# Cheryl L. Barnes, PhD (she | they)

Assistant Professor, Integrated Marine Fisheries Lab

Coastal Oregon Marine Experiment Station Department of Fisheries, Wildlife, and Conservation Sciences Hatfield Marine Science Center, Oregon State University 2030 SE Marine Science Dr | Newport, OR 97365

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w: cheryl-barnes.github.io

EDUCATION	
PhD, Fisheries – UNIVERSITY of ALASKA FAIRBANKS (UAF) College of Fisheries and Ocean Sciences, Juneau Campus	2019
MS, Marine Science – MOSS LANDING MARINE LABORATORIES (MLML) Degree awarded by San José State University (SJSU)	2015
BS, Biology – SAN DIEGO STATE UNIVERSITY (SDSU) Emphasis: Marine Biology	2006
PROFESSIONAL EXPERIENCE (2006 to Present)	
COASTAL OREGON MARINE EXPERIMENT STATION DEPARTMENT OF FISHERIES, WILDLIFE, AND CONSERVATION SCIENCES OREGON STATE UNIVERSITY [with support from Oregon Dept. of Fish and Wildlife] Assistant Professor in Marine Fisheries	2023-P
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 Research Scientist Postdoctoral Scholar	2022-2023 2020-2022
SCALE BACK CONSULTING, LLC – Anchorage, AK  Principal Investigator	2020-2023
UNIVERSITY of ALASKA FAIRBANKS – Juneau, AK  Research Assistant: Ecological interactions among groundfishes in the Gulf of Alaska  Teaching Assistant: Field Methods in Marine Ecology and Fisheries	2015-2019 2017
CA COLLABORATIVE FISHERIES RESEARCH PROGRAM (CCFRP) – Moss Landing, CA Lead Scientist Volunteer Coordinator Science Crew	2011-2014 2010-2011 2010
CALIFORNIA SEA GRANT – San Diego, CA Extension Program Representative	2010-2014
SAN DIEGO OCEANS FOUNDATION (SDOF) – San Diego, CA Programs and Outreach Director Marine Science Education Program Coordinator	2008-2010 2008
MWR: COMMANDER FLEET ACTIVITIES – Sasebo, Japan Head Lifeguard and Water Safety Instructor Lifeguard	2007-2008 2006-2007

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### **PUBLICATIONS**

# Published, In Press, or Accepted

Kerametsidis G, Thorson J, Rossi V, Álvarez-Berastegui D, Barnes CL, Certain G, Esteban A, García E, Jadaud A, Piñeiro S, Vivas M, and Hidalgo M. Submitted. Cross-scale environmental impacts across persistent and dynamic aggregations within a complex population: implications for fisheries management. Can J Fish Aquat Sci. Forthcoming.

Dick EJ, Barnes CL, Coates J, Grunloh N, Monk M, and Rogers T. 2023. The status of Black Rockifsh (Sebastes melanops) in U.S. waters off California in 2023. Pacific Fishery Management Council.

Thorson JT, Barnes CL, Friedman ST, Morano JL, and Siple MC. 2023. Spatially varying coefficients can improve parsimony and descriptive power for species distribution models. Ecogr. e06510.

# **PUBLICATIONS, CONT'D**

# Published, In Press, or Accepted

- 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, Samhouri J, Seary R, Selden RL, Thompson AR, Thorson J, Tommasi D, Ward EJ, and Zabel R. 2022. Recommendations for quantifying and reducing uncertainty in projections of species distributions. Glob Change Biol. 28:6586-6601.
- **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. e06189.
- 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.
- **Barnes CL**<sup>^</sup>, 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.
- **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 Cl, 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.

#### Submitted or In Review

#### In Preparation

- **Barnes CL**, Dorn MW, Essington TE, McGilliard CR, Punt AE, and Reum JCP. 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, et al. In prep. Synchrony as a measure of resilience for temperate groundfish communities.

### **PRESENTATIONS** 62-63 ALASKA CHAPTER of the AMERICAN FISHERIES SOCIETY - Fairbanks, AK 2023 — Climate-informed models benefit hindcasting but present challenges for forecasting species-habitat associations Prospective students: new opportunities with the Integrated Marine Fisheries Lab at OSU <sup>61</sup> OREGON CHAPTER of the AMERICAN FISHERIES SOCIETY – Eugene, OR 2023 — Prospective students: new opportunities with the Integrated Marine Fisheries Lab at OSU <sup>59-60</sup> WESTERN SOCIETY OF NATURALISTS – Oxnard, CA 2023 — Climate-informed models benefit hindcasting but present challenges for forecasting species-habitat associations Prospective students: new opportunities with the Integrated Marine Fisheries Lab at OSU 58 ECOSYSTEM STUDIES of SUBARCTIC AND ARTIC SEAS – Seattle, WA 2022 — Climate-informed models benefit hindcasting but present challenges for forecasting species-habitat associations <sup>57</sup> ALASKA CHAPTER of the AMERICAN FISHERIES SOCIETY – Virtual 2022 — Model complexity has contrasting effects for hindcasting and forecasting species responses to climate change <sup>56</sup> WESTERN SOCIETY of NATURALISTS – Virtual 2021 — Model complexity has contrasting effects for hindcasting and forecasting species responses to climate change 55 CENTER for the ADVANCEMENT of POPULATION ASSESSMENT METHODOLOGY - Virtual 2021 Predation as a modifier of constant natural mortality for Gulf of Alaska pollock <sup>54</sup> ALASKA MARINE SCIENCE SYMPOSIUM – Anchorage, AK 2020 — Development of a predation index to assess trophic stability in the Gulf of Alaska 52-53 ALASKA CHAPTER of the AMERICAN FISHERIES SOCIETY – Sitka, AK 2019 — Assessing the potential for competition between Pacific Halibut and Arrowtooth Flounder in the Gulf of Alaska Spatiotemporal variation in consumption of Walleye Pollock by major groundfish predators in the Gulf of Alaska <sup>51</sup> PICES – Victoria, BC 2019 — Ecological interactions among groundfish species in the Gulf of Alaska <sup>50</sup> POLLOCK CONSERVATION COOPERATIVE RESEARCH CENTER – Anchorage, AK 2019 — Ecological interactions among groundfish species in the Gulf of Alaska <sup>49</sup> RASMUSON FISHERIES RESEARCH CENTER – Anchorage, AK 2019 Ecological interactions among groundfish species in the Gulf of Alaska <sup>48</sup> WAKEFIELD FISHERIES SYMPOSIUM – Anchorage, AK 2019 — Comparative resource use by two groundfish species in nearshore SE Alaska <sup>47</sup> ALASKA FISHERIES SCIENCE CENTER, NOAA: GROUNDFISH SEMINAR – Seattle, WA 2018 — Ecological interactions among major groundfish species in the Gulf of Alaska <sup>46</sup> WESTERN DIVISION of the AMERICAN FISHERIES SOCIETY – Anchorage, AK 2018 Assessing the potential for competition between Pacific Halibut and Arrowtooth Flounder in the Gulf of Alaska <sup>45</sup> INTERNATIONAL PACIFIC HALIBUT COMMISSION SEMINAR SERIES – Seattle, WA 2018 Assessing the potential for competition between Pacific Halibut and Arrowtooth Flounder in the Gulf of Alaska <sup>44</sup> POLLOCK CONSERVATION COOPERATIVE RESEARCH CENTER – Anchorage, AK 2018 — Ecological interactions among groundfish species in the Gulf of Alaska <sup>43</sup> RASMUSON FISHERIES RESEARCH CENTER – Anchorage, AK 2018 — Ecological interactions among groundfish species in the Gulf of Alaska <sup>42</sup> UNIVERSITY OF ALASKA FAIRBANKS: AQUATIC FOOD WEB ECOLOGY – Juneau, AK 2018 Making ecological inferences from fisheries data <sup>41</sup> WESTERN GROUNDFISH CONFERENCE – Monterey, CA 2018 — A comparative assessment of resource use by P. Halibut and Arrowtooth Flounder throughout the Gulf of Alaska <sup>1</sup> <sup>40</sup> WESTERN SOCIETY OF NATURALISTS – Tacoma, WA 2018 — The potential for competition between Pacific Halibut and Arrowtooth Flounder in the Gulf of Alaska

# PRESENTATIONS, CONT'D

PRESENTATIONS, CONTY	
<sup>39</sup> ALASKA CHAPTER of the AMERICAN FISHERIES SOCIETY – Fairbanks, AK	2017
<ul> <li>A comparative assessment of resource use by P. Halibut and Arrowtooth Flounder throughout the Gulf of Alask</li> </ul>	a
<ul> <li>WESTERN DIV. of the AMERICAN FISHERIES SOCIETY: STUDENT COLLOQUIUM – McCall, ID</li> <li>A comparative assessment of resource use by P. Halibut and Arrowtooth Flounder from nearshore waters of SE</li> </ul>	2017 Alaska
<ul> <li>ALASKA MARINE SCIENCE SYMPOSIUM – Anchorage, AK</li> <li>Calculating an index of predation to improve the stock assessment for Walleye Pollock in the Gulf of Alaska</li> </ul>	2017
<ul> <li>POLLOCK CONSERVATION COOPERATIVE RESEARCH CENTER – Anchorage, AK</li> <li>Ecological interactions among groundfish species in the Gulf of Alaska</li> </ul>	2017
<ul> <li>35 ALASKA MARINE SCIENCE SYMPOSIUM – Anchorage, AK</li> <li>— Calculating an index of predation to improve the stock assessment for Walleye Pollock in the Gulf of Alaska</li> </ul>	2016
<ul> <li>33-34 POLLOCK CONSERVATION COOPERATIVE RESEARCH CENTER – Anchorage, AK</li> <li>— Developing an index of predation to improve the assessment of Walleye Pollock in the Gulf of Alaska</li> <li>— Ecological interactions among groundfish species in the Gulf of Alaska</li> </ul>	2016
<ul> <li>UNIVERSITY of ALASKA SOUTHEAST – Juneau, AK</li> <li>Introduction to AK Fisheries Seminar: Pacific Halibut biology, ecology, management</li> </ul>	2016
<ul> <li>WESTERN GROUNDFISH CONFERENCE – Newport, OR</li> <li>Growth, mortality, and reproductive seasonality of California Halibut: a biogeographic approach</li> <li>Calculating an index of predation to improve the stock assessment for Walleye Pollock in the Gulf of Alaska<sup>2</sup></li> </ul>	2016
<ul> <li>WESTERN SOCIETY of NATURALISTS – Monterey, CA</li> <li>A comparative assessment of resource use by Pacific Halibut and Arrowtooth Flounder from nearshore waters of Southeast Alaska: results from a small-scale field study</li> </ul>	2016
<sup>27-28</sup> AMERICAN FISHERIES SOCIETY: ALASKA CHAPTER – Homer, AK	2015
<ul> <li>Effects of demography, trophic interactions, and the environment on major groundfish species in the Gulf of Al</li> <li>Exploring environmental and demographic drivers of resource overlap among Pacific Halibut,</li> <li>Arrowtooth Flounder, and Walleye Pollock in the Gulf of Alaska</li> </ul>	aska
<sup>26</sup> ALASKA CHAPTER of the AMERICAN FISHERIES SOCIETY: STUDENT SYMPOSIUM – Juneau, AK	2015
— Growth, mortality, and reproductive seasonality of California Halibut: a biogeographic approach	
<sup>25</sup> WAKEFIELD FISHERIES SYMPOSIUM – Anchorage, AK	2015
<ul> <li>Growth, mortality, and reproductive seasonality of California Halibut</li> </ul>	
<sup>23-24</sup> CA COLLABORATIVE FISHERIES RESEARCH PROGRAM – Half Moon Bay & Moss Landing, CA	2014
<ul> <li>Research objectives, data collection, analyses, and project results (training workshop)</li> <li>MPA monitoring and other project results from 2013 (participant workshop)</li> </ul>	
<ul> <li>INTERNATIONAL FLATFISH SYMPOSIUM – Cle Elum, WA</li> <li>— Age, growth, and reproductive potential of California Halibut</li> </ul>	2014
<ul> <li>MARINE: OCEANS COLLOQUIUM – Moss Landing, CA</li> <li>Reproductive biology of California Halibut: results from the Central Coast</li> </ul>	2014
<ul> <li>MONTEREY BAY NAT'L MARINE SANCTUARY SYMP: SANCTUARY CURRENTS – Seaside, CA</li> <li>Reproductive biology of California Halibut: results from the Central Coast</li> </ul>	2014
<ul> <li>MOSS LANDING MARINE LABORATORIES, OPEN HOUSE SEMINAR – Moss Landing, CA</li> <li>— Flatfish fecundity: evaluating the reproductive nature of a prolific spawner in and around Monterey Bay</li> </ul>	2014
<sup>18</sup> MPA COLLABORATIVE NETWORK	2014
Key findings from monitoring Monterey Bay's marine protected areas	_0.1
16-17 WESTERN GROUNDFISH CONFERENCE – Victoria, Canada	2014
<ul> <li>MPA monitoring: more than just the latest and greatest in marine conservation trends</li> <li>Reproductive biology of California Halibut: results from the Central Coast</li> </ul>	_0.,

PRESENTATIONS, CONT'D				
15 WESTERN SOCIETY of NATU	RALISTS – Tacoma, WA			2014
<ul> <li>Reproductive biology of Califo</li> </ul>	ornia Halibut: evidence from	the Central Coast		
13-14 CA COLLABORATIVE FISH	ERIES RESEARCH PROG	RAM – Half Moon Bay	& Moss Landing, CA	2013
<ul> <li>Research objectives, data colle</li> </ul>	ection, analyses, and project	results (training workshop	)	
— MPA monitoring and other pro	oject results from 2012 (parti	cipant workshop)		
<sup>12</sup> CALIFORNIA DEPARTMENT	of FISH and WILDLIFE –	Belmont, CA		2013
— The California Collaborative F	isheries Research Program: o	objectives, results, and inte	rpretations	
<sup>11</sup> Monterey Bay Nat'l Mar	rine sanctuary symf	P: SANCTUARY CURRE	NTS – Seaside, CA	2013
<ul> <li>Reproductive characteristics of</li> </ul>				
<sup>10</sup> MOSS LANDING MARINE LA			s Landing, CA	2013
<ul> <li>— Spawning characteristics of Ca</li> </ul>	alifornia Halibut in Monterey	y Bay		
<sup>9</sup> WATSONVILLE AREA TEENS	CONSERVING HABITAT	S PROGRAM – Watsor	nville, CA	2013
<ul> <li>Reproductive characteristics of</li> </ul>	f California Halibut off centr	al California, with compar	isons to the S. California B	ight
<sup>8</sup> WESTERN SOCIETY of NATUI	RALISTS – Oxnard, CA			2013
<ul> <li>Reproductive biology of California</li> </ul>				
<sup>6-7</sup> CA COLLABORATIVE FISHER	RIES RES. PROG. – Half I	Moon Bay & Moss Land	ling, CA	2012
<ul> <li>Research objectives, data coll</li> </ul>	, , ,		)	
— MPA monitoring and other pro				
<sup>5</sup> EXPANDING YOUR HORIZO		•		2012
— Fishing for our future: fisheries	0,	•	_	
<sup>4</sup> MONTEREY BAY NAT'L MAR			·	2012
— Collaborative fisheries researc	•	· ·		
<sup>3</sup> MOSS LANDING MARINE LA			s Landing, CA	2012
— Fishing for science: the Californ		g .		2012
<sup>2</sup> WESTERN GROUNDFISH CO	,			2012
— Collaborative fisheries researc	•	or to data-rich management	I	2000
<ul> <li>SAN DIEGO BAY SYMPOSIUN</li> <li>SDOF's White Seabass Restors</li> </ul>	0	so to Can Diago Pay		2009
— SDOF'S Writte Seabass Restor	ation Project and its relevant	Le to San Diego bay		
MENTORSHIP				
Graduate Students (c Committee	Member)			
M. Bargas (MS, 2023-P)				
Graduate and Post-Baccalaure	ate Research Assistants			
J. Antus (2009)	H. Heath (2013-14)	S. Robinson (2011)	A. Sloan (2014)	
H. Delgado-Nordmann (2016)	G. Hunt (2015)	K. Ros (2010)		
Undergraduate Research Assis	tants			
A. Aines (2013)	D. Duncan (2013)	Z. Johanson (2016)	R. Rand (2011-12)	
<ul><li>D. Anaya (2013)</li><li>K. Askeland (2010)</li></ul>	A. Feck (2009) A. Gile (2015)	A. Kamber (2017) L. Knopp (2009)	M. Schmidt (2012) E. Schurig (2013)	
M. Bargas (2017)	N. Giraud (2009)	K. Kuhn (2008)	S. Saadat (2010-11)	
K. Beck (2014)	C. Giordano (2014)	J. Li (2020-21)	P. Saengcharoentrakul	(2021)
E. Bjork (2008)	A. Hedger (2009)	S. Link (2016)	N. Siababa (2014)	
S. Briley (2008)	E. Hetherington (2009)	S. Lomonico (2014)	E. Stollmeyer (2013)	
K. Brown (2016) A. Chorazyczewski (2014)	F. Holman (2022-P) C. Homer (2018)	M. Mairz (2010) R. McCollough (2013)	H. Wayner (2016-17) D. Weir (2009)	
C. Doles (2013)	C. Hope (2010)	P. Muehlenbeck (2012)		

PROFESSIONAL SERVICE AND OUTREACH ACT	IVITIES	
SCIENTIFIC AND STATISTICAL COMMITTEE, PAG	CIFIC FISHERY MANAGEMENT COUNCII	2023-P
Oregon Department of Fish and Wildlife Appoin	ntment	
PEER REVIEWER		
Bulletin of the S California Academy of Sciences Ecosphere Exxon Valdez Oil Spill Trustee Council	Frontiers in Marine Science PLoS ON ICES Journal of Marine Science	of Fish Biology NE
Fisheries Research	Journal of Applied Ecology	2022 D
NEWPORT PRIDE, Planning Committee and Four		2022-P
AMERICAN FISHERIES SOCIETY, ALASKA CHAP  Peer Mentor; Professional Mentor	IEK	2020-P
Diversity, Equity, and Inclusion Committee (Cha	air)	2018-P
Annual Meeting Planning Committee	2017, 2019, 2021	
Program, Awards (co-Chair), and Entertainment	Committees	2018-2019
Executive Committee, Student Representative		2015-2017
AMERICAN FISHERIES SOCIETY, WESTERN DIVI		2010 D. 2021
Diversity and Inclusion Committee; Annual Med	0 0	2018-P; 2021
AMERICAN FISHERIES SOCIETY, Diversity, Equity	,	2021-2023
WESTERN GROUNDFISH CONFERENCE, Steerin	•	2019-2022
WESTERN SOCIETY OF NATURALISTS (WSN), D	iversity, Equity, and Inclusion Committee	2018-2022
SKYPE A SCIENTIST, Volunteer		2018-2022
ALASKA FISHERIES SCIENCE CENTER (AFSC, NC	OAA), Gender Equity Working Group	2021
SOUTHEAST ALASKA LGBTQIA+ ALLIANCE Board Member; Volunteer	2018-2019	9; 2015-2019
UNIVERSITY OF ALASKA FAIRBANKS	2010-201	5, 2015-2015
Assistant Professor in Quantitative Fisheries Sea	rch Committee	2018-2019
Graduate Academic and Advising Committee		2017-2019
Professional Development Workshop Organizer	•	2018
SITKA SOUND SCIENCE CENTER, Scientist in the	e Schools Volunteer	2018
PARTNERSHIP FOR INTERDISCIPLINARY STUDIE	S OF COASTAL OCEANS, Volunteer 201	3-2014, 2018
ALASKA FISHERIES SCIENCE CENTER (NOAA), B	ottom Trawl Survey Volunteer	2017
MOSS LANDING MARINE LABORATORIES		
Curriculum Committee	32044 2042	2012-2014
Donations Committee Chair <sup>a</sup> ; Advisor <sup>b</sup> Associated Student Body Vice President	<sup>4</sup> 2011-2012	; <sup>b</sup> 2013-2014 2011-2012
TEACHER ENHANCEMENT PROGRAM, Marine S	Scionco Educator	2011-2012
WATSONVILLE AREA TEENS CONSERVING HAI		2013-2013
EXPANDING YOUR HORIZONS NETWORK, Yo	,	2012-2013
MONTEREY BAY AQUARIUM, DSCVR Young W		2011-2013
SAN DIEGO STATE UNIVERSITY, Graduate Research		2011, 2013
•		2010
SAN DIEGO SCIENCE AND ENGINEERING FAIR,	,	2009-2010
SAN DIEGO COASTKEEPER, Outreach and Comi	,	
UNDERGRADUATE RESOURCE OPPORTUNITIE	ES CEINTER CSU MIONTEREY BAY, Mento	or 2014

SELECT ASSOCIATIONS, TRAININGS, AND CERTIFICATIONS	
500 QUEER SCIENTISTS, Member	2017-P
ALASKA CLIMATE INTEGRATED MODELING (ACLIM), Collaborator	2020-P
ALASKA MARINE SAFETY EDUCATION ASSOC, Cold Water Survival; Skiff Operator	2015, 2017
AMERICAN ACADEMY OF UNDERWATER SCIENCES, Scientific Diver; Member	2010-P
AMERICAN FISHERIES SOCIETY, Western Division and Alaska Chapter Member	2015-P
AMERICAN INSTITUTE OF FISHERY RESEARCH BIOLOGISTS, Member	2019-P
AMERICAN RED CROSS	
CPR, AED, First Aid, and Administering Emergency O <sub>2</sub>	2006-2015
Lifeguard and Water Safety Instructor; Fundamentals of Instructor Training	2006-2008
AMERICAN STATISTICAL ASSOCIATION, Alaska Chapter Member	2019-P
CA DEPARTNENT 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 (CITI)	2015 2016
Working with the IACUC; Field and Lab Animal Researchers	2015-2018
ECOLOGICAL SOCIETY OF AMERICA, Member	2019-F
EPSCoR, Mindful Leadership: Creating a Diverse and Inclusive UA Workshop Participant	2018
EQUAL EMPLOYMENT OPPORTUNITY COMM., Beyond the Binary Workshop Participal	
GULF OF ALASKA CLIMATE INTEGRATED MODELING (GOACLIM), Collaborator	2022-F
MORALE, WELFARE, AND RECREATION, COMM. FLEET ACT, Power Boat Operator	2007
MPA COLLABORATIVE NETWORK, Participant	2011-2014
NAT'L ASSOC. OF UNDERWATER INSTRUCTORS  Master SCUBA Diver; Nitrox Diver	2010
NATIONAL CENTER FOR ECOLOGICAL ANALYSIS AND SYNTHESIS (NCEAS)	
Reproducible Research Techniques for Synthesis Workshop Participant	2019
NATIONAL COUNCIL FOR BEHAVIORAL HEALTH, Mental Health First Aid USA	2018
NOAA PRIDE EMPLOYEE RESOURCE GROUP, Member	2020-2023
oSTEM, Member	2019-F
PROFESSIONAL ASSOCIATION OF DIVING INSTRUCTORS Open Water, Advanced Open Water, Rescue Diver; Dive Master 2006, 200	07, 2009; 2010
REEF CHECK CALIFORNIA UPC, Algae, Invertebrate, and Fish Surveyor	2010
REEF ENVIRONMENTAL EDUCATION FOUNDATION (REEF)	
Marine Algal, Invertebrate, and Expert Fish Surveyor	2008
SACNAS, Member	2022-F
SACNAS NATIVE INITIATIVES, Creating More Inclusive Spaces in STEM Workshop Partici	pant 2021
TRIMBLE, Intermediate Mapping and GIS Certificate	2011
UNITED STATES COAST GUARD, Small Vessel Operator	2015
WESTERN SOCIETY OF NATURALISTS, Member	2010-F