

## EDUCATION

PhD, Fisheries | UNIVERSITY of ALASKA FAIRBANKS (UAF) 2019

- Dissertation: Ecological interactions among important groundfishes in the Gulf of Alaska
- Collaborators: A. Beaudreau (UAF), L. Ciannelli (OSU), M. Dorn (NOAA), K. Holsman (NOAA), M. Hunsicker (NOAA), F. Mueter (UAF), T. Quinn (UAF), R. Yamada (AK Charter Association)

MS, Marine Science | MOSS LANDING MARINE LABORATORIES (MLML) 2015

Degree awarded by San José State University (SJSU)

- Thesis: Growth, mortality, and reproductive potential of California Halibut (*P. californicus*)
- Collaborators: R. Starr, S. Hamilton, J. Harvey (MLML); K. Lesyna, P. Reilly, T. Tanaka (CDFW)

BS, Biology; Emphasis: Marine Biology | SAN DIEGO STATE UNIVERSITY (SDSU) 2006

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## PROFESSIONAL EXPERIENCE (2006 )

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*

2022 to present

*Postdoctoral Scholar*

2020 to 2021

SCALE BACK CONSULTING, LLC – Anchorage, AK

*Principal Investigator*

2020 to present

CA COLLABORATIVE FISHERIES RESEARCH PROGRAM (CCFRP) – Moss Landing, CA

*Lead Scientist*

2011 to 2014

*Volunteer Coordinator*

2010 to 2011

*Science Crew Member*

2010

CALIFORNIA SEA GRANT – San Diego, CA

*Extension Program Representative*

2010 to 2014

SAN DIEGO OCEANS FOUNDATION (SDOF) – San Diego, CA

*Programs and Outreach Director*

2008 to 2010

*Marine Science Education Program Coordinator*

2008

MWR: COMMANDER FLEET ACTIVITIES – Sasebo, Japan

*Head Lifeguard and Water Safety Instructor*

2006 to 2008

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## TEACHING EXPERIENCE

UNIVERSITY of ALASKA FAIRBANKS – Juneau, AK

*Substitute Lecturer: Making Ecological Inferences from Fisheries Data*

2018

*Teaching Assistant: Field Methods in Marine Ecology and Fisheries*

2017

UNIVERSITY of ALASKA SOUTHEAST: INTRO. to ALASKA FISHERIES – Juneau, AK

2016

*Substitute Lecturer: Pacific Halibut Biology, Ecology, and Management*

CA COLLABORATIVE FISHERIES RESEARCH PROGRAM – Moss Landing, CA

2014, 2013, 2012

*Staff, Volunteer, and Participant Trainer: MPA Survey Objectives and Protocols*

SAN DIEGO OCEANS FOUNDATION (SDOF) – San Diego, CA

*Marine Science Educator: Various 5-week K-12 Modules*

2008 to 2010

*Citizen Science Instructor: SCUBA Survey Methods and Species Identification*

2008 to 2010

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## MENTORSHIP

### *Undergraduate Students*

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

### *Graduate Students*

H. Delgado-Nordmann (2016)	G. Hunt (2015)
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### *Post-Baccalaureate Research Assistants*

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

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## GRANTS AND FELLOWSHIPS

Magnuson-Stevens Act, Pls: J. Thorson, J. Pirtle, K. Aydin – \$229,306	2020 to 2022
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 Grant (SDOF) – \$9,900	2010

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## AWARDS AND HONORS

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 <sup>7</sup>	2019, 2015
Western Groundfish Conference – First Place: Student Talk <sup>4</sup>	2018
American Fisheries Society, AK Chapter – Student Travel Award <sup>1</sup>	2018, 2017, 2015
Western Groundfish Conference – Student Travel Award <sup>2</sup>	2018, 2016, 2014, 2012
American Fisheries Society – Western Division Student Travel Award <sup>3</sup>	2017
Western Groundfish Conference – Mirth Award <sup>5</sup> ; Second Place, Student Poster <sup>6</sup>	2016
CSU Council on Ocean Affairs, Science, and Technology – Student Travel Award <sup>9</sup>	2014
International Flatfish Symposium – Student Travel Award <sup>8</sup>	2014
Monterey Bay National Marine Sanctuary Symposium – First Place, Student Poster <sup>10</sup>	2013
SDSU Dean's List – Honors Recognition	2006, 2004

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

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## PUBLICATIONS

- 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. *Can J Fish Aquat Sci.* Forthcoming.
- 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. *PNAS.* Forthcoming.
- Dorn MW and **Barnes CL**. Submitted. Time-varying predation as a modifier of constant natural mortality for Gulf of Alaska pollock. *Fish Res. VSI Natural Mortality.* Forthcoming.
- Barnes CL**, Essington TE, Pirtle JP, Rooper CN, Laman EA, Holsman KK, Aydin KY, and Thorson JT. In review. Effects of model complexity on describing and forecasting species responses to climate change. *Ecogr.* Forthcoming.
- 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.

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## SELECT PRESENTATIONS (N<sub>total</sub> = 56)

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|---|------|
| WESTERN SOCIETY of NATURALISTS – Virtual  | 2021 |
| — Model complexity has contrasting benefits 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                            |      |
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**SELECT PRESENTATIONS** (N<sub>total</sub> = 56), cont'd

ALASKA FISHERIES SCIENCE CENTER, NOAA: GROUND FISH SEMINAR – Seattle, WA	2018
— Ecological interactions among major groundfish species in the Gulf of Alaska	
AMERICAN FISHERIES SOCIETY: WESTERN DIVISION – Anchorage, AK <sup>1</sup>	2018
WESTERN GROUND FISH CONFERENCE – Seaside, CA <sup>2</sup>	2018
— Assessing the potential for competition between Pacific Halibut ( <i>H. stenolepis</i> ) and Arrowtooth Flounder ( <i>A. stomias</i> ) in the Gulf of Alaska	
AMERICAN FISHERIES SOCIETY: ALASKA CHAPTER – Fairbanks, AK <sup>1</sup>	2017
AMERICAN FISHERIES SOCIETY: WESTERN DIV. STUDENT COLLOQUIUM – McCall, ID <sup>3</sup>	2017
— A comparative assessment of resource use by Pacific Halibut ( <i>H. stenolepis</i> ) and Arrowtooth Flounder ( <i>A. stomias</i> ) throughout the Gulf of Alaska	
ALASKA MARINE SCIENCE SYMPOSIUM – Anchorage, AK	2016
WESTERN GROUND FISH CONFERENCE – Newport, OR <sup>2</sup>	2016
— Calculating an index of predation to improve the stock assessment for Walleye Pollock ( <i>G. chalcogrammus</i> ) in the Gulf of Alaska <sup>4</sup>	
WESTERN GROUND FISH CONFERENCE – Newport, OR <sup>2, 5, 6</sup>	2016
WAKEFIELD FISHERIES SYMPOSIUM – Anchorage, AK <sup>7</sup>	2015
— Growth, mortality, and reproductive seasonality of California Halibut ( <i>P. californicus</i> ): a biogeographic approach <sup>6</sup>	
AMERICAN FISHERIES SOCIETY: ALASKA CHAPTER – Homer, AK <sup>2</sup>	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 Pacific Halibut, Arrowtooth Flounder, and Walleye Pollock in the Gulf of Alaska	
INTERNATIONAL FLATFISH SYMPOSIUM – Cle Elum, WA <sup>8</sup>	2014
— Age, growth, and reproductive potential of California Halibut ( <i>P. californicus</i> )	
MOSS LANDING MARINE LABORATORIES: OPEN HOUSE SEMINAR – Moss Landing, CA	2014
— Flatfish fecundity: evaluating the reproductive nature of a prolific spawner in and around Monterey Bay	
WESTERN GROUND FISH CONFERENCE – Victoria, Canada <sup>2</sup>	2014
— MPA monitoring: more than just the latest and greatest in marine conservation trends	
WESTERN SOCIETY of NATURALISTS – Tacoma, WA <sup>9</sup>	2014
— Reproductive biology of California Halibut ( <i>P. californicus</i> ): results from the Central Coast	
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
MOSS LANDING MARINE LABORATORIES: OPEN HOUSE SEMINAR – Moss Landing, CA	2013
— Reproductive characteristics of California Halibut ( <i>P. californicus</i> ) off central California, with comparisons to the Southern California Bight <sup>10</sup>	
MONTEREY BAY NAT'L MAR. SANCTUARY SYMP: SANCTUARY CURRENTS – Seaside, CA	2012
WESTERN GROUND FISH CONFERENCE – Seattle, WA <sup>2</sup>	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	

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## 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

### AMERICAN FISHERIES SOCIETY, NATIONAL

Diversity & Inclusion Committee 2021 to present

WESTERN GROUND FISH CONFERENCE, Steering Committee 2019 to present

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

### AMERICAN FISHERIES SOCIETY, ALASKA CHAPTER

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

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

Executive Committee Member, Student Subunit President 2015 to 2017

### AMERICAN FISHERIES SOCIETY, WESTERN DIVISION

Diversity & Inclusion Committee 2018 to present

Annual Meeting Planning Committee 2021

SKYPE A SCIENTIST, Volunteer 2018 to present

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

UAF COLLEGE of FISHERIES and OCEAN SCIENCES, Student Rep. 2018 to 2019

Search Committee, Assistant Professor in Quantitative Fisheries

UAF GRADUATE ACADEMIC and ADVISING COMM., Graduate Student Rep. 2017 to 2019

### SOUTHEAST ALASKA LGBTQIA+ ALLIANCE

Board Member 2018 to 2019

Volunteer 2015 to 2019

COLLEGE of FISHERIES and OCEAN SCIENCES (UAF) PROF. DEV. WKSHP, Organizer 2018

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, Student Representative 2012 to 2014

Donations Committee, Advisor <sup>a</sup> and Chair <sup>b</sup> <sup>a</sup> 2013-14, <sup>b</sup> 2011-12

Associated Student Body, Vice President 2011 to 2012

MPA COLLABORATIVE NETWORK, Member 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

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## 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 <sub>2</sub>	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

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REFERENCES AVAILABLE UPON REQUEST