
EDUCATION

PhD, Fisheries UNIVERSITY of ALASKA FAIRBANKS (UAF)	2019
— Collaborators: Anne H. Beaudreau (UAF), Lorenzo Ciannelli (OSU), Martin W. Dorn (AFSC, NOAA), Kirstin K. Holsman (AFSC, NOAA), Mary E. Hunsicker (NWFSC, NOAA), Franz J. Mueter (UAF), Terrance J. Quinn II (UAF), Richard N. Yamada (AK Charter Assoc.)	
MS, Marine Science MOSS LANDING MARINE LABORATORIES (MLML)	2015
Degree awarded by San José State University (SJSU)	
— Collaborators: Richard M. Starr (MLML), Scott L. Hamilton (MLML), James T. Harvey (MLML), Kristine M. Lesyna (CDFW), Paul M. Reilly (CDFW), Travis H. Tanaka (CDFW)	
BS, Biology SAN DIEGO STATE UNIVERSITY (SDSU)	2006
Emphasis: Marine Biology	

PROFESSIONAL EXPERIENCE (2006 to date)

COOPERATIVE INSTITUTE for CLIMATE, OCEAN, and ECOSYSTEM STUDIES (CICOES) GULF of ALASKA CLIMATE INTEGRATED MODELING (GOACLIM) PROJECT UNIVERSITY of WASHINGTON – Seattle, WA ALASKA FISHERIES SCIENCE CENTER, NOAA – Seattle, WA <i>Research Scientist</i>	2022 to present
COOPERATIVE INSTITUTE for CLIMATE, OCEAN, and ECOSYSTEM STUDIES (CICOES) UNIVERSITY of WASHINGTON – Seattle, WA ALASKA FISHERIES SCIENCE CENTER, NOAA – Seattle, WA ALASKA REGIONAL OFFICE, NOAA – Juneau, AK <i>Postdoctoral Scholar</i>	2020 to 2022
SCALE BACK CONSULTING, LLC – Anchorage, AK <i>Principal Investigator</i>	2020 to present
CA COLLABORATIVE FISHERIES RESEARCH PROGRAM (CCFRP) – Moss Landing, CA <i>Lead Scientist</i>	2011 to 2014
<i>Volunteer Coordinator</i>	2010 to 2011
<i>Science Crew</i>	2010
CALIFORNIA SEA GRANT – San Diego, CA <i>Extension Program Representative</i>	2010 to 2014
SAN DIEGO OCEANS FOUNDATION (SDOF) – San Diego, CA <i>Programs and Outreach Director</i>	2008 to 2010
<i>Marine Science Education Program Coordinator</i>	2008
MWR: COMMANDER FLEET ACTIVITIES – Sasebo, Japan <i>Head Lifeguard and Water Safety Instructor</i>	2007 to 2008
<i>Lifeguard</i>	2006 to 2007

TEACHING EXPERIENCE

AMERICAN FISHERIES SOCIETY – Virtual Workshop	2021
<i>Co-instructor: Spatiotemporal Analysis of Ecological Data</i>	
UNIVERSITY of ALASKA FAIRBANKS – Juneau, AK	
<i>Guest Lecturer: Making Ecological Inferences from Fisheries Data</i>	2018
<i>Teaching Assistant: Field Methods in Marine Ecology and Fisheries</i>	2017
UNIVERSITY of ALASKA SOUTHEAST: INTRO. to ALASKA FISHERIES – Juneau, AK	2016
<i>Guest Lecturer: Pacific Halibut Biology, Ecology, and Management</i>	
CA COLLABORATIVE FISHERIES RESEARCH PROGRAM – Moss Landing, CA	2011 to 2014
<i>Staff, Volunteer, and Participant Trainer: MPA Survey Objectives and Protocols</i>	
SAN DIEGO OCEANS FOUNDATION (SDOF) – San Diego, CA	
<i>Marine Science Educator: Various 5-week K-12 Modules</i>	2008 to 2010
<i>Citizen Science Instructor: SCUBA Survey Methods and Species Identification</i>	2008 to 2010

MENTORSHIP

Undergraduate Students

A. Aines (2013)	D. Duncan (2013)	L. Knopp (2009)	E. Schurig (2013)
D. Anaya (2013)	A. Feck (2009)	K. Kuhn (2008)	S. Saadat (2010-11)
K. Askeland (2010)	A. Gile (2015)	J. Li (2020-21)	P. Saengcharoentrakul (2021)
M. Bargas (2017)	C. Giordano (2014)	S. Link (2016)	N. Siababa (2014)
K. Beck (2014)	A. Hedger (2009)	S. Lomonico (2014)	E. Stollmeyer (2013)
E. Bjork (2008)	E. Hetherington (2009)	M. Mairz (2010)	H. Wayner (2016-17)
S. Briley (2008)	C. Homer (2018)	R. McCollough (2013)	D. Weir (2009)
K. Brown (2016)	C. Hope (2010)	P. Muehlenbeck (2012)	
A. Chorazyczewski (2014)	Z. Johanson (2016)	R. Rand (2011-12)	
C. Doles (2013)	A. Kamber (2017)	M. Schmidt (2012)	

Post-Baccalaureate Technicians

J. Antus (2009)	S. Robinson (2011)	A. Sloan (2014)
H. Heath (2013-14)	K. Ros (2010)	

Graduate Students

G. Hunt (2015)	H. Delgado-Nordmann (2016)
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GRANTS AND FELLOWSHIPS

Magnuson-Stevens Act Implementation, Pls: J. Thorson, J. Pirtle, T. Essington – \$229,306	2020 to 2022
California Sea Grant Program Development Award (WSN) – \$4,000	2021
Northern Gulf of Alaska Applied Research Award – \$10,000	2018 to 2019
Rasmuson Fisheries Research Center Graduate Fellowship – \$78,901	2017 to 2019
Pollock Conservation Cooperative Research Center, PI: A. Beaudreau – \$201,516	2015 to 2019
SJSU Associated Students Advocacy Award – \$500	2014
SJSU Graduate Equity Fellowship – \$3,000	2013 to 2014
Santa Monica Seafood's Responsible Sourcing Vendor Partner Grant (CCFRP) – \$15,000	2013 to 2014
Clarence F. and Lyle V. Burmahln Scholarship – \$500	2013
Dr. Earl M. Myers and Ethel M. Myers Oceanographic and Marine Biol. Trust Grant – \$1,500	2013
MLML Scholar Award: Michael Lee Environmental Foundation – \$2,200	2013
Xiphias Martin Scholarship: John H. Martin Family – \$500	2013
Lucille and David Packard Foundation Research and Travel Grant – \$1,000	2013
CSU Council on Ocean Affairs, Science, and Technology Graduate Student Award – \$3,000	2013
California Sea Grant: Program Development Award (SDOF) – \$9,900	2010

PUBLICATIONS

Published, In Press, or Accepted

- Barnes CL**, Essington TE, Pirtle JP, Rooper CN, Laman EA, Holsman KK, Aydin KY, and Thorson JT. 2022. Climate-informed models benefit hindcasting but present challenges when forecasting species-habitat associations. *Ecogr.* 2022:e06084.
- Dorn MW and **Barnes CL**. 2022. Time-varying predation as a modifier of constant natural mortality for Gulf of Alaska pollock. *Fish Res. VSI Natural Mortality*. 254(2022):106291.
- Grüss A, Thorson JT, Stawitz CC, Reum JCP, Rohan SK, and **Barnes CL**. 2021. Synthesis of interannual variability in spatial demographic processes supports the strong influence of cold-pool extent on eastern Bering Sea walleye pollock (*Gadus chalcogrammus*). *Progr Ocean*. 194(2021):102569
- Barnes CL**, Beaudreau AH, and Yamada RN. 2021. The role of size in trophic niche separation between two groundfish predators in Alaskan waters. *Mar Coast Fish*. 13:98–113. doi: 10.1002/mcf2.10141
- Barnes CL** ^, Beaudreau AH, Dorn MW, Holsman KK, and Mueter FJ. 2020. Development of a predation index to assess trophic stability in the Gulf of Alaska. *Ecol Appl*. 30(4):e02141. doi:10.1002/eap.2141
- Barnes CL** *, Beaudreau AH, Hunsicker ME, and Ciannelli L. 2018. Assessing the potential for competition between Pacific Halibut (*Hippoglossus stenolepis*) and Arrowtooth Flounder (*Atheresthes stomias*) in the Gulf of Alaska. *PLoS ONE*. 13(12):e0209402.
- Barnes CL** and Starr RM. 2018. Reproductive tactics of California Halibut (*Paralichthys californicus*): combining spawning season, interspawning interval, and batch fecundity to estimate annual reproductive output for a multiple-batch spawning fish. *CalCOFI Rep*. 59:102–114.
- Lesyna KM and **Barnes CL (corresponding author)**. 2016. Assessment of length- and age-at-maturity for California Halibut (*Paralichthys californicus*), including a histologically-based description of the reproductive cycle. *Calif Fish Game*. 102(3):79–99.
- Barnes CL**, Starr RM, and Reilly PN. 2015. Growth, mortality, and reproductive seasonality of California Halibut (*Paralichthys californicus*): a biogeographic approach. *CalCOFI Rep*. 56:110–118.
- Starr RM, Wendt DE, **Barnes CL**, Marks CI, Malone D, Waltz G, Schmidt KT, Chiu J, Launer AL, Hall NC, and Yochum N. 2015. Variation in responses of fishes across multiple reserves within a network of marine protected areas in temperate waters. *PLoS ONE*. 10(3):e0118502.
- Starr RM, Cortés J, **Barnes CL**, Green K, and Breedy O. 2012. Characterization of deepwater invertebrates at Isla del Coco National Park and La Gemelas Seamount, Costa Rica. *Int J Trop Biol*. 60(3):303–319.

In Revision, In Review, or Submitted

- Brodie S, Smith JA, Muhling BA, Kaplan IC, Barnett LAK, Carroll G, Fiedler P, Bograd SJ, Hazen EL, Jacox MG, Andrews KS, **Barnes CL**, Crozier L, Fiechter J, Fredston A, Haltuch MA, Harvey CJ, Holmes E, Karp MA, Liu OR, Malick MJ, Buil MP, Richerson K, Rooper CN, Samhuri J, Seary R, Selden RL, Thompson AR, Thorson J, Tommasi D, Ward EJ, and Zabel R. In revision. Recommendations for quantifying and reducing uncertainty in projections of species distributions. *Glob Change Biol*.
- Thorson JT, **Barnes CL**, Friedman ST, Morano JL, and Siple MC. In review. Seven examples of how spatially-varying slope models are essential for species distribution models.
-

PUBLICATIONS, CONT'D

In Preparation

Barnes CL, Dorn MW, Reum JCP, Essington TE, and Punt AE. In prep. The potential for trophic cascades in an ever-changing ecosystem recently impacted by marine heatwaves.

Holsman KK, **Barnes CL**, Aydin KY, Thorson JT, Zador S, Barbeaux SJ, Laurel BJ, Hurst TP, and Heintz RA. In prep. Patterns in foraging and energetics of mid-trophic level predators in the Bering Sea.

Barnes CL, Waltz GT, Hamilton SL, Ruttenberg BI, Starr RM, Wendt DE, and Ziegler SL. In prep. Synchrony as a measure of resilience for temperate groundfish communities.

AWARDS AND HONORS

Ecological Applications – Top 10 Most Downloaded Papers [^]	2020
American Fisheries Society, Western Division – Diversity and Inclusion Service Award	2021
American Institute of Fishery Biologists – W.F. Thompson Award (Best Student Paper from 2018)*	2019
UAF Dean's Recognition Award – Outstanding Graduate Student	2019
Wakefield Fisheries Symposium – Student Travel Award ⁷	2019, 2015
Western Groundfish Conference – First Place: Student Talk ⁴	2018
American Fisheries Society, AK Chapter – Student Travel Award ¹	2018, 2017, 2015
Western Groundfish Conference – Student Travel Award ²	2018, 2016, 2014, 2012
American Fisheries Society – Western Division Student Travel Award ³	2017
Western Groundfish Conference – Mirth Award ⁵ ; Second Place, Student Poster ⁶	2016
CSU Council on Ocean Affairs, Science, and Technology – Student Travel Award ⁹	2014
International Flatfish Symposium – Student Travel Award ⁸	2014
Monterey Bay National Marine Sanctuary Symposium – First Place, Student Poster ¹⁰	2013
SDSU Dean's List – Honors Recognition	2006, 2004

Superscripts correspond with items in 'PUBLICATIONS' and 'SELECTED PRESENTATIONS'

PRESENTATIONS

ECOSYSTEM STUDIES of SUBARCTIC AND ARTIC SEAS – Seattle, WA	2022
— Climate-informed models benefit hindcasting but present challenges for forecasting species-habitat associations	
ALASKA CHAPTER of the AMERICAN FISHERIES SOCIETY – Virtual	2022
WESTERN SOCIETY of NATURALISTS – Virtual	2021
— Model complexity has contrasting effects for hindcasting and forecasting species responses to climate change	
CENTER for the ADVANCEMENT of POPULATION ASSESSMENT METHODOLOGY – Virtual	2021
— Predation as a modifier of constant natural mortality for Gulf of Alaska pollock	
ALASKA MARINE SCIENCE SYMPOSIUM – Anchorage, AK	2020
PICES (North Pacific Marine Science Organization) – Victoria, BC	2019
— Development of a predation index to assess trophic stability in the Gulf of Alaska	
ALASKA CHAPTER of the AMERICAN FISHERIES SOCIETY – Sitka, AK	2019
— Spatiotemporal variation in consumption of Walleye Pollock by major groundfish predators in the Gulf of Alaska	
WAKEFIELD FISHERIES SYMPOSIUM – Anchorage, AK	2019
— Comparative resource use by two groundfish species in nearshore SE Alaska	

PRESENTATIONS, CONT'D

ALASKA CHAPTER of the AMERICAN FISHERIES SOCIETY – Sitka, AK	2019
INTERNATIONAL PACIFIC HALIBUT COMMISSION SEMINAR SERIES – Seattle, WA	2018
WESTERN GROUNDFISH CONFERENCE – Seaside, CA ²	2018
WESTERN DIVISION of the AMERICAN FISHERIES SOCIETY – Anchorage, AK ¹	2018
WESTERN SOCIETY OF NATURALISTS – Tacoma, WA	2018
— Assessing the potential for competition between Pacific Halibut and Arrowtooth Flounder in the Gulf of Alaska	
POLLOCK CONSERVATION COOPERATIVE RESEARCH CENTER – Anchorage, AK	2019, 18, 17, 16
RASMUSON FISHERIES RESEARCH CENTER – Anchorage, AK	2019, 18
ALASKA FISHERIES SCIENCE CENTER, NOAA: GROUNDFISH SEMINAR – Seattle, WA	2018
— Ecological interactions among major groundfish species in the Gulf of Alaska	
WESTERN GROUNDFISH CONFERENCE – Monterey, CA	2018
ALASKA MARINE SCIENCE SYMPOSIUM – Anchorage, AK	2017
ALASKA CHAPTER of the AMERICAN FISHERIES SOCIETY – Fairbanks, AK ¹	2017
— A comparative assessment of resource use by Pacific Halibut and Arrowtooth Flounder throughout the Gulf of Alaska	
AMERICAN FISHERIES SOCIETY: WESTERN DIV. STUDENT COLLOQUIUM – McCall, ID ³	2017
WESTERN SOCIETY of NATURALISTS Monterey, CA	
2016	
— A comparative assessment of resource use by Pacific Halibut and Arrowtooth Flounder: results from a small-scale field study	
ALASKA MARINE SCIENCE SYMPOSIUM – Anchorage, AK	2016
WESTERN GROUNDFISH CONFERENCE – Newport, OR ²	2016
— Calculating an index of predation to improve the stock assessment for Walleye Pollock in the Gulf of Alaska ⁴	
WESTERN GROUNDFISH CONFERENCE – Newport, OR ^{2, 5, 6}	2016
AMERICAN FISHERIES SOCIETY: ALASKA CHAPTER, STUDENT SYMPOSIUM – Juneau, AK	2015
WAKEFIELD FISHERIES SYMPOSIUM – Anchorage, AK ⁷	2015
— Growth, mortality, and reproductive seasonality of CA Halibut: a biogeographic approach ⁶	
ALASKA CHAPTER of the AMERICAN FISHERIES SOCIETY – Homer, AK ²	2015
— Effects of demography, trophic interactions, and the environment on major groundfish species in the Gulf of Alaska	
— Exploring environmental and demographic drivers of resource overlap among major species in the Gulf of Alaska	
INTERNATIONAL FLATFISH SYMPOSIUM – Cle Elum, WA ⁸	2014
— Age, growth, and reproductive potential of California Halibut	
MARINE: OCEANS COLLOQUIUM Moss Landing, CA	2014
MONTEREY BAY NAT'L MARINE SANCTUARY SYMP: SANCTUARY CURRENTS – Seaside, CA	2014
— Reproductive biology of California Halibut: results from the Central Coast	
MOSS LANDING MARINE LABORATORIES: OPEN HOUSE SEMINAR – Moss Landing, CA	2014
— Flatfish fecundity: evaluating the reproductive nature of a prolific spawner	
MPA COLLABORATIVE NETWORK	2014
— Key findings from monitoring Monterey Bay's marine protected areas	

PRESENTATIONS, CONT'D

WESTERN GROUNDFISH CONFERENCE – Victoria, Canada ²	2014
— MPA monitoring: more than just the latest and greatest in marine conservation trends	
WESTERN GROUNDFISH CONFERENCE Victoria, Canada	2014
WESTERN SOCIETY of NATURALISTS – Tacoma, WA ⁹	2014
— Reproductive biology of California Halibut: results from the Central Coast	
CA COLLABORATIVE FISHERIES RES. PROG. Half Moon Bay & Moss Landing, CA	2014, 13, 12
— Research objectives, data collection procedures, data analyses and results	
— MPA monitoring, project results, and data interpretations	
CALIFORNIA DEPARTMENT of FISH and WILDLIFE – Belmont, CA	2013
— CCFRP workshop: objectives, results, and interpretations	
MONTEREY BAY NAT'L MAR. SANCTUARY SYMP: SANCTUARY CURRENTS – Seaside, CA	2013
— Reproductive characteristics of California Halibut off central California, with comparisons to the Southern California Bight ¹⁰	
MOSS LANDING MARINE LABORATORIES, OPEN HOUSE SEMINAR – Moss Landing, CA	2013
— Spawning characteristics of California Halibut in Monterey Bay	
WATSONVILLE AREA TEENS CONSERVING HABITATS PROGRAM – Watsonville, CA	2013
— Reproductive characteristics of California Halibut off central California, with comparisons to the Southern California Bight	
WESTERN SOCIETY of NATURALISTS – Oxnard, CA	2013
— Reproductive biology of California Halibut: evidence from the Central Coast	
EXPANDING YOUR HORIZONS NETWORK – Monterey, CA	2012
— Fishing for our future: fisheries biology and resource management	
MONTEREY BAY NAT'L MARINE SANCTUARY SYMP: SANCTUARY CURRENTS – Seaside, CA	2012
— Collaborative fisheries research: a transition from data-poor to data-rich management	
MOSS LANDING MARINE LABORATORIES, OPEN HOUSE SEMINAR Moss Landing, CA	2012
— Fishing for science: the California Collaborative Fisheries Research Program	
WESTERN GROUNDFISH CONFERENCE – Seattle, WA ²	2012
— Collaborative fisheries research: a transition from data-poor to data-rich management	
SAN DIEGO BAY SYMPOSIUM – San Diego, CA	2009
— SDOF's White Seabass Restoration Project and its relevance to San Diego Bay	

PROFESSIONAL SERVICE

PEER REVIEWS

Ecosphere, Exxon Valdez Oil Spill Trustee Council, Fisheries Research, Fishery Bulletin, Frontiers in Marine Science, ICES Journal of Marine Science, Journal of Fish Biology, PLoS ONE, Bulletin of the Southern California Academy of Sciences

AMERICAN FISHERIES SOCIETY

Diversity & Inclusion Committee 2021 to present

WESTERN GROUND FISH CONFERENCE, Steering Committee 2019 to present

AMERICAN FISHERIES SOCIETY, ALASKA CHAPTER

Diversity, Equity, and Inclusion Committee (Chair) 2018 to present

Program, Awards (co-Chair), and Entertainment Committees 2018 to 2019

Executive Committee 2015 to 2017

AMERICAN FISHERIES SOCIETY, WESTERN DIVISION

Diversity & Inclusion Committee 2018 to present

Annual Meeting Planning Committee 2021

WESTERN SOCIETY of NATURALISTS, Diversity, Equity, & Inclusion Committee 2018 to present

SKYPE A SCIENTIST, Volunteer 2018 to present

ALASKA FISHERIES SCIENCE CENTER (NOAA), Gender Equity Working Group 2021

UNIVERSITY OF ALASKA FAIRBANKS

Assistant Professor in Quantitative Fisheries Search Committee 2018 to 2019

Graduate Academic and Advising Committee 2017 to 2019

Professional Development Workshop Organizer 2018

SOUTHEAST ALASKA LGBTQIA+ ALLIANCE

Board Member 2018 to 2019

Volunteer 2015 to 2019

SITKA SOUND SCIENCE CENTER, Scientist in the Schools Volunteer 2018

PARTNERSHIP for INTERDISCIPLINARY STUDIES of COASTAL OCEANS, Volunteer 2018; 2013-14

ALASKA FISHERIES SCIENCE CENTER (NOAA), Bottom Trawl Survey Volunteer 2017

MOSS LANDING MARINE LABORATORIES

Curriculum Committee 2012 to 2014

Donations Committee Advisor ^a, Chair ^b ^a 2013-14, ^b 2011-12

Associated Student Body Vice President 2011 to 2012

MPA COLLABORATIVE NETWORK, Participant 2011 to 2014

TEACHER ENHANCEMENT PROGRAM, Marine Science Educator 2013

WATSONVILLE AREA TEENS CONSERVING HABITATS PROGRAM, Science Mentor 2012 to 2013

EXPANDING YOUR HORIZONS NETWORK, Young Women in Science Volunteer 2011 to 2013

MONTEREY BAY AQUARIUM, DSCVR Young Women in Science Mentor 2011 and 2013

SAN DIEGO STATE UNIVERSITY, Graduate Research Assistant 2010

SAN DIEGO SCIENCE & ENGINEERING FAIR, Professional Society Judge 2009 to 2010

SAN DIEGO COASTKEEPER, Outreach and Community Event Intern 2005 to 2006

PROFESSIONAL ASSOCIATIONS, TRAININGS, AND CERTIFICATIONS

500 QUEER SCIENTISTS: Member	2017 to present
500 WOMEN SCIENTIST, Alaska Chapter: Member	2017 to present
ALASKA CLIMATE INTEGRATED MODELING (ACLIM): Collaborator	2020 to present
ALASKA MARINE SAFETY EDU ASSOC: Cold Water Survival, Skiff Operator	2017, 2015
AMERICAN ACADEMY of UNDERWATER SCIENCES: Scientific Diver, Member	2010 to present
AMERICAN FISHERIES SOCIETY, WESTERN DIV. & AK CHAPTER: Member	2015 to present
AMERICAN INSTITUTE OF FISHERY RESEARCH BIOLOGISTS: Member	2019 to present
AMERICAN RED CROSS:	
CPR, AED, First Aid, Administering Emergency O ₂	2006 to 2015
Lifeguard and Water Safety Instructor; Fundamentals of Instructor Training	2006 to 2008
AMERICAN STATISTICAL ASSOCIATION: Alaska Chapter Member	2019 to present
CA DEPT. of BOATING and WATERWAYS: Boating Education Certificate	2011
CA OCEAN SCIENCE TRUST, CA Citizen Science Initiative: Participant	2014
CAREERSTONE GROUP, Managing Up: Workshop Participant	2021
COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE:	
Working with the IACUC; Field and Lab Animal Researchers	2015 to 2018
ECOLOGICAL SOCIETY of AMERICA: Member	2019 to present
EPSCoR, Mindful Leadership Creating a Diverse and Inclusive UA: Workshop Participant	2018
EQUAL EMPLOYMENT OPPORTUNITY COMM., Beyond the Binary: Workshop Participant	2021
MORALE, WELFARE, and RECREATION, COMM. FLEET ACT: Power Boat Operator	2007
NAT'L ASSOC. of UNDERWATER INSTRUCTORS: Master SCUBA Diver and Nitrox Diver	2010
NAT'L CENTER for ECOLOGICAL ANALYSIS and SYNTHESIS (NCEAS):	
Reproducible Research Techniques for Synthesis Workshop Participant	2019
NOAA Pride Employee Resource Group: Member	2020 to present
oSTEM: Member	2019 to present
PROFESSIONAL ASSOCIATION of DIVING INSTRUCTORS:	
Open Water, Advanced Open Water, and Rescue Diver; Dive Master	2006 to 2010
REEF CHECK CALIFORNIA: UPC, Algae, Invertebrate, and Fish Surveyor	2010
REEF ENVIRON. EDU. FDN: Marine Algal, Invertebrate, and Expert Fish Surveyor	2008
SACNAS Native Initiatives, Creating More Inclusive Spaces in STEM: Workshop Participant	2021
TRIMBLE: Intermediate Mapping and GIS Certificate	2011
UNDERGRAD. RES. OPPORTUNITIES CTR, CSU MONTEREY BAY: Mentor	2014
WESTERN SOCIETY of NATURALISTS: Member	2010 to present

REFERENCES AVAILABLE UPON REQUEST