



Alex Dornburg

Research Curator of Ichthyology, North Carolina Museum of Natural Sciences

📍 11 W Jones Street, Raleigh NC 27601

☎ 919-707-8866

✉ alex.dornburg@naturalsciences.org

🌐 carolinafishes.github.io

POSITIONS

2015-current Research Curator of Ichthyology, North Carolina Museum of Natural Sciences, Raleigh, NC.

2017-current Adjunct Professor, Molecular and Biomedical Sciences, North Carolina State University College of Veterinary Medicine, Raleigh, NC.

2014-2015 Postdoctoral Research Associate, Yale University, New Haven, CT. Advisor: Dr. Thomas J. Near

EDUCATION

2008-2014 Ph.D. Ecology and Evolutionary Biology, Yale University, New Haven, CT. Advisor: Dr. Thomas J. Near

2008-2010 M.S. Ecology and Evolutionary Biology, Yale University, New Haven, CT. Advisor: Dr. Thomas J. Near

2005-2008 B.S. Zoology, Washington State University, Pullman, WA. Advisor: Dr. Michael Alfaro

PEER REVIEWED PUBLICATIONS

42. 2017. Dornburg, A., Lamb, A., Federman, S., Jones, C. Near, T.J. Cradles and Museums of Antarctic Biodiversity. *Nature Ecology and Evolution*. DOI: 10.1038/s41559-017-0239-y
41. 2017. Lamb, A.J., Watkins-Colwell, G.C., Moore, J.A., Iglesias, T., Warren, D.L., Brandley, M.C., Dornburg, A. Endolymphatic sac use and reproductive activity in the Lesser Antilles endemic gecko *Gonatodes antillensis* (Gekkota: Spaeodactylidae). *Bulletin of the Peabody Museum of Natural History* 58(1):17-29
40. 2017. Chakrabarty, P, Faircloth, B.C., Ludt, W.B, McMahan, C.D., Near, T.J, Dornburg, A., Albert, J.S., Arroyave, J., Stiassny, M.J., Sorenson, L., Alfaro, M.E. Phylogenomic Systematics of Ostariophysan fishes: Ultraconserved Elements Support the Surprising Non-monophyly of Characiformes. *Systematic Biology* (advance access)
39. 2017. Dornburg, A., Townsend, J.P., Spriggs, E., Eytan, R.I., Moore, J.A., Wainwright, P.C., Lemmon, A.R., Moriarty Lemmon, E., Near, T.J. Phylogenetic informativeness facilitates resolution of the sister lineage to percomorpha with an anchored hybrid enrichment dataset. *Molecular Phylogenetics and Evolution* 110: 27-38
38. 2016. Dornburg, A., Tamagnon, J., Townsend, J.P. PhyInformR: Phylogenetic experimental design and phylogenomic data exploration. *BMC Evolutionary Biology* 16 (1): 262
37. 2016. Dornburg, A., Forrestel, E., Moore, J.A., Iglesias, T.L., Jones, A., Rao, L., Warren, D.L. Fish at night: what we don't know. Assessing sampling biases across studies of diel activity patterns in marine ray-finned fishes (Actinopterygii). *Bulletin of Marine Science* (advance access)
36. 2016. Dornburg, A., Smith, C., Federman, S., Moore, J.A., Warren, D.L., Iglesias, T., Brandley, M.C., Watkins-Colwell, G.J., Lamb, A.D., Jones, A. Disentangling the influence of urbanization and invasion on endemic reptiles in tropical biodiversity hotspots: A case study of *Phyllodactylus martini* along an urban gradient in Curaçao. *Peabody Bulletin of Natural History* 57: 147-164
35. 2016. Dornburg, A., Federman, S., Eytan, R.I., Near, T.J. Cryptic species diversity in Sub-Antarctic islands: a case study of *Lepidonotothen*. *Molecular Phylogenetics and Evolution* 104: 32-43
34. 2016. Collins, S., Dornburg, A., Flores, J., Dombrowski, D., Lewbart, G. A comparison of blood gases, biochemistry, and hematology to ecomorphology in a health assessment of pinfish (*Lagodon rhomboides*). *PeerJ*: e2262
33. 2016. Federman, S., Dornburg, A., Daly, D.C., Downie, A., Yoder, A.D., Sargis, E.J., Perry, G. H., Donoghue, M.J., Richard, A. F., Baden, A. L. Implications

GRANTS & AWARDS

2016 TRICEM Seed Grant: Linking fish models to human health through the sequences of living fossils \$20000
 Role: Co-I (PI Jeff Yoder)
 2015 Yale G.G. Simpson Prize for best paper in Geology and Biology. \$3000
 2014 John Spangler Nicholas Prize in Ecology and Evolutionary Biology. \$1000
 2013 Yale Graduate Student Assembly conference travel award. \$400
 2012 European Congress of Ichthyology best student talk €200
 2011 National Science Foundation Dissertation Improvement Grant. \$14950
 2010 Lee Pierce Foundation Award for Research in Ecology and Evolutionary Biology. \$2500
 2008 Project DeepFin Student Exchange Travel Award. \$3000.
 2007 Undergraduate Biological and Mathematical Sciences Semester Fellowship. \$2000
 2007 Undergraduate Biological and Mathematical Sciences Summer Fellowship. \$3000
 2007 Center for Integrative Biotechnology Summer Fellowship. \$2500.
 2007 Undergraduate Zoology Scholarship. \$1000.
 2007 Second Place WSU Library Excellence Award \$750
 2007 First Place Undergraduate Research Poster at Competition \$400
 2007 First Place Wiley Exposition Graduate Student Poster Competition \$850
 2006 Undergraduate Biological and Mathematical Sciences Semester Fellowship. \$2000
 2006 Undergraduate Zoology Scholarship. \$1000
 2006 Undergraduate Biological and Mathematical Sciences Summer Fellowship. \$3000
 2006 Center for Integrative Biotechnology Summer Fellowship. \$2500
 2006 Third Place Undergraduate Research Poster at Competition. \$200

of lemuriform extinctions for the Malagasy flora. *Proceedings of Natural Academy of Sciences* 113: 5041-5046

Press: weather.com, smithsonianmag.com, iflscience.com, newscientist.com

32. 2016. Ahmad Sah, H. H., G.J. Watkins-Colwell, A. Dornburg, D.S. McLeod, L. Grismer, A. M. Bauer, R. J. A. Wahab and T. U. Grafe. The Amphibians, Reptiles and Fishes of the 2012 Bukit Pagon Expedition, Brunei Darussalam. *Peabody Bulletin of Natural History* 57: 97–114

31. 2015. Dornburg, A., Eytan, R.I., Federman, S., Pennington, J., Stewart, A.L., Jones, C.D., Near, T.J. Molecular data supports two species of *Cryodraco*. *Polar Biology* 39: 1369–1379

30. 2015. Federman, S., Dornburg, A., Downie, A., Richard, A., Daly, D., Donoghue, M.J.. The biogeographic origin of a radiation of trees in Madagascar: Implications for the assembly of a tropical forest biome. *BMC Evolutionary Biology* 15:216

29. 2015. Prum, R.* , Berv, J.*, Dornburg, A., Field, D.J., Townsend, J.P., Moriarty Lemmon, E., Lemmon, A.R. A comprehensive phylogeny of birds (Aves) using targeted next-generation DNA sequencing. *Nature* 526: 569–573 *Co-lead authors.

Press: scientificamerican.com, sci-news.com, pandasthumb.org, birdwatchingdaily.com, allaboutbirds.org, iflscience.com, hngn.com, nhregister.com, birdchannel.com, sciencedaily.com

28. 2015. Near, T., Dornburg, A., Harrington, R., Oliveira, C., Pietsch, T.W., Thacker, C.E., Satoh, T.P., Katayama, E., Wainwright, P.C., Eastman, J.T., Beaulieu, J.M. Identification of the notothenioid sister lineage illuminates the biogeographic history of an Antarctic adaptive radiation. *BMC Evolutionary Biology* 15:109 *Highly accessed Press: BMC blogs network*

27. 2015. Eytan, R.I., Evans, B.R., Dornburg, A., Lemmon, A.R., Moriarty Lemmon, E., Wainwright, P.C., and Near, T.J. Are 100 enough? Inferring acanthomorph teleost phylogeny using anchored hybrid enrichment. *BMC evolutionary biology* 1:113 *Highly accessed*

26. 2015. Iglesias, T.L., Dornburg, A., Brandley, M.C., Warren, D.L. Life in the unthinking depths: energetic constraints on encephalization in marine fishes. *Journal of Evolutionary Biology* 28: 1080–1090

25. 2015. Dornburg, A., Friedman, M., Near, T.J. Phylogenetic analysis of molecular and morphological data highlights uncertainty in the relationships of fossil and living species of Elopomorpha (Actinopterygii: Teleostei). *Molecular Phylogenetics and Evolution* 89:205–218

24. 2014. Dornburg, A., Moore, J., Beaulieu, J.M., Eytan, R.I., Near, T.J. The impact of shifts in marine biodiversity hotspots on patterns of range evolution: evidence from the Holocentridae (squirrelfishes and soldierfishes). *Evolution* 69:146–161

23. 2014. Near, T.J. Dornburg, A., Friedman, M. Phylogenetic relationships and timing of diversification in gonorynchiform fishes inferred using nuclear gene DNA sequences (Teleostei: Ostariophysi). *Molecular Phylogenetics and Evolution* 80:297–307

22. 2014. Dornburg, A., Townsend, J.P., Near, T.J. Phylogenetic informativeness approaches reconcile ray-finned fish divergence times. *BMC Evolutionary Biology*. 14 (1): 169. *Highly accessed*

INTERNAL SERVICE

2017- Advancing the mission of the museum task force

2015-current Chair Institutional Animal Care and Use Committee (IACUC), North Carolina Museum of Natural Sciences, Raleigh, NC

2015-current Head of IACUC Task Force, North Carolina Museum of Natural Sciences, Raleigh, NC

EXTERNAL SERVICE

Associate Editor
Molecular Phylogenetics and Evolution

Manuscript Reviewer (since 2010)
Systematic Biology
Molecular Biology and Evolution
Evolution
Molecular Ecology
Molecular Ecology Resources
Functional Ecology
BMC Evolutionary Biology
Integrative and Comparative Biology
Molecular Phylogenetics and Evolution
American Naturalist
Journal of Herpetology
Zoologica Scripta
Coral Reefs
Journal of Evolutionary Zoology Part B;
Molecular and Developmental Biology
Gene
Journal of Biogeography
PlosOne
Hydrobiologica
Zoologica
Scientific Reports
International Journal of Marine Science and Ocean Technology
Annals of Marine Biology
Bulletin of Marine Science

Grant Review Panels
National Science Foundation:
Systematics and Biodiversity

21. 2014. Price, S.A., Schmitz, L., Oufiero, C.E., Eytan, R.I., Dornburg, A., Smith, W.L., Friedman, M., Near, T.J., Wainwright, P.C. Two waves of niche-filling straddling the K-Pg boundary formed the modern reef fish fauna. *Proceedings of the Royal Society B* 281: 2014321

20. 2014. Moore, J. and Dornburg, A. Ingestion of fossil seashells, stones, and small mammal bones by gravid gopher tortoises (*Gopherus polyphemus*) in South Florida. *Peabody Bulletin of Natural History* 55: 55–63

19. 2013. Near, T.J., Dornburg, A., Tokita, M., Suzuki, D., Brandley, M.C., Friedman, M. Boom and bust: ancient and recent diversification in bichirs and roplefish (Polypteridae: Actinopterygii), a relictual lineage of ray-finned fishes. *Evolution* 68: 1014–1026

18. 2013. Friedman, M., Keck, B.P., Dornburg, A., Eytan, R.I., Martin, C.H., Hulsey, C.D., Wainwright P.C., T.J. Near. Molecular and fossil evidence place the origin of cichlid fishes long after Gondwanan rifting. *Proceedings of the Royal Society B* 280:20131733

17. 2013. Near, T.J., Dornburg, A., Eytan, R.I., Keck, B.P., Smith, W.L., Kuhn, K.L., Moore, J.A., Price, S.A., Burbrink, F.T., Friedman, M., Wainwright, P.M. Phylogeny and tempo of diversification in the superradiation of spiny-rayed fishes. *Proceedings of the National Academy Sciences* 110: 12738–12743.

Press: livescience.com, sciencedaily.com

16. 2013. Reynolds, R.G., Niemiller, M.L., Hedges, S.B., Dornburg, A., Revell, L.J. Molecular phylogeny and historical biogeography of West Indian boid snakes (*Chilabothrus*). *Molecular Phylogenetics and Evolution* 68: 461–470

15. 2013. Santini, F., Sorenson, L., Marcroft, T. Dornburg, A., Alfaro, M.E. A multilocus phylogeny of boxfishes (Aracanidae, Ostraciidae; Tetraodontiformes). *Molecular Phylogenetics and Evolution* 66: 153–160

14. 2012. Near, T.J., Eytan, R.I., Dornburg, A., Kuhn, K.L., Moore, J.A., Wainwright, P., Friedman, M., Davis, M., Smith, L. Resolution of ray-finned fish phylogeny and timing of diversification. *Proceedings of the National Academy Sciences* 109: 13698–13703

13. Dornburg, A., Moore, J.A., Webster, R., Warren, D.L., Brandley, M.C., Iglesias, T.L., Wainwright, P.C., and T.J. Near. Molecular phylogenetics of squirrelfishes and soldierfishes (Teleostei: Beryciformes: Holocentridae): reconciling more than 100 years of taxonomic confusion. *Molecular Phylogenetics and Evolution* 65: 727–738

12. 2012. Near, T.J., Dornburg, A., Kuhn, K.L., Eastman, J.T., Pennington, J.N., Patarnello, T., Zane, L., Fernandez, D.A., Jones, C.D. Ancient climate change, antifreeze, and the evolutionary diversification of Antarctic fishes. *Proceedings of the National Academy Sciences* 109:3434–3439.

Press: sciencecodex.com, dailymail.co.uk

11. 2011. Dornburg, A., Brandley, M.C., McGowen, M., Near, T.J. Rate Heterogeneity, Uncorrelated Relaxed-Clock Models, and Patterns of Molecular Evolution in Cetaceans. *Molecular Biology and Evolution* 29: 721–736

OUTREACH

2017 Designed and deployed special exhibit on the role of sharks in marine ecology and human health as part of “superhero night”. Exhibit involved participation by 12 interns, students, and volunteers, a SCUBA based program, three interactive tables, and audio visual displayed. Over 500 people interacted with this exhibit.

2017 Appeared on WRAL news to highlight the science of sharks as part of a superhero night promotion.

2015-current Lead tours of the research and collections facility to highlight the role of museums in facilitating science globally and the ongoing research efforts of the NC Museum of Natural Sciences. Tours are given for school groups ranging from middle school to college levels. An average of two tours are given per month.

2015-current Lead stream walks of the NC Museum of Natural Sciences Prairie Ridge Ecostation to demonstrate the surprising diversity in the urban landscape and the interconnectivity of aquatic animals with the urbanizing landscape.

2016-current Assist unit members under my supervision in coordinating the building of a citizen science web portal “CitSciScribe” that enables citizens to transcribe archived museum records and engage in multimedia presentations of the importance of natural history collections and spatial data: <http://citsciscribe.org/>

2015 Participant NSF funded IDigBio Broadening Diversity Workshop. Designed and led shadowing activity for students interested in marine research, participated in all day Q&A sessions, led tour of the fish research collection

2015 Gave 45 minute multimedia presentation on America's Pacific Coast at NC Museum of Natural Sciences WRAL Theater

10. 2011. Dornburg, A., Colosi, J.G., Maser, C., Reese, A.T., Watkins-Colwell, G.J. A survey of the Yale Peabody Museum collection of Egyptian mammals collected during the construction of the Aswan high dam: with an emphasis on material from the Yale University prehistoric expedition to Nubia (YUPEN) 1962-1965. *Peabody Bulletin of Natural History* 52:255-272
9. 2011. Dornburg, A., Sidlauskas, B., Sorenson, L., Santini, F., Near, T.J., Alfaro, M.E. The influence of an innovative locomotor strategy on the phenotypic diversification of triggerfishes (Family: Balistidae). *Evolution* 65:1912-1926
8. 2011. Dornburg, A., Warren, D.L., Iglesias, T.L., Brandley, M.C. Natural history observations of the ichthyological and herpetological fauna on the Island of Curaçao, Netherlands Antilles. *Peabody Bulletin of Natural History* 52:181-186
7. 2011. Dornburg, A., Beaulieu, J.M., Oliver, J.C., Near, T.J. Integrating fossil preservation biases in the selection of calibrations for molecular divergence time estimation. *Systematic Biology* 60: 519-527
6. 2010. Watkins-Colwell, G.J., Dornburg, A., Hawlena, D., Moore, J. The Amphibians and Reptiles of the Yale University Prehistoric Expedition to Nubia (YUPEN) 1962-1965. *Bulletin of the Peabody Museum of Natural History* (51):179-197
5. 2010. Weaver, R.E., Dornburg, A. New and noteworthy country records of Amphibians and Reptiles from Southeastern Washington State. *Herpetological Review*. 41(1):115-116
4. 2009. Alfaro, M. E., Santini, F., Brock, C., Alamillo, H., Dornburg, A., Rabosky, D.L., Carnevale, G., Harmon, L.J. Nine exceptional radiations plus high turnover explain species diversity in jawed vertebrates. *Proceedings of the National Academy Sciences* (106):13410-13414
Press: LA times
3. 2009. Dornburg, A., Moore, J., Watkins-Colwell, G.J. Distribution of freshwater fishes in Connecticut based on museum voucher specimens. *Bulletin of the Peabody Museum of Natural History* (50):347-379
2. 2009. Dornburg, A., Weaver, R.E. First Report of Scavenging by the Northern Pacific Rattlesnake (*Crotalus oreganus*). *Northwestern Naturalist* (90) 55-57
1. 2008. Dornburg, A. Santini, F., Alfaro, M.E. The influence of model-averaging on clade posteriors: an example using the triggerfishes (Family: Balistidae). *Systematic Biology* 57(6):905-919

MANUSCRIPTS SUBMITTED FOR REVIEW

1. Dornburg, A., Townsend, J.P., Wang, Z. Maximizing power in phylogenetics and phylogenomics: a perspective illuminated by fungal big data. Submitted to *Advances in Genetics*.

NON PEER REVIEWED MANUSCRIPTS

14. 2017. Dornburg, A., Townsend J.P. Extinguishing Outbreaks. *North Carolina Naturalist*. in press.
13. 2016. Dornburg, A. Ghosts of Madagascar. *North Carolina Naturalist*. 25: 8
12. 2016. Dornburg, A. How many species? *North Carolina Naturalist*. 24: 8

OUTREACH (Cont'd)

2015 Public lecture at the NC Museum of Natural Science Daily Planet Theater "How to eat underwater: lessons from fish"

2015 Assisted in surveying fish with volunteers at the Haw River State Park Bioblitz, NC

2009-2013 Volunteer in assisting in running Connecticut State-wide Envirothon workshops for high school students

2009-2013 Volunteered in ichthyological and herpetological surveys of Connecticut's Biological diversity during seasonal Bio-blitz events. Events included taking high school students on a NOAA trawl based fishing boat to sample fishes of Long Island Sound

2012 Restructured and led Connecticut state-wide Envirothon fish workshop for high school students

2012 Participated in beach cleanup events at Silver Sands State Park with volunteers from the Save the Sound foundation

2011 Led a group of volunteers to tag horseshoe crabs during mating season for project Limulus and researchers at Sacred Heart University

2008 Led native reptile and amphibians workshop: Washington State University Earth Day, April 22.

2007-2008 Secretary of Washington State University Roots and Shoots program participated in numerous environmental clean up and outreach events, including organizing the Universities first Earth Day event, lecture

11. 2016. Eberle, M and Dornburg, A. Straight Outta Collections: A swordfish bill. North Carolina Naturalist. 24: 11

10. 2016. Dornburg, A. Defining species has a big impact on research. Charlotte News and Observer: Science. Monday February 1st

9. 2015. Dornburg, A. Disentangling a rainforests roots. Charlotte News and Observer: Science October 17th

8. 2010. Watkins-Colwell, G.J. and Dornburg, A. Rattlers, peepers, and snappers. Herpetological . 41(1):126-127

7. 2007. Dornburg, A. and Weaver, R.E. *Pseudacris pacifica*. Herpetological Review: 38 (3):349-350

6. 2007. Weaver, R.E and Dornburg, A. *Charina bottae*. Herpetological Review: 38 (3): 354

5. 2007. Weaver, R.E. and Dornburg, A. *Hypsiglena torquata*. Herpetological Review: 38 (3): 355

4. 2007. Dornburg, A., Brock, C.D., Weaver, R.E. *Pseudacris pacifica*. Herpetological Review: 38(1): 99

3. 2007. Weaver, R.E. and Dornburg, A. *Bufo boreas*. Herpetological Review: 38(1): 96

2. 2007. Dornburg, A. and Weaver, R.E. *Chrysemys picta*. Herpetological Review: 37(4): 491

1. 2007. Dornburg, A. and Vander Ploeg, S.E. *Hypsiglena torquata*. Herpetologi-

TEACHING EXPERIENCE

2017 Lecture: Embracing extinction: macroevolutionary perspectives in conservation biology. For Conservation Health (VMC 991) North Carolina State University College of Veterinary Medicine (Spring Semester)

2014 Lecture: What the fossil record can tell us about the history of life on Earth, for Evolutionary Biology (EEB 225/525) Yale University (Spring semester)

2014 Graduate Teaching Assistant: Comparative Anatomy (EEB 290), Yale University (Spring semester)

2014 Graduate Teaching Assistant: Teaching laboratory session of Comparative Anatomy (EEB 290L), Yale University (Spring semester)

2013 Graduate Teaching Assistant: Teaching recitation session of Conservation Biology (EEB 115/FES 315), Yale University (Fall semester)

2012 Graduate Teaching Assistant: Teaching laboratory portion of Ichthyology (EEB 365/565), Yale University (Fall semester)

2012 Graduate Teaching Assistant: Ichthyology (EEB 360/560), Yale University (Fall semester)

2012 Lecture: The Evolution of Form and Function for Ichthyology (EEB 360/560), Yale University (Fall semester)

2011 Graduate Teaching Assistant: Teaching laboratory portion of Diversity of Life (EEB 123), Yale University (Spring semester)

2011 Lecture: The Diversity of Fishes, for Diversity of Life (EEB 123) Yale University (Spring semester)

2010 Graduate Teaching Assistant: Ichthyology (EEB 360/560), Yale University (Fall semester)

CERTIFICATIONS

PADI OPEN WATER SCUBA
PADI ADVANCED SCUBA
RESCUE DIVER
NITROX DIVER
DRY SUIT DIVER
NIGHT DIVER
AAUS SCIENTIFIC DIVER
CPR/FIRST AID

INTERNATIONAL FIELDWORK

2016 - February 21 – March 16, Okinawa Institute of Science and Technology (OIST), Onna-san, Okinawa, Japan. Led SCUBA based collections of coral reef fishes and CT scanning of coral reef fish brain anatomy in collaboration with Dr. Evan Economo (OIST) and Dr. Dan Warren and Dr. Teresa Iglesias (Australian National University)

2013 - August 12 – 29, University of Guam Marine Laboratory, Guam, United States.
Led SCUBA based collections of coral reef fishes for quantifying community-wide food web dynamics in collaboration with Dr. David Post and Dr. Thomas Near (Yale University), Dr. Jon Moore (Florida Atlantic University), Dr. Dan Warren and Dr. Teresa Iglesias (Australian National University), and Dr. Peter Wainwright (University of California, Davis). Funding provided by the Lee Pierce foundation and National Science Foundation

2011 - September 7 – 27, CARMABI, Curacao, Lesser Antilles.
Conducted SCUBA based collections of coral reef fishes for quantifying community-wide food web dynamics in collaboration with Dr. David Post and Dr. Thomas Near (Yale University), Dr. Jon Moore (Florida Atlantic University), Dr. Dan Warren and Dr. Teresa Iglesias (Australian National University), and Dr. Peter Wainwright (University of California, Davis). Funding provided by the Lee Pierce foundation and National Science Foundation. Additional collections of geckos were conducted for ongoing investigations of how the introduction of non-native geckos has altered community patterns of resource usage.

2010 Graduate Teaching Assistant: Teaching laboratory portion of Ichthyology (EEB 365/565), Yale University (Fall semester)
2010 Lecture: Form and Function in fishes for Ichthyology (EEB 360/560), Yale University (Fall semester)
2010 Graduate Teaching Assistant: Teaching laboratory portion of Diversity of Life (EEB 123), Yale University (Spring semester)
2010 Lecture: Patterns of Diversification in Early Animals, for Diversity of Life (EEB 123), Yale University (Spring semester)
2009 Graduate Teaching Assistant: Teaching recitation session of Introduction to Ecology and Evolutionary Biology (EEB 122), Yale University (Fall semester)

INTERNS AND TRAINEES

Interns

- Abigail Burrus, Salem College '14 (2016)
- Katerina Zapfe, NCSU '14 (2016)
- Willa Brooks, Emory U. '13 (2015-16)
- April Lamb, NCSU '15 (2015-16)
- Joseph Flores, UNC (2015)
- Tim Curtis UNCW '15 (2017)

Volunteers

- Richard Morris, Ph.D. (2016)
- Leela R. Rao, M.E.M. (2015)
- Rachel Webster, Ph.D. (2015)

INTERN AND TRAINEE AWARDS

2016. April D. Lamb NSF GRFP
Patterns of morphological and ecological disparity of reef fishes
2016. Willa R. Brooks, Lerner Gray Fund for Marine Research \$1000
Physiological Adaptations of Invasion: A comparison of brain morphology between invasive and native lionfish populations
2016. April D. Lamb NC State OUR grant \$1000
Decoding diversification: Examining patterns of morphological and ecological disparity of reef fishes
2016. April D. Lamb Harkema Scholarship \$500
Used to fund fieldwork in Curaçao
2015. April D. Lamb, Women Divers Hall of Fame Training Grant \$2000
2015. April D. Lamb Beneath the Sea Don Reynolds Scholarship \$1000

PRESENTATIONS

2017. Burrus, A. Dornburg, A. Federman, S. Lineage turnover and carbon storage in Madagascar. Lecture: Joint meeting of the Society for the Study of Evolution (SSE), the Society of Systematic Biologists (SSB), and the American Society of Naturalists (ASN); June 23-27, Portland, OR.

2017. Lamb, A. Near, T.J., Federman, S. Jones, C. Dornburg, A. Cradles and Museums of Antarctic Biodiversity. Poster: Meeting for the Society of Integrative and Comparative Biology, January 3-7, New Orleans LA.

2016. Alex Dornburg. Life on ice: the story of Antarctic fishes. Invited Lecture. Yale Peabody Museum 150 Year Anniversary Verrill Medal Symposium. 5 November, New Haven CT.

2016. Alex Dornburg. Adaptive radiation on ice, the evolutionary history of Antarctica's fishes. Invited Lecture. North Carolina State University College of Veterinary Medicine. 4 April, Raleigh, NC.

2016. Alex Dornburg, Jon A. Moore, Teresa Iglesias, Beth Forrestel, Andrew Jones, Leela Rao, Dan Warren. Welcome to the dark side: Nocturnality, bias, and the evolution of ray finned fishes. Invited Lecture. North Carolina State University Department of Applied Ecology. 18 February, Raleigh, NC.

INTERNATIONAL FIELDWORK (Cont'd)

2010 - August 11 – 25, CARMABI, Curacao, Lesser Antilles. Conducted SCUBA based collections of coral reef fishes in the family Holocentridae for phylogenetic and morphometric investigations into the tempo of diversification in collaboration with Dr. Thomas Near (Yale University) and Dr. Jon Moore (Florida Atlantic University). Additional collections of geckos were conducted to investigate how the introduction of non-native geckos has altered community patterns of resource usage in collaboration with Dr. Matthew Brandley (University of Sydney)

2009 - July 14 – 30, CARMABI, Curacao, Lesser Antilles. Conducted SCUBA based collections of coral reef fishes for DNA sequence analysis to resolve deep level relationships within acanthomorph fishes in collaboration with Dr. Thomas Near (Yale University), Dr. Peter Wainwright (University of California, Davis), and Dr. Leo Smith (Field Museum of Natural History)

DOMESTIC FIELDWORK

2016 – Continued collections (both boat and shore based) of oyster toadfish along the North Carolina Atlantic Coastline. Conducted numerous boat electroshock based surveys with the North Carolina Wildlife Resources Commission. Sampling efforts involved conducting surveys of sportfish and catfish to assess the impact of hand crank electro-fishing regulations and subsampling Long-Nose Gar for genetic analyses as part of an ongoing collaboration with Dr. Thomas Near at Yale University

2015. Alex Dornburg, Jon A. Moore, Teresa Iglesias, Beth Forrestel, Andrew Jones, Leela Rao, Dan Warren. Descending to the dark side: the role of nocturnality in the evolution of ray finned fishes. Symposium: 1st Bulletin of Marine Science Fish at Night Conference. 16-20 Nov., Miami, FL.

2014. Alex Dornburg. From cryptic species to adaptive radiation: Patterns of biodiversity in Antarctic fishes; Dec. 17, Raleigh Museum of Natural Sciences, NC. Invited lecture.

2014. Alex Dornburg. A fish-eyed perspective on the future of phylogenetics. Keynote: Yale Department of Ecology and Evolutionary Biology Annual Retreat; October 17, Orange, CT.

2014. Tony Su, Francesc Lopez-Giraldez, Alex Dornburg, and Jeffrey Townsend. PhyDesign: The impact of molecular evolutionary models on profiles of phylogenetic informativeness. Lecture: Joint meeting of the Society for the Study of Evolution (SSE), the Society of Systematic Biologists (SSB), and the American Society of Naturalists (ASN); June 20-24, Raleigh, NC.

2013. Jon A. Moore and Alex Dornburg. Ingestion of fossil seashells, stones, and small mammal bones by gravid gopher tortoises (*Gopherus polyphemus*) in South Florida. Lecture: 35th Annual Gopher Tortoise Council meeting, Oct 11-12, Ponte Vedra Beach, FL.

2013. Alex Dornburg, Ron Eytan, Elizabeth Spriggs, Thomas J. Near. Sister to Percomorpha? Symposium: 9th Indo-Pacific fish conference, June 24-28, Okinawa, Japan.

2013. Ron Eytan, Alex Dornburg, Thomas J. Near. Cryptic speciation in a clade of near-shore Caribbean reef fishes. Lecture: Meeting of the international biogeography society, January 9-13, Miami, FL.

2013. Alex Dornburg, Jon Moore, Jeremy Beaulieu, Thomas J. Near. Asymmetric responses to shifting biodiversity hotspots: evidence from squirrelfishes and soldierfishes. Lecture: Meeting of the international biogeography society, January 9-13, Miami, FL.

2012. Alex Dornburg, Jon Moore, Jeremy Beaulieu, Thomas J. Near. Asymmetric responses to shifting biodiversity hotspots: evidence from squirrelfishes and soldierfishes. Symposium: 14th European Congress of Ichthyology, July 3-8, Liege, Belgium.
Best student talk awarded.

2011. Alex Dornburg, Jeffrey Townsend, Thomas J. Near. Signal, Noise, and Primate Molecular Divergence Time Estimates. Lecture: Meeting for the Society of Integrative and Comparative Biology, January 3-7, Salt Lake City, UT.

2010. Alex Dornburg, Jeffrey Townsend, Thomas J. Near. Signal and Noise in Molecular Divergence Time Estimates. Symposium: Joint meeting of the Society for the Study of Evolution (SSE), the Society of Systematic Biologists (SSB), and the American Society of Naturalists (ASN); June 25-29, Portland, OR.

2009. Alex Dornburg, Brian Sidluskas, Francesco Santini, Laurie Sorenson, Michael E. Alfaro. The Effect of a Novel Locomotor Type on Subsequent Patterns of Morphological and Mechanical Evolution in Triggerfishes. Lecture: Joint meeting of the Society for the Study of Evolution (SSE), the Society of Systematic Biologists (SSB), and the American Society of Naturalists (ASN); June 12-16, Moscow, ID.

DOMESTIC FIELDWORK (Cont'd)

2015 – Conducted and led numerous collections (both boat and shore based) of oyster toadfish and pinfish along the North Carolina Atlantic Coastline. Sampling efforts involved both research staff under my supervision and undergraduate and graduate volunteers. Samples collected were used for collaborations with the Dr. Greg Lewbart at the NC State Veterinary School and Dr. Ron Eytan at Texas A&M University at Galveston

2015 – Conducted numerous boat electroshock based surveys with the North Carolina Wildlife Resources Commission. Subsampled Long-Nose Gar for genetic study as part of a collaboration with Dr. Thomas Near at Yale University

Summer 2008-Summer 2014 – Ongoing scuba based collections of Long Island Sound and Rhode Island to augment tissue samples in the Yale Peabody Museum

Summer 2008-Summer 2014 – Assisted on numerous NOAA trawls of Long Island Sound based out of Milford Ct, with researchers and student groups

Summer 2007-Summer 2008 – Assisted Graduate student Robert Weaver in Reptile and Amphibian surveys across Eastern Washington State

2009. Alex Dornburg, Brian Sidluaskas, Francesco Santini, Laurie Sorenson, Michael E. Alfaro. Patterns of Morphological and Mechanical Evolution in Triggerfishes. Lecture: Meeting for the Society of Integrative and Comparative Biology, January 3-7, Boston, MA.

2008. Alex Dornburg, Francesco Santini, Michael E. Alfaro. Model Averaging and Phylogenetic Inference. Invited Lecture: August 6. University of California Los Angeles.

2008. Alex Dornburg, Francesco Santini, Laurie Sorenson, Michael E. Alfaro. The Evolutionary History of the Triggerfishes (family Balistidae) with a comparative study of fin morphology and mechanics. Lecture: Meeting for the Society of Integrative and Comparative Biology, January 3-6, San Antonio, TX.

2008. Michael E. Alfaro, Chad D. Brock, Barbara Banbury, Alex Dornburg, Francesco Santini. Testing Macroevolutionary Hypotheses in Fishes: Examples from the Acanthomorpha. Symposium: Meeting for the Society of Integrative and Comparative Biology, January 3-6, San Antonio, TX.

2007. Alex Dornburg, Francesco Santini, Michael E. Alfaro. The Influence of Model Averaging on Clade Posteriors: An Example using the Triggerfishes (Family Balistidae). Lecture: Joint Meeting of Ichthyologists and Herpetologists, July 11-17 Saint Louis, MI.

2007. Alex Dornburg, Francesco Santini, Michael E. Alfaro. Model-Averaged Phylogenetic Inference of the Triggerfishes (Family: Balistidae). Poster: Wiley Exposition Graduate Student Poster Competition, Washington State University; March, Pullman, WA.
First place awarded.

2007. Alex Dornburg, Francesco Santini, Michael E. Alfaro. Model-Averaged Phylogenetic Inference of the Triggerfishes (Family: Balistidae). Poster: Meeting for the Society of Integrative and Comparative Biology, January 4-7, Phoenix, AZ.

2006. Alex Dornburg, Barbara L. Banbury, Michael E. Alfaro. Patterns of Genome Size Evolution Within the Tetraodontiformes. Poster: Center for Integrative Biotechnology Retreat; September 22, Moscow, ID.

2006. Alex Dornburg, Devin Drown, Michael E. Alfaro. The Effects of Model Averaging on Inference of Tetraodontiform Fish Phylogeny. Poster: Joint meeting of the Society for the Study of Evolution (SSE), the Society of Systematic Biologists (SSB), and the American Society of Naturalists (ASN); June 23-27, Stony Brook, NY.

2006. Alex Dornburg and Michael E. Alfaro. Opening Pandora's Boxfish: A Molecular vs. Morphological Analysis of the Interrelationships of Tetraodontiform Fishes. Poster: Undergraduate Research Poster Competition, Washington State University; April, Pullman, WA.
Third place awarded.

REFERENCES

Dr. Thomas J. Near, Professor of Ecology and Evolutionary Biology, Yale University, New Haven, CT 06520 USA, Phone: (203) 432-3002 email: thomas.near@yale.edu (doctoral mentor and co-author)

Dr. Michael E. Alfaro, Professor of Ecology and Evolutionary Biology, University of California, Los Angeles, CA 90095, Phone: (310) 794-5019 email: michaelalfaro@ucla.edu (doctoral committee member and co-author)

Dr. Jeffrey Townsend, Professor of Computational Biology and Bioinformatics, Yale University, New Haven, CT 06520, Phone: (203) 737-7042 email: jeffrey.townsend@yale.edu (doctoral committee member and co-author)