. *Behavioral Ecology and Sociobiology*. 61:1897-1909.
- 2004 Yang AS, **Martin CH**, Nijhout HF. Geographic variation of caste structure among ant populations. *Current Biology*. 14: 514-519.

Awards

- 2013 **Merton Love Award**, best dissertation in Evolution & Ecology, University of California, Davis

2013	Ernst Mayr Award , best student systematics presentation at Evolution 2013
2012	Carl Hubbs Award , best student presentation at Desert Fishes Council
2012	Hamilton Award co-winner , best student presentation at Evolution 2012
2012	ARCS Foundation Scholar , Northern California Chapter
2011	Daphne and Ted Pengelley Award , best research proposal, Center for Population Biology, University of California, Davis
2011	ARCS Foundation Scholar , Northern California Chapter
2010	Honorable Mention: Hamilton Award at Evolution 2010
2005	Horn Prize for Excellence in Biology , Duke Biology Department

Fellowships

2013	Miller Postdoctoral Research Fellowship , University of California, Berkeley
2013	NSF Postdoctoral Research Fellowship in Biology (declined)
2012	Dissertation Year Fellowship , University of California, Davis
2007	NSF Graduate Research Fellowship , National Science Foundation
2007	First Year Graduate Fellowship , University of California, Davis
2001	University Scholars Program Scholarship , full-tuition merit scholarship for students with financial need, Duke University

Grants

2013	Pilot Grant, UC Davis Genome Center	\$2,500
2013	Pilot grant, National Park Service	\$2,500
2012	ARCS Foundation Award	\$10,000
2011	Student Grant , Gerace Research Center, Bahamas, \$800 plus reduced fees	
2011	ARCS Foundation Award	\$10,000
2010	Doctoral Dissertation Improvement Grant , NSF	\$15,000
2009	Small Grant , UCMexus,	\$ 1,500
2008-11	Graduate Research Awards , Center for Population Biology	\$ 8,000
2008	Joint Funding Grant , CA Department of Fish & Game	\$10,000
2008	Young Explorer's Grant , National Geographic Society,	\$ 5,000
2008	Lewis and Clark Grant , American Philosophical Society,	\$ 3,000
2008	Student Grant , Gerace Research Center, Bahamas, \$800 plus reduced fees	
2006	Fulbright U.S. Student Grant , U. S. State Department,	\$23,000

Presentations and Invited Seminars

2016	<i>Invited speaker.</i> International Prize for Biology Symposium. Japan Society for the Promotion of Science. Tokyo, Japan.
2016	<i>Plenary speaker.</i> Physical Biology of Organisms symposium. Regional Society for Integrative and Comparative Biology. Biology Department, Duke University, Durham, NC.
2016	<i>Invited speaker.</i> Department of Biology. University of Florida, Gainesville, FL.

- 2016 Contributed talk. Evolution meetings, Austin, TX
- 2016 *Invited speaker.* Department of Applied Ecology, North Carolina State University, NC
- 2016 *Invited speaker.* Department of Biology. Eastern Carolina University, NC
- 2016 *Invited speaker.* Department of Biology. University of North Carolina, Asheville, NC
- 2016 *Contributed talk.* Society for Integrative and Comparative Biology meeting, Portland, OR
- 2015 *Invited speaker.* Department of Biological Sciences, Virginia Tech, VA
- 2015 *Invited speaker.* American Killifish Association Annual Convention. Detroit, MI
- 2015 *Invited speaker.* Miller Institute for Basic Sciences, lunch seminar series. University of California, Berkeley, CA
- 2015 *Invited speaker.* Museum of Vertebrate Zoology, University of California, Berkeley, CA
- 2014 *Contributed talk.* Evolution meetings, Raleigh, NC
- 2014 *Invited speaker.* Simons Institute, University of California, Berkeley
- 2014 *Invited speaker.* Biology Department, University of North Carolina, Chapel Hill, NC
- 2013 *Invited speaker.* California Academy of Sciences, San Francisco, CA
- 2013 *Invited speaker.* ***Merton Love Award winner.** Dissertation seminar. University of California, Davis
- 2013 *Contributed talk.* ***Ernst Mayr Award winner.** Evolution meetings, Snowbird, UT
- 2013 *Contributed talk.* Society for Integrative and Comparative Biology meeting, San Francisco, CA
- 2012 *Contributed talk.* ***Hamilton Award co-winner.** Evolution meetings, Ottawa, Canada
- 2012 *Contributed talk.* ***Carl Hubbs Award winner.** Desert Fishes Council meeting, Death Valley National Park, NV
- 2011 *Invited speaker.* Bay Area Killifish Association. Annual convention, San Francisco, CA
- 2011 *Contributed talk.* Evolution meetings, Norman, OK
- 2010 *Invited speaker.* Sacramento Aquarium Society, Sacramento, CA
- 2010 *Contributed talk.* ***Hamilton Award honorable mention.** Evolution meetings, Portland, OR
- 2009 *Contributed talk.* Society for Integrative and Comparative Biology meeting, Boston, MA

Service and Outreach

- 2013-2015 **Member**, Devil's Hole Pupfish Genetic Advisory Panel, U.S. Fish & Wildlife Service
- 2013-present **Lead organizer**, *Cyprinodon* Species Maintenance Group, American Killifish Association

UNC-Chapel Hill student mentorship:

Graduate students supervised:

Emilie Richards

Joseph Mcgirr

Work-study students supervised:

Clare Bocklage, Alexander Payne, Christina Lim, Qiongqiong Mei, Ivan Piedad, Sarah Bencuya, Keara Mclean, Stephanie Jeselson, Courtney Farge

Independent study students supervised:

Yi Zeng

Dissertation committee member:

Chris Ackali 2015-

Audrey Kelly 2015-

Charlie Miller 2015-2016

Sofia de la Serna Buzon 2016-

Antonio Serrato-Capuchina 2016-

Jonathan Rader 2016-

Journal reviewer: *Science, Proceedings of the National Academy of Sciences USA, Evolution, Molecular Ecology, American Naturalist, Systematic Biology, Proceedings of the Royal Society B, Evolutionary Biology, BMC Evolutionary Biology, Journal of Evolutionary Biology, Evolutionary Ecology, Evolution and Development, Bioessays, Molecular Ecology Resources, Functional Ecology, Behavioral Ecology, Conservation Genetics, Journal of Heredity, PLoS One, Biological Journal of the Linnaean Society, International Journal of Evolutionary Biology, Behavioral Ecology and Sociobiology, Copeia, Ecology of Freshwater Fishes, Journal of Animal Ecology, Journal of Fish Biology, Hydrobiologia, African Journal of Aquatic Sciences, Southwestern Naturalist, Cambridge University Press, Oxford Bibliographies, Axios Review*

Grant reviewer: *National Science Foundation, National Geographic Society, Graduate Women in Science Fellowships*

Invited scientific outreach presentations:

Sacramento Aquarium Society, Sacramento, CA, December 2010

Bay Area Killifish Association's West Coast Weekend, San Francisco, CA, May 2011

American Killifish Association, Annual Convention, Detroit, MI, May 2015

Field Research Experience

2016	Cameroon , Northwest and Southwest Provinces: project leader.
2015	Bahamas , Gerace Research Centre, San Salvador Island: project leader
2014	Bahamas , Gerace Research Centre, San Salvador Island: project leader
2013	Bahamas , Gerace Research Centre, San Salvador Island: project leader
2011	Bahamas , Gerace Research Centre, San Salvador Island: project leader

2011 **Bahamas**, Cat Island, Rum Cay, Acklins and Crooked Islands, Long Island, New Providence Island: project leader
2011 **Dominican Republic**, Lagunas Bavaro, Oviedo, Azuei: project leader
2010 **Cameroon**, Northwest and Southwest Provinces: project leader
2009 **Mexico**, Yucatan, Quintana Roo, Chiapas States: project leader
2008 **Bahamas**, Gerace Research Centre, San Salvador Island: project leader
2006-2007 **Malawi**, Cape Maclear: project leader, Fulbright Fellowship
2005 **Madagascar**, Beza Mahafaly Research Station: field assistant
2004 **Trinidad**, Simla Research Station: project leader
2004 **Peru**, Cocha Cashu Biological Station, Manu Reserve: project leader
2003 **Costa Rica**, La Selva Biological Station, NSF REU Program
2003 **Costa Rica**, Organization for Tropical Studies, semester abroad