

Autumn-Lynn Harrison

Research Ecologist, Migratory Bird Center, Smithsonian Conservation Biology Institute
National Zoological Park, Smithsonian Institution, Washington, D.C. 202-633-4175

ACADEMIC APPOINTMENTS

Adjunct Assistant Professor, Duke University Nicholas School of the Environment, Division of Marine Science and Conservation

Affiliate Professor, George Mason University

EDUCATION

Ph.D., Ecology and Evolutionary Biology **2012**

University of California, Santa Cruz (UCSC), Santa Cruz, California

- *Dissertation*: A synthesis of marine predator migrations, distribution, species overlap, and use of Pacific Ocean Exclusive Economic Zones
- 1st Annual Denton Prize for Most Outstanding Graduate Research Symposium Presentation

Graduate Diploma of Science, Tropical Marine Ecology and Fisheries Science **2002**

James Cook University, Townsville, Australia

B.S. (Dual Degree), Fisheries and Wildlife Science / Environmental Science **2000**

Virginia Tech, Blacksburg, Virginia

- *Area of Concentration*: Wildlife Science / Aquatic Resources
- *Minors*: Biology and Chemistry
- *Summa cum laude*
- Outstanding Senior, Outstanding Math and Science Student, and Valedictory Speaker

School for Field Studies Certificate in African Wildlife Ecology and Management **1998**

Semester Field Studies Program, Center for Wildlife Management, Athi River, Kenya

PROFESSIONAL EXPERIENCE

Research Ecologist and Program Manager, Migratory Connectivity Project, Smithsonian Migratory Bird Center, (December 2014 to Present)

- Conduct ecological research on migratory animals, especially seabirds and shorebirds
- Plan and execute field expeditions to deploy tracking devices on 20 species of North American birds in Alaska, Alberta, Texas, South Carolina, and California
- Strategic development of the Migratory Connectivity Project, coordination of global partners
- Manage annual budget of \$500,000

Research Associate, Clemson University, Clemson, South Carolina, USA (2013-2014)

- Multi-scale habitat modeling of Caribbean seabirds; acoustic telemetry and habitat modeling of marine turtles
- Strategic development of the Open Parks Network, an initiative that provides information, tools, and solutions to the global protected areas community: <https://openparksnetwork.org/>

- Development of web-based geospatial project, searchable database, and online interpretation modules for over 1 million historical records digitized from U.S. National Parks

Senior Graphic Designer (2005-2013), Project Manager (2003-2005) and Project Assistant (2002-2003)
Society for Conservation Biology, Washington, D.C., USA

- Managed external review of *Conservation Biology*, served on Strategic Planning Committee
- Facilitated scientific and policy initiatives, maintained member, funder, and Board relationships, and aligned and designed marketing products, including development of branding guidelines and full production and writing of Annual Reports and international conference logos and products
- Led a relaunch of the Society Web site, including needs assessment, RFP development and vendor selection, strategy evaluation, and design and technology oversight

Assistant Research Specialist (2012) and Graduate Student Researcher, (2005-2012)

Department of Ecology and Evolutionary Biology, University of California, Santa Cruz, USA

- Researcher with the Tagging of Pacific Predators (www.topp.org)
- Analyzed 10 years of tracking data for 23 species of marine predators in the Pacific Ocean
- Results contributed to many national and international initiatives, including Convention on Biological Diversity efforts to identify ecologically significant areas in the high seas

Marine Mammal Ecology Field leader (Spring 2010) and Field Crew Member (Winter 2008)

San Nicolas Island, Channel Islands, California, USA

- Mark-recapture resights of flipper tags for all northern elephant seal colonies on San Nicolas Island
- Electronic tag recovery from California sea lions

Marine Mammal Ecology Field leader (Summer 2008) and Field Crew Member (Summer 2007)

Kleinsee Cape fur seal colony, DeBeers Diamond Mine, Kleinsee, South Africa

- Electronic tag deployment and subsequent data analysis of habitat use and dive patterns of Cape fur seals off the west coast of South Africa

Research Associate (Contract, 2003-2005)

The Nature Conservancy, Arlington, Virginia, USA

- Managed creation of edited volume on landscape connectivity and wildlife corridors from the book's prospectus to its final publication. *Connectivity Conservation*, K.C. Crooks and M.A. Sanjayan, editors. Cambridge University Press: Cambridge, UK. 2006.

Coral Reef Fisheries Graduate research (2001-2002)

Orpheus Island Research Station, Great Barrier Reef, and James Cook University, Townsville, Australia

- Assessed relationship between coral reef fish abundance and diversity and coral reef habitat composition and complexity on reefs surrounding Orpheus Island, Great Barrier Reef

Wetland Lab Technician (September 2000-January 2001)

University of Virginia, Charlottesville, Virginia, USA

- Analyzed salt marsh primary production, Virginia Coastal Reserve NSF Long-Term Ecological Research Project, Chesapeake Bay

Oceanographic Data Analyst (Summer 2000)

NOAA Great Lakes Environmental Research Lab, Ann Arbor, Michigan, USA

- Analyzed 17-year oceanographic dataset from Great Lakes off-shore buoys
- Participated in research cruises deploying/retrieving oceanographic buoys and temperature meters in

Lake Michigan

Environmental Research Intern (Summer 1999)

Metropolitan Washington D.C. Council of Governments, Washington, D.C., USA

- Created, delivered, and analyzed a survey of local and federal agencies in the D.C. metropolitan region to assess the level of participation in the U.S. Department of Energy Alternative Fuels Partnership and their satisfaction with alternative fuel vehicle technology
- Presented results to E.P.A. and contributed to continued accreditation of Washington D.C. metropolitan area in the partnership

Undergraduate research (1998)

Southern and Central Kenya

- Researched the social and ecological effects of designating a wildlife migration corridor through Maasai land south of Nairobi National Park
- Conducted game counts, social surveys, and habitat and dwelling mapping

NSF REU Research Fellow (Summer 1997)

Horn Point Laboratory, University of Maryland Center for Environmental Science, Cambridge, MD, USA

- Compared the ecosystem services provided by reconstructed and natural wetlands
- Created and managed a system of experimental marsh mesocosms, and conducted marsh habitat surveys in natural and reconstructed wetlands on the Chesapeake Bay, Maryland

Seasonal naturalist (Summer 1996)

Pocomoke River [Maryland] State Forest and Park, Snow Hill, Maryland, USA

- Gave over 500 interpretive talks, led over 75 canoeing trips and over 50 hikes
- Wrote press releases and newsletter articles and maintained trails and campsites
- Trained in Scales and Tales Program, Project Wild, and Project Wet

SCIENTIFIC PUBLICATIONS**PEER-REVIEWED JOURNALS**

1. *In Press*: Kirkman, S., Costa, D.P., **Harrison, A.-L.**, Kotze, D., Oosthuizen, H., Weise, M., Botha, J., Arnould, J.A. Dive behaviour and foraging effort of female Cape fur seals *Arctocephalus pusillus pusillus*. *Royal Society Open Science*.
2. *In Press*: Dunn, D.D.* and **Harrison, A.-L.*** (Co-first authors) and 51 co-authors. The importance of migratory connectivity to global ocean policy. *Proceedings of the Royal Society B*.
3. Sequeira, A. M. M., Heupel, M. R., Lea, M.-A., Eguíluz, V. M., Duarte, C. M., Meekan, M. G., Thums, M., Calich, H. J., Carmichael, R. H., Costa, D. P., Ferreira, L. C., Fernández-Gracia, J., Harcourt, R., **Harrison, A.-L.**, Jonsen, I., McMahon, C. R., Sims, D. W., Wilson, R. P., and Hays, G. C.. 2019. The importance of sample size in marine megafauna tagging studies. *Ecological Applications* 29(6):e01947. 10.1002/eap.1947
4. Hays G.C., Bailey H., Bograd S.J., Bowen W.D., Campagna C., Carmichael R.H., Casale P., Chiaradia A., Costa D.P., Cuevas E., de Bruyn P.J.N., Dias M.P., Duarte C.M., Dunn D.C., Dutton P.H., Esteban N., Friedlaender A., Goetz K.T., Godley B.J., Halpin P.N., Hamann M., Hammerschlag N., Harcourt R., **Harrison A.-L.**, Hazen E.L., Heupel

- M.R., Hoyt E., Humphries N.E., Kot C.Y., Lea J.S.E., Marsh H., Maxwell S.M., McMahon C.R., Notarbartolo di Sciara G., Palacios D.M., Phillips R.A., Righton D., Schofield G., Seminoff J.A., Simpfendorfer C.A., Sims D.W., Takahashi A., Tetley M.J., Thums M., Trathan P.N., Villegas-Amtmann S., Wells R.S., Whiting S.D., Wildermann N.E., Sequeira A.M.M. (2019). Translating marine animal tracking data into conservation policy and management. *Trends in Ecology and Evolution*
5. **Harrison, A.-L.**, D.P. Costa, A.J. Winship, S.R. Benson, S.J. Bograd, M. Antolos, A.B. Carlisle, H. Dewar, P.H. Dutton, S.J. Jorgensen, S. Kohin, B.R. Mate, P.W. Robinson, K.M. Schaefer. S.A. Shaffer, G.L. Shillinger, S.E. Simmons, K.C. Weng, K.M. Gjerde, B.A. Block. 2018. The political biogeography of migratory marine predators. *Nature Ecology & Evolution*. 10.1038/s41559-018-0646-8
 6. Ng, J.W., E.C. Knight, A.L. Scarpignato, **A.-L. Harrison**, E.M. Bayne, P.P. Marra. 2018. First full annual cycle tracking of a declining aerial insectivorous bird, the Common Nighthawk (*Chordeiles minor*), identifies migration routes, nonbreeding habitat, and breeding site fidelity. *Canadian J. of Zoology*. 96(8): 869-875
 7. Poli, C.L., **A.-L. Harrison**, A. Vallarino, P.D. Gerard, P.G.R. Jodice. 2017. Dynamic oceanography determines fine scale foraging behavior of Masked Boobies in the Gulf of Mexico. *PLoS One*. 12(6): e0178318.
 8. Ogburn M.B., **Harrison A.-L.**, Whoriskey F.G., Cooke S.J., Mills Flemming J.E., Torres L.G. 2017. Addressing Challenges in the Application of Animal Movement Ecology to Aquatic Conservation and Management. *Frontiers in Marine Science*. 4:70.
 9. Scarpignato A.L., **A.-L. Harrison**, D.J. Newstead, L.J. Niles, R.R. Porter, P.P. Marra. 2016. Field-testing a new miniaturized GPS-Argos satellite transmitter (3.4g) on migratory shorebirds. *Wader Study*.
 10. O'Bryan, C.J., R.F. Baldwin, J.A. Homyack, Y. Kanno, **A.-L. Harrison**. 2016. Novel habitat use supports population maintenance in a reconfigured landscape. *Ecosphere*. 7(3):e01228. 10.1002/ecs2.1228.
 11. Block, B.A., I. D. Jonsen, S. J. Jorgensen, A. J. Winship, S. A. Shaffer, S. J. Bograd, E. L. Hazen, D. G. Foley, G. A. Breed, **A.-L. Harrison**, J. E. Ganong, A. Swithenbank, M. Castleton, H. Dewar, B. R. Mate, G. L. Shillinger, K. M. Schaefer, S. R. Benson, M. J. Weise, R. W. Henry, D. P. Costa. 2011. Tracking apex marine predator movements in a dynamic ocean. *Nature*. 475:86-90.
 12. Costa, D.P., P.W. Robinson, J.P. Arnould, **A.-L. Harrison**, S.E. Simmons, J.L. Hassrick, A.J. Hoskins, S.P. Kirkman, H. Oosthuizen, S. Villegas-Amtmann, and D.E. Crocker, 2010. Accuracy of ARGOS locations of pinnipeds at-sea estimated using fastloc GPS. *PLoS One*, 5(1), e8677.
 13. **Harrison, A.-L.** 2006. Who's who in *Conservation Biology*—An authorship analysis. *Conservation Biology*. 20(3):652-657.
 14. Berkson, J. B. and **A.-L. Harrison**. 2002. Refocusing natural resource management: A multidisciplinary road to reality. *Journal of College Science Teaching*. XXXI(7):464-469
 15. Berkson, J. B. and **A.-L. Harrison**. 2001. An integrative capstone class for the conservation biology curriculum. *Conservation Biology*. 15(5):1461-1463

BOOK CHAPTERS

1. Marra, P.P., E. Cohen, **A.-L. Harrison**, C.E. Studds. M. Webster. 2019. Migratory Connectivity. *In: Encyclopedia of Animal Behavior*, 2nd Edition (Jae Choe, Editor-in-Chief). Academic Press, Elsevier. Pp. 3048
 2. **Harrison, A.-L.** and K. J. Bjorndal. 2006. Connectivity and wide-ranging species in the ocean. *In: Connectivity Conservation* (K.R. Crooks and M. Sanjayan, editors). Cambridge University Press: Cambridge, UK.
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CONSERVATION POLICY AND MANAGEMENT

1. **Member**, IUCN World Commission on Protected Areas Connectivity Conservation Specialist Group and Marine Connectivity Working Group (2019-)
2. **Advisory Board Member, MiCO (Migratory Connectivity in the Ocean Project)**, a multi-million dollar project to create a global database of marine migratory connectivity to inform global ocean policy and management, funded by the International Climate Initiative and led by the Global Ocean Biodiversity Initiative and Duke University (2017-2020)
3. **Panelist, United Nations Intergovernmental Conference (First Session)** on an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (General Assembly resolution 72/249). Presented Harrison et al. 2018. September 7, 2018.
4. **Panelist**, session on transboundary cooperation, governance, and international policy, AAAS Symposium on *Ecosystem Services, from concept to policy*. Presentation: Multi-cultural, multi-jurisdictional management of migratory species. Washington, D.C. May 19, 2017.
5. **Panelist, United Nations**, “*Making Connections: Cultural ecological and legal connectivity between national jurisdictions and areas beyond national jurisdiction.*” Side event of the 3rd Session of the Preparatory Committee established by the United Nations General Assembly on the elements of a draft text of an internationally legally binding instrument and sustainable use of marine biodiversity of areas beyond national jurisdiction. March 27, 2017.
6. **Policy Brief**. Dunn, D.C., G.O. Crespo, M. Vierros, D. Freestone, E. Rosenthal, S. Roady, A. Alberini, **A.-L. Harrison**, A. Cisneros, J.W. Moore, M.R. Sloat, Y. Ota, R. Caddell, P.N. Halpin. 2017. Adjacency: How legal precedent, ecological connectivity, and Traditional Knowledge inform our understanding of proximity. Part of the Nereus Scientific & Technical Briefs on Areas Beyond National Jurisdiction (ABNJ) Series. Available: <http://www.nereusprogram.org/category/policy-briefs/>
7. **Invited Scientific Expert**, UNESCO Marine World Heritage Workshop, Paris, France (2015)
8. **Invited Scientific Expert**, Convention on Biological Diversity Workshop to facilitate the description of Ecologically or Biologically Significant Marine Areas in the North Pacific Region. Moscow, Russia (2013)
9. **IUCN Technical Report**. Dunn, D.C. (ed.), J. Ardron, N. Ban, N. Bax, P. Bernal, S. Bograd, C. Corrigan, P. Dunstan, E. Game, K. Gjerde, H. Grantham, P.N. Halpin, **A.-L. Harrison**, E. Hazen, E. Lagabriele, B. Lascelles, S. Maxwell, S. McKenna, S. Nicol, E., Norse, D. Palacios, L. Reeve, G. Shillinger, F. Simard, K. Sink, F. Smith, A. Spadone, M. Würtz. 2011. Ecologically or Biologically Significant Areas in the Pelagic Realm: Examples & Guidelines. Gland, Switzerland: IUCN. 44 pp.
10. **Invited Workshop Participant & Presenter**, Identifying Ecologically or Biologically Significant Areas in the Pelagic Realm: Examples & Guidelines, Victoria, Canada (2011)
11. **Invited Workshop Participant & Presenter**: Presentation: Modelling ocean region occupancy. BirdLife International Workshop, Habitat Modelling using Satellite Tracking Data: A workshop to advance this process. Coimbra, Portugal (2011)
<http://datazone.birdlife.org/userfiles/file/Marine/CoimbraHabitatModellingReport.pdf>
12. **Science Board Member**, Global Ocean Biodiversity Initiative (2009-2010)
13. **IUCN Technical Report**. Ardron, J. D. Dunn, C. Corrigan, K. Gjerde, P.N. Halpin, J. Rice, E. Vanden Berghe, M. Vierros, J. Cleary, E. Fujioka, B. Best, J. Roberts, A. Boustany, **A.-L. Harrison**, B. Lascelles, L. Fishpool, P. Dunstan, K. Kaschner, S. McKenna, A. Hemphill, M. Clark, M. Consalvey, A. Rowden. 2009. Defining ecologically or biologically significant areas in the open oceans and deep seas: Analysis, tools, resources and illustrations.

A background document for the CBD expert workshop on scientific and technical guidance on the use of biogeographic classification systems and identification of marine areas beyond national jurisdiction in need of protection. Ottawa, Canada 29 September – 2 October 2009

14. **Invited Workshop Participant & Presenter.** BirdLife International Workshop on Using Tracking Data to Identify Marine Important Bird Areas Chizé, France (2009)
15. **Facilitator,** IUCN Global Mammal Assessment Cetacean Red Listing Workshop, LaJolla, California, USA (2007)

SCIENTIFIC PRESENTATIONS

SYMPOSIA AND WORKSHOP LEADERSHIP

- **Workshop convener:** On transboundary conservation options for migratory marine predators in the high seas. *Species on the Move*, Kreuger National Park, South Africa (2019)
- **Symposium Co-organizer:** *Migratory Connectivity of Alaskan Birds* 137th American Ornithological Society Meeting, Anchorage, Alaska, USA (2019)
- **Symposium Co-organizer:** *Despite what you've heard, conservation success in the Chesapeake Bay.* 25th International Congress for Conservation Biology Baltimore, Maryland, USA (2013)
- **Workshop Co-convener,** *World Seabird Conference Legacy Workshop* 1st World Seabird Conference, Victoria, British Columbia, Canada (2010)
- **Symposium Co-organizer,** *Maintaining connections: The importance of connectivity for conservation.* 17th Annual Meeting of the Society for Conservation Biology, Duluth, MN, USA (2003)

CONFERENCE PRESENTATIONS (Presenter)

1. Shaffer, S.A. and **Harrison, A.-L.** When the Pacific is not a barrier: Annual movements of seabirds across the Pacific Ocean. *Invited symposium presentation.* 137th American Ornithological Society Meeting, Anchorage Alaska, USA (2019)
2. **Harrison, A.-L.,** A.S. Scarpignato, and P.P. Marra. Migratory Connectivity of Alaskan Birds: Closing synthesis and gap analysis. *Invited symposium presentation.* 137th American Ornithological Society Meeting, Anchorage Alaska, USA (2019)
3. **Harrison, A.-L.** and S. Poulin. Bycatch of banded seabirds in the Pacific Ocean, 1945-2018. *46th Pacific Seabird Group, Lihue, Hawaii. March, 2019*
4. **Harrison, A.-L.,** J. Rausch, L. Tibbitts, P. Woodard, Y. Aubry, F. Smith, P. Brunner, D. Newstead. Migratory Connectivity of Black-bellied Plovers in the Americas. Western Hemisphere Shorebird Group Meeting. Paracas, Peru. November, 2017.
5. Carlisle, J.D. and **A.-L. Harrison** (co-presenters), D. Newstead, S. Coates, A. Scarpignato, T. Keyes, and P. P. Marra. Migratory connectivity of Long-billed Curlews (*Numenius americanus*) across their range. North American Ornithological Congress, Washington, D.C., August 2016.
6. **Harrison, A.-L.** and A. Scarpignato. Connectivity of threat: Fishing entanglements of North American Banded Birds. North American Ornithological Congress, Washington, D.C., August 2016.
7. **Harrison, A.-L.,** Movement ecology as unifying theme in marine and terrestrial conservation science. *Invited Symposium.* 4th International Marine Conservation Congress, St. John's, Newfoundland, July 2016.

8. **Harrison, A.-L.**, An ode to the Pacific Ocean Biological Survey Program and its Biologists, 1963-1969. 2nd World Seabird Conference, Cape Town, South Africa, October 2015.
9. Rausch, J. **Harrison, A.-L.**, (co-presenters), F. Smith, P. Woodard, Y. Aubry, L. Tibbitts, and D. Ruthrauff. *Poster*. Migratory Connectivity of Black-bellied Plover (*Pluvialis squatarola*). 6th Western Hemisphere Shorebird Group Meeting, Wallops Island, Virginia, USA, September 2015.
10. **Harrison, A.-L.**, C. Poli, and P.G.R. Jodice. Multiscale habitat modeling in seabirds provides opportunities for conservation action. *Invited Symposium*. 2nd North America Congress for Conservation Biology, Missoula, Montana, USA, July 2014
11. **Harrison, A.-L.**, D.P. Costa, S.A. Shaffer, A.J. Winship, S.J. Bograd, S. R. Benson, H. Dewar, P. Dutton, S. J. Jorgensen, M.A. Kappes, S. Kohin, B. R. Mate, P.W. Robinson, G. L. Shillinger, S. Simmons, K. Weng, B.A. Block. National and International jurisdiction over the management of wide-ranging marine predators. *Poster*. Ocean Sciences Meeting, Honolulu Hawaii, February 2014
12. Gedan, K. and **A.-L. Harrison** (co-presenters). A historical perspective of Chesapeake Bay water quality, fisheries and watermen. *Invited Symposium*. 26th International Congress for Conservation Biology, Baltimore, Maryland, USA. July 2013.
13. **Harrison, A.-L.**, D.P. Costa, S.A. Shaffer, A.J. Winship, S.J. Bograd, S. R. Benson, H. Dewar, P. Dutton, S. J. Jorgensen, M.A. Kappes, S. Kohin, B. R. Mate, P.W. Robinson, G. L. Shillinger, S. Simmons, K. Weng, B.A. Block. International responsibilities for wide-ranging marine predators. 25th International Congress for Conservation Biology. Auckland, New Zealand. December 2011.
14. **Harrison, A.-L.**, D.P. Costa, B.A. Block, S. Shaffer, S. Bograd, S. Jorgensen, I. Jonsen, A.J. Winship. E. Hazen, D. Foley. Predator hotspots, and high seas marine conservation targets. 11th Student Conference on Conservation Science. University of Cambridge, Cambridge, England. March 2010.
15. Corrigan, C. and **A.-L. Harrison**. 2009. Marine Protected Areas and Global Marine Targets. Symposium: Measuring Progress Towards Achieving CBD Targets in the Lead up to 2010. *Invited Symposium*. 23rd Annual Meeting of the Society for Conservation Biology. Beijing, China. July 2009.
16. **Harrison, A.-L.**, J. P.Y. Arnould, S. Kirkman, D. Kotze, H. Oosthuizen, and D. P. Costa. Fine-scale at-sea movements, diving behavior, and habitat preferences of Cape fur seals. *Oral*. 18th Biennial Conference of the Society for Marine Mammalogy, Quebec City, Quebec, Canada. October 2009.
17. **Harrison, A.-L.**, J.P.Y. Arnould, H. Oosthuizen, S. Kirkman, D. Kotze, and D. P. Costa. Fine-scale at-sea movements of Cape fur seals. *Poster*. 13th South Africa Marine Science Symposium. Cape Town, South Africa, July 2008.
18. **Harrison, A.-L.**, S. Shaffer, and D.P. Costa. Who owns the oceans...and does it matter for conservation? 21st Annual Meeting of the Society for Conservation Biology, Port Elizabeth, South Africa. July 2007
19. **Harrison, A.-L.**, S.A. Shaffer, Y. Tremblay, H. Weimerskirch, D. Scott, D.R. Thompson, P.M. Sagar, H. Moller, G.A. Taylor, and D.P. Costa. Who Owns the Pacific? The use of Exclusive Economic Zones by Sooty Shearwaters. *Poster*. 3rd Annual UCSC Graduate Research Symposium, Santa Cruz, California, USA. May 2007.
20. Berkson, J.B., **A.-L. Harrison**, and M. Davis. *Will telling students the truth about conservation scare them away?* 17th Annual Meeting of the Society for Conservation Biology, Duluth, MN, USA. July 2003.

INVITED SEMINARS

1. *Opening Keynote: Perpetual Motion: The unfinished history of animal tracking.* AniMove Course, Yale University, June 3, 2019
2. **Translating animal tracking research into policy for migratory marine animals.** George Mason University, Departmental Seminar for Environmental Studies, April 3, 2019.
3. **Experience Migration.** Earth Optimism Summit. TED-style talk with live streaming to global public audiences and available online: https://www.youtube.com/watch?v=U03K_QJm0qU. April 22, 2017.
4. **Discovering unknown animal migrations.** The Springfield College Department of Biology and Chemistry, 20th Annual Britton C. & Lucille McCabe Lecture, Springfield, Massachusetts. April 12, 2017
5. **Tracking wide-ranging marine species to go from data to decisions.** Smithsonian Conservation Biology Institute Seminar Series, National Zoological Park, February 13, 2015
6. **Using technology to reveal the Serengeti of the Sea.** College of African Wildlife Management, Moshi, Tanzania. June 2014. <http://ukarimu-tz.blogspot.com/2014/06/dr-autumn-lynn-from-clemson-university-12.html>
7. **Tracking the great predators of the Pacific Ocean for ecological and conservation insights.** Clemson University Natural Resources Seminar Series, School of Agriculture, Forestry, and Environmental Sciences, Clemson University. 4 April, 2013.
8. **Mapping use of the high seas: The Tagging of Pacific Predators.** Brown Bag Lunch, IUCN Headquarters, Gland, Switzerland. 2010

GRANTS AND FELLOWSHIPS

\$67,744	Smithsonian Scholarly Studies Awards: The bigger they come, the farther they fall: How size-dependent underestimation of home ranges affects umbrella species conservation strategies (Co-PI with Justin Calabrese)	2019
\$5,000	Smithsonian Year of Music: The musical journals of migrating birds	2019
\$18,275	Experience the migration of Brown Pelicans of the Chesapeake Bay <i>Friends of National Zoo Conservation Grant</i>	2017
\$10,000	Seabirds Linking Parks and Protected Areas in the Caribbean and Gulf of Mexico <i>Clemson University Institute for Parks Research Grant</i>	2015
\$40,000	Dissertation Year Fellowship, <i>UCSC</i>	2011
\$126,000	NSF Graduate Research Fellowship	2005-08
\$20,000	STEPS Institute Fellowship in Interdisciplinary Environmental Research, <i>UCSC</i>	2005
\$25,000	Rotary International Ambassadorial Scholarship	2000–01
<i>Less than \$5,000</i>		
•	American Cetacean Society-Monterey Bay Chapter Fellowship	2010
•	Professional Development Award, UCSC Marilyn C. Davis Memorial Scholarships for Re-entry Women in Science and Engineering	2010
•	Center for Dynamics of the Environment at the Land-Sea Interface Award, UCSC	2007

TEACHING

Smithsonian Mason School of Conservation

- Instructor – *Ecology and Conservation of Migratory Birds (Marine bird conservation)* 2015, 2018

- Instructor – *AniMove: Animal Movement Analysis for Conservation (Marine instructor)* 2015
- Clemson University, Clemson SC** 2014
- Instructor – *Readings in Conservation Biology* (Graduate)
 - Invited Lecture – Quantitative ecology and population dynamics (Graduate): *Metapopulation dynamics*
 - Invited Lecture – International Protected Area Management (Undergraduate): *Marine Protected Areas*
- University of California, Santa Cruz, Santa Cruz, CA**
- Teaching Assistant and Section Instructor (three sections) – *Ecology and Evolution* 2012
 - Teaching Assistant and Lab/Field Instructor – *Marine Mammalogy* 2011
 - Teaching Assistant – *Concepts in Biology* 2006
- Virginia Tech, Blacksburg, VA**
- Course development – *The role of science in natural resource management* 1998-2000
-

STUDENT MENTORSHIP

2019-2020: Smithsonian Pre-doctoral Fellowship Advisor
Meridith Bartley, Penn State University

2018: University of Houston—Smithsonian Internship Mentor
Baiyinah Abdullah and **Leslie Zuniga**, Undergraduate Interns, University of Houston. Summer 2018
 Telling the stories of the Migratory Connectivity Project through online story maps. Conservation storytelling, spatial data and visualization, geography, the biology of migratory animals

2017: Smithsonian/National Zoological Park Fellowship Mentor
Sarah Poulin: Revealing historic bycatch of Pacific Ocean seabirds. Duke University, Summer 2017

2013-2014: M.S. Thesis Committee Member
Caroline Poli: Spatial ecology of masked boobies and brown pelicans in the Gulf of Mexico. Clemson University, December 2014

ADDITIONAL PROFESSIONAL SERVICE & ACTIVITIES

- **Member**, Smithsonian National Zoo & Conservation Biology Institute Animal Care and Use Committee (2019-2022)
- **Steering Committee Member**, Conservation Commons, Smithsonian Institution (2018-2019)
- **Facilitator**, Smithsonian Institution Conservation Commons Working Group, Washington, D.C. (2015)
- **Invited Capacity Building Workshop Leader**, Tarangire National Park, Tanzania. Developed and led two-week capacity building workshop for Tourism, Game, and GIS Wardens of Tanzania National Parks Authority (TANAPA) in interpretive design and marketing. (2014)

Media: Series of blog posts about the workshop by workshop attendees

- <http://ukarimu-tz.blogspot.com/2014/06/tanzania-national-parks-in.html>
- <http://ukarimu-tz.blogspot.com/2014/06/dr-autumn-lynn-from-clemson-university.html>
- <http://ukarimu-tz.blogspot.com/2014/06/more-from-lake-manyara-national-park.html>

- **Fulbright Homestay Host**, Sub-Saharan African Women Fulbright Re-entry and Leadership Conference, Clemson, SC, USA (2014)

REVIEWER (2005 - PRESENT)

Acta Oecologica; Biological Conservation; Conservation Biology; Ecology; Environmental Management; Global Change Biology; Global Ecology and Biogeography; Marine Ecology Progress Series, Proceedings of the Royal Academy of Science, B: Biological Sciences

- Maryland Avian Research and Conservation Fund for Youth, **Oversight and Selection Committee** (2019-)
- David H. Smith Conservation Research Fellowship Program
Semi-Finalist Selection Panelist (2014-2018) and **Reviewer** (2012-2018)
- Netherlands Organisation for Scientific Research (NWO) Veni grant in the Innovational Research Incentives Scheme (2018)
- **Smithsonian Channel Scientific Reviewer**, Nature Documentary TV Programs (2014-2017)
- **Smithsonian Ocean Portal**: ocean.si.edu (2018-2019)

SOCIETY MEMBERSHIPS AND PROFESSIONAL APPOINTMENTS

- Arctic Summer College Fellow (2018)
- Society for Conservation Biology (2002 – Present)
- Pacific Seabird Group
- Fellow, Institute for Parks, Clemson University (2013-Present)

PUBLIC OUTREACH

- **School Outreach**: Letters to a Pre-scientist pen-pal program matching middle school students with scientist pen pals. (2018-2019)
- **Expedition blogger**, Migratory Connectivity Project (2015-2018)
<http://www.migratoryconnectivityproject.org/expedition-blog/>
- **Public Outreach**: National Museum of Natural History Sant Ocean Hall Q?urious program, Ask a Scientist. Talked with 74 people who now have a better understanding of the types of animals that migrate, what is involved in tracking them, and why tracking them matters. August 21, 2018
- **Public Talk**, Murie Summer Evening Science Series, Denali National Park, 2018, June 22, 2018
- **Public Talk**, Strait Science Series, Nome, Alaska, June 7, 2018
- **Public Talk**, ConocoPhillips Alaska (Anchorage, Alaska) and ConocoPhillips Alpine Camp (North Slope, Alaska, 2015, 2016, 2017, 2018)
- **Public Talk**, Keynote talk at Chesapeake Audubon Annual Meeting, April 28, 2018
- **Public Talk**, Smithsonian Conservation Biology Institute, Front Royal Virginia Evening Lecture. October 10, 2017
- **School Outreach**: FIRST Lego League team, FaceTime interview with Silver Spring, Maryland FIRST Lego League Team (middle school students) as scientific expert on marine mammals, November 27, 2017

- <https://firstinspiresst01.blob.core.windows.net/fl/animal-allies-challenge-guide.pdf>
- **Public Talk**, Keynote Speaker Louisiana Ornithological Society Annual Fall Meeting. October 29, 2016
- **Public Talk**, Smithsonian Environmental Research Center Public Evening Lecture: The Serengeti of the Sea: Tracking the great migrations of marine predators. April 28, 2016.
- **Public Talk**, Talbot County Maryland Bird Club Invited Speaker, March 14, 2016
- **Training**: Strategic Storytelling Training, Georgetown University's Center for Social Impact Communication (2015)
- **Public Talk**, Cabrillo Marine Aquarium, San Pedro, California (2010)
Centers for Ocean Sciences Education Excellence (COSEE) Public Lecture Series
- **Student Outreach**: Presenter, Monterey Bay Student Oceanography Club, Monterey, California (2010)
- **Student Outreach**: Organizer, *Expanding Your Horizons* workshop to encourage high school girls in science and math, University of California, Santa Cruz, California (2008)
<http://eyh.ucsc.edu>
- **Exhibit Developer**, multimedia public outreach presentation, *In Antarctica* (2007), Seymour Marine Discovery Center, Santa Cruz, California, USA

MEDIA

- **Harrison et al. 2018**: Featured in multiple news outlets including: Forbes.com, Hakai Magazine, Radio New Zealand (broadcast interview), Mongabay, Scientific American, and others.
 - Filling in the gaps: Managing endangered species on the high seas, Mongabay
<https://news.mongabay.com/2018/11/filling-in-the-gaps-managing-endangered-species-on-the-high-seas/>
 - Greater protection needed for migrating ocean species, Radio New Zealand.
<https://www.radionz.co.nz/international/programmes/datelinepacific/audio/2018661941/greater-protection-needed-for-migrating-ocean-species>
- **Print**: *Smithsonian Scientists track Alaskan Shorebirds*. The Nome Nugget, July 29, 2017
- **Web**: The strange tale of the Pacific Ocean Biological Survey Program. JSTOR Daily. December 15, 2016
 - <https://daily.jstor.org/strange-tale-pacific-ocean-biological-survey-program/>
- **Web**: *Fishing gear entanglements of marine birds is focus of Smithsonian Ecologist's study*. SI Insider.
 - <http://insider.si.edu/2016/08/fishing-gear-deaths-of-marine-birds-is-focus-of-smithsonian-ecologists-study/>
- **Press Release**: Ghost bird takes flight, Wintering curlews of the Southeastern US.
 - <https://nationalzoo.si.edu/news/smithsonian-tracked-ghost-bird-takes-flight>
 - <http://news.discovery.com/animals/smithsonian-tracks-lone-ghost-curlews-migration-160413.htm>
 - <http://phys.org/news/2016-04-long-billed-curlew-illuminate-mysterious-migration.html>
- **Radio**: Prairie Naturalist Radio Program/Podcast, 91.3FM CJTR, Regina Saskatchewan, June 23, 2016
- **Radio**: KRBW, Barrow Alaska, Science talk radio interview on Migratory Connectivity Research in Arctic broadcast to Inuit villages on the North Slope, October 2015

- **Web:** Smithsonian Science News: Satellite tracking helps with curlew conservation (2015)
<http://smithsonianscience.si.edu/2015/05/satellite-tracking-helps-with-curlew-conservation/>
 - **Radio:** Delmarva Public Radio segment, Cleaning up the Bay (2013)
www.delmarvpublicradio.net/post/international-conservation-conference-cleaning-bay
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ADDITIONAL CERTIFICATIONS

PADI SCUBA Certification

Wilderness First Aid Training