UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Alaska Fisheries Science Center
7600 Sand Point Way N.E.
Seattle, WA 98115-6349

Simon Kinneen, Chair
North Pacific Fishery Management Council
1007 W. 3rd Avenue
Anchorage, AK 99501

September 12, 2022

Dear Mr. Kinneen,

I am pleased to nominate Dr. Cecilia O'Leary for the Gulf of Alaska (GOA) Groundfish Plan Team (GPT). Cecilia has exceptionally strong quantitative skills and knowledge of stock assessments. The breadth of her experience from hands-on data collection and past stock assessment work ensures that she will be a valuable asset to the Plan Team.

Dr. O'Leary is a Research Fish Biologist in the GOA/Aleutian Islands survey group of the Groundfish Assessment Program (GAP) at Alaska Fisheries Science Center. She joined GAP as a JISAO postdoc in February 2019 and worked with Drs. Jerry Hoff, James Thorson, Stan Kotwicki, and Andre Punt with a focus on developing indices of abundance from bottom trawl surveys and quantifying total uncertainty around those estimates. Her recent work has focused on fish population dynamics, developing abundance indices for untrawlable fish habitat in the Gulf of Alaska, and using spatiotemporal modeling tools and fisheries independent survey data to estimate of groundfish distribution and abundance.

During her tenure with GAP, Dr. O'Leary has become increasingly familiar with fishery-independent Alaska groundfish surveys designs, data products, and their utility for stock assessments and management advice. She has practical experience as well, having just finished a tour of duty on the Aleutian Islands 2022 summer bottom trawl survey as a Field Party Chief running daily fishing operations and catch processing. In 2021, she was Deck Lead on the GOA bottom trawl survey responsible for catch processing and data quality.

Dr. O'Leary's recent (2022) paper, Understanding transboundary stocks' availability by combining multiple fisheries-independent surveys and oceanographic conditions in spatiotemporal models, was selected as the Editor's Choice in the ICES Journal of Marine Science. She also leads our team who produce spatiotemporal biomass estimates from VAST for the GOA and has a strong coding background in R, R Shiny, operating in the GitHub environment, and using ADMB/TMB and Python.

Prior to her tenure in GAP, Dr. O'Leary focused her PhD research under Dr. Janet Nye at Stony Brook University on fish population dynamics including estimating productivity, natural and fishing mortality, and identifying the environmental factors influential on those processes. She

also created a temporal model to incorporate climate data into age-structured hierarchical statistical models to estimate age-specific fish abundances in the Northwest Atlantic.

Dr. O'Leary's experience collecting fishery-independent data and using them to assess groundfish populations and support stock assessments make her an excellent candidate for the GOA GPT. Her proven expertise in understanding relationships between fish, habitat, and climate are important skills as well.

We appreciate the opportunity to provide scientists in support of the NPFMC plan teams.

Sincerely,

Robert Foy
Director

Dr. Cecilia O'Leary

cecilia.oleary@noaa.gov

Quantitative Ecologist & Fisheries Biologist

GITHUB

github.com/ceciliaOLearySBU

WEBSITE

olearypopdy.wordpress.com

SOFTWARE

- R & Rshiny
- Git
- ADMB/TMB
- Python
- SQL

EXPERTISE

- Simulation & Sensitivity Analysis
- Spatial & Temporal Statistical Modelling Techniques
- Bayesian Modelling & Evaluation
- Data Assembly and Analysis
- Population Dynamics

CERTIFICATIONS

Cold Water Survival / 2019
NOAA / Seattle WA

Advanced First Aid / 2019
NOAA / Seattle WA

Wilderness First Responder / 2017
Discover Outdoors / NYC NY

EDUCATION

PhD / Marine & Atmospheric Sciences
Stony Brook University, NY, USA
2013 – 2018
GPA 3.96

Dissertation: Statistical Approaches to Determine the Influence of Climate and Fishing on Flatfish Abundances

Relevant Coursework: Total Weekly Hours (26)

Biological Oceanography (3 hours), Biogeochemical Oceanography (3 hours), Physical Oceanography (3 hours), Quantitative Fisheries Ecology (including principles of fishery population dynamics, 3 hours), Biometry (statistics, 4 hours), Bayesian Data Analysis (statistics, 3 hours), Ecology of Fishes (including physiology and ichthyology and principles of fishery population dynamics; 3 hours), Population and Community Ecology Seminar (2 hours), Advanced Environmental Statistics (2 hours)

Master's of Research / Marine Mammal Science
University of St. Andrews, Scotland, UK
2010 – 2011
GPA 3.67

Dissertation: The Social Structure of Chilean dolphins (*Cephalorhynchus eutropia*) and its application to coastal management

Relevant Coursework: Total Weekly Hours (75)

Population Biology of Marine Mammals (15 hours), Essential Methods in Marine Mammal Science I (10 hours), Essential Methods in Marine Mammal Science II (20 hours), Biology of Marine Mammals (zoology, 10 hours), Statistical Modelling (20 hours)

Bachelor of Science / Biology
University of Richmond, VA, USA
2010 – 2011
GPA 3.22

Relevant Coursework: Total Weekly Hours (55)
Advanced Ecology (4 hours), Environmental Chemistry (3 hours), Inorganic Chemistry (3 hours), General Physics with Calculus I (mathematics , 4 hours), General Physics with Calculus II (mathematics , 3 hours), Tropical Marine Biology (4 hours), Behavioral Ecology (4 hours), Invertebrate Zoology (4 hours), Biogenetics (4 hours), Scientific Calculus I (mathematics, 3 hours), Scientific Calculus II (mathematics, 3 hours), Cell and Molecular Biology (4 hours), Integrative Biology I (including genetic, cellular, and morphological processes in animals/plants; 4 hours), Integrative Biology II (including genetic, cellular, and morphological processes in animals/plants; 4 hours), Organic Chemistry (4 hours)

COMPUTATIONAL & FIELDWORK EXPERIENCE

Fisheries Research Biologist
Groundfish Assessment Program, RACE
Alaska Fisheries Science Center
Seattle WA
February 2020 – present
Hours: 40/week ; *Full Time*
Supervisors: Ned Laman

Duties & Contributions

- Conduct and serve as lead scientist for the Aleutian Islands and Gulf of Alaska Groundfish Assessment Program Groundfish Bottom Trawl surveys
- Conducting research related to fish population dynamics, including fish distribution and ecosystem influences on those processes
- Conducting research to develop indices for untrawlable fish habitat in the Gulf of Alaska
- Design and developing survey-related spatiotemporal modelling tools to incorporate fisheries independent survey data that spans different regions in space and time to estimate the abundance and distribution of groundfish in the Bering Sea
- Providing mathematical and statistical modelling skills to design, conduct, and statistically evaluate our understanding of ecosystem processes based on trawl and oceanographic data
- Develop model-based indices for abundance and fish condition for stock assessment scientists to include in single-species assessments and ESR/ESP, train others to do so
- Participated in NOAA stock assessment methods, climate methods, cultural sensitivity, research at sea training, and internal NOAA tool development meetings and workshops
- Collaborated with NOAA employees to develop innovative method for calculating indices of abundance for input data for stock assessment models
- Initiated and maintained collaboration with international colleagues for data sharing
- Ensure quality control & reproducibility of developed code, train others to do so
- Managed large spatial and temporal NOAA data sets to incorporate into statistical analyses
- Selected as editor's choice in ICES JMS: Understanding transboundary stocks' availability by combining multiple fisheries-independent surveys and oceanographic conditions in spatiotemporal models. ICES JMS 2022
- Press coverage: As Marine Fish Shift With Climate Change, Scientists Work Across Borders to Ensure Sustainability
- Presentation to plan team summarizing model based index progress (Sept 2021) - "2021 Groundfish Assessment Program Model-based Indices (VAST)"

Postdoctoral Researcher
JISAO University of Washington and Alaska Fisheries Science Center
Seattle WA
February 2019 – January 2020
Hours: 40/week ; *Full Time*
Supervisors: Dr. James Thorson, Dr. Jerry Hoff, Dr. Stan Kotwicki, Dr. Andre Punt

Duties & Contributions

- Conducting research related to fish population dynamics, including fish distribution and ecosystem influences on those processes
- Design and developing survey-related spatiotemporal modelling tools to incorporate fisheries independent survey data that spans different regions in space and time to estimate the abundance and distribution of groundfish in the Bering Sea
- Providing mathematical and statistical modelling skills to design, conduct, and statistically evaluate our understanding of ecosystem processes based on trawl and oceanographic data
- Lead and planned the code & statistical modelling development portion of this team-based statistical and mathematical modeling project to develop survey-related indices of abundance from bottom trawl survey and quantify the total uncertainty associated with the survey
- Determining availability of some fish species to the Alaska Fisheries Science center bottom trawl survey to determine availability and efficacy of groundfish species to the survey
- Participated in NOAA stock assessment methods, climate methods, cultural sensitivity, research at sea training, and internal NOAA tool development meetings and workshops
- Conduct [*August 2019*] bottom trawl survey fisheries and invertebrate data collection in the northern Bering Sea
- Collaborated with NOAA employees to develop innovative method for calculating indices of abundance for input data for stock assessment models
- Initiated and maintained collaboration with international colleagues for data sharing
- Ensure quality control & reproducibility of developed code
- Managed large spatial and temporal NOAA data sets to incorporate into statistical analyses
- Familiarized with NOAA oceanographic and trawl data for use in complex statistical modelling
- Maintained scientific writing skills by working with PIs to write-up various scientific articles that are in progress
- Performed duties as part of the collaborative international and multi institute team and individually in the field and office setting
- Presented & communicated research results to the scientific community at invited seminar and research meetings

PhD Candidate and Research Assistant
Stony Brook University
Stony Brook NY
August 2013 – December 2018
Hours: 40/week ; *Full Time*
Committee: Dr. Janet Nye (advisor), Dr. James Thorson, Dr. Tim Miller, Dr. Heather Lynch, Dr. Mike Frisk

Duties & Contributions

- Research was focused on the population dynamics of fish species, including how to estimate productivity, natural and fishing mortalities, and environmental influences on those processes
- Created and tested a Bayesian temporal model and other statistical tools to incorporate climate data (Gulf Stream index) into age-structured hierarchical statistical models to estimate age-specific fish (summer flounder) abundances over time to represent the relationship between physical and biological interactions of marine ecosystems and living marine resources in the Northwest Atlantic
- Provided mathematical and statistical modelling skills to design, conduct, evaluate and publish alternative models to provide a mechanistic understanding of ecosystem processes based on trawl and oceanographic data
- Familiarized with NOAA NMFS bottom trawl survey data
- Performed Bayesian and Frequentist statistical analyses to derive estimates of fish population characteristics (abundances, reference points, time-varying vital rates)
- Utilized and implemented developed tools to perform statistical analyses of fishery related survey data and invertebrate survey data to determine the nature of ecosystem responses to manmade impacts on the environment (ocean acidification, climate, and fishing)
- Lead multi-institutional team-based statistical and mathematical modeling portion of the project to develop an approach to understand how time varying fishing and time varying climate influence fish abundances
- Participated in and presented at NOAA working groups and stakeholder meetings
- Collaborated with NOAA employees at multiple centers to develop innovative Bayesian model and method to estimate time-varying abundances using climate information
- Developed new methods to calculate time-varying Biological Reference Points using multiple approaches to calculate productivity and climate-dependent statistical models
- Conducted sensitivity analyses in all projects to determine the influence of prior distributions on model results and the relative effect of time-varying population vital rates on temporal variation of results
- Simulated fish populations in ADMB/TMB stock-assessment model that varied in the assumed catchability and determined the model bias and ability for information criterion model selection to select the best performing model
- Ensured quality control & reproducibility of developed code
- Managed large temporal NOAA data sets to incorporate into statistical analyses
- Created and implemented Rshiny visualization tool to summarize NOAA data
- Performed duties as part of the collaborative multi institute team and individually in the field and office setting
- Communicated science to the public and science community in seminars, public presentations, regional/national/international science conferences, and management meetings (including stakeholders)
- Assessed ocean acidification effects on invertebrate populations using matrix population models and inverse demography

Science Training and Research to Inform Decisions Intern
Northwest Fisheries Science Center
Seattle WA
May 2017 – August 2017
Hours: 40/week ; *Full Time*
Supervisors: Dr. James Thorson, Dr. Janet Nye

Duties & Contributions

- Conducted research related to fish population dynamics, including fish abundance and distribution
- Developed spatio-temporal modelling tools to incorporate citizen-science data to provide density and spatial distribution estimates of fish on Belize and Bahama tropical reefs
- Performed statistical analyses of fisheries related citizen-science data to derive population characteristic estimates
- Provided mathematical and statistical modelling skills to design and conduct a study to understand fisheries dynamics based on reef survey data
- Team-based statistical and mathematical modeling project to extract information from previously existing data sources
- Determined efficacy of using citizen-science data as supplemental information for fish density and spatial estimates
- Participated in NOAA stock assessment methods and internal NOAA tool development meetings
- Collaborated with NOAA employee to develop innovative method for calculating density estimates alternative to traditional fisheries data sets
- Initiated and maintained collaboration with conservation and restoration group, academic, and government institutions
- Ensure quality control & reproducibility of developed code
- Managed large spatial and temporal REEF data sets to incorporate into statistical analyses
- Created and implemented Rshiny visualization tool to communicate results to the public as well as colleagues
- Performed duties as part of the collaborative international and multi institute team and individually

NOAA Bottom Trawl Survey Biologist Volunteer
Northeast Fisheries Science Center
Northwest Atlantic
October 2017 – November 2017
Hours: 84/week for 3 weeks ; *Seasonal (Full Time while in progress)*
Supervisor: Dr. Janet Nye

Duties & Contributions

- Implemented marine research survey design and sampling principles to conduct the bottom trawl federal research survey
- Followed established survey protocols
- Work required at sea deployments in offshore areas

Antarctic Field Scientist
Oceanites and Stony Brook University
Western Antarctica & the Antarctic Peninsula
Austral Summers (November/December/January) 2014 – 2017
Hours: 56/week for 4 weeks per year ; *Seasonal (Full Time while in progress)*
Supervisors: Ron Naveen, Dr. Heather Lynch

Duties & Contributions

- Implemented marine and terrestrial research survey design and sampling principles to conduct the at sea and land bird and nest counts
- Participated in the international collaborative collection of Antarctic Site Inventory seabird and penguin data that contributed to the research-based evidence provided to the Antarctic Treaty System and CCAMLR (Commission for the Conservation of Antarctic Marine Living Resources) meetings
- Lead team survey decisions in the field to adjust to field conditions while maintaining statistical integrity of the survey
- Work required at sea deployments and remote offshore and onshore areas
- Followed established survey protocols
- Communicated science to the public to relay the importance of the survey work for understanding the health and productivity of the Antarctic system using penguins and seabirds as indicator species
- Interacted with the public daily and provided informal presentations to answer questions regarding Antarctic ecology, wildlife, and oceanography

Faculty Research Assistant
University of Maryland Chesapeake Biological Lab
Solomons, Maryland
August 2012 – August 2013
Hours: 40/week ; *Full Time*
Supervisor: Dr. Walter Boynton

Duties & Contributions

- Integrate spatial and temporal data to investigate biotic and abiotic indicators of dissolved oxygen in the Chesapeake Bay & its tributaries
- Lead investigator responsible for proposing solutions for the merging of spatial & temporal ecological datasets and resident mathematical modeler and applied statistical programmer (R software)
- Manipulate, organize, and analyze spatial oceanographic data and satellite imagery (ArcGIS v.10)
- Implemented survey design and sampling principles to conduct the water quality research survey
- Sampled and processed research samples (sediment and water samples) according to statistical protocols
- Work required at sea deployments and operation of motor vehicle
- Performed data analysis to determine the nature of ecosystem responses to natural and man-made impacts on the environment (Chesapeake Bay and tributary response to natural and man-made nutrient input)
- Developed statistical model to estimate the relationship between location, time of day, and the chemical characteristics of the system (dissolved oxygen)

***Phocidae* Survey Technician Volunteer**
Riverhead Foundation, Capt. Lou Fleet
Long Island, NY
Summer 2016
Hours: 5/week for each cruise ; *Part Time*
Supervisor: Val Sherlock

Duties & Contributions

- Implemented marine research survey design and sampling principles to conduct the opportunistic research survey
- Followed established survey protocols
- Work consisted of small vessel deployments
- Identified NY seal species and collected oceanographic and descriptive cruise information

Riparian Technician
University of South Dakota
Mandan, North Dakota
May 2012 - August 2012
Hours: 40/week ; *Full Time*
Supervisor: Dr. Mark Dixon and Victoria Albers

Duties & Contributions

- Implemented freshwater and riparian research survey design and sampling principles to conduct the research survey
- Followed established survey protocols
- Work required water deployments
- Made in the field sampling decisions to correspond with statistical protocols
- Work required operation of motor vehicle and small vessel

Desert Tortoise Line Distance Technician
Institute for Wildlife Studies
Las Vegas, Nevada
March 2012 - May 2012
Hours: 40/week ; *Full Time*
Supervisor: Dr. Nate Gregory

Duties & Contributions

- Implemented research survey design and sampling principles to conduct the research survey
- Followed established survey protocols
- Made in the field sampling decisions to correspond with statistical protocols
- Work required operation of motor vehicle

Research Assistant and Intern
Dolphin Research Center
Grassy Key, FL
September 2011 - January 2012
Hours: 40/week ; *Full Time*
Supervisor: Emily Guarino

Duties & Contributions

- Implemented research survey design and sampling principles to conduct the research survey
- Followed established survey protocols

PEER REVIEWED PUBLICATIONS & REPORTS

Published

Understanding transboundary stocks' availability by combining multiple fisheries-independent surveys and oceanographic conditions in spatiotemporal models. 2022. **CA O'Leary**, LB DeFilippo, JT Thorson, S Kotwicki, GR Hoff, VV Kulik, J Ianelli, AE Punt. ICES Journal of Marine Science 79 (4), 1063-1074.

Estimating spatiotemporal availability of transboundary fishes to fishery-independent surveys. 2021. **CA O'Leary**, S Kotwicki, GR Hoff, JT Thorson, VV Kulik, JN Ianelli, R Lauth, DG Nichol, J Conner, AE Punt. Journal of Applied Ecology 58 (10), 2146-2157.

Hurst, T. P., **O'Leary, C. A.**, Rohan, S. K., Siddon, E. C., Thorson, J. T., & Vollenweider, J. J. (2021). Inventory, management uses, and recommendations for fish and crab condition information from the 2021 AFSC Condition Congress.

A Maureaud, A., Frelat, R., Pécuchet, L., Shackell, N., Mérigot, B., Pinsky, M. L., ...**C.A. O'Leary**... & T Thorson, J. (2021). Are we ready to track climate-driven shifts in marine species across international boundaries?-A global survey of scientific bottom trawl data. *Global change biology*, *27*(2), 220-236.

O'Leary, C.A., James T. Thorson, J. Ianelli, S. Kotwicki**. 2020.** Adapting to climate-driven distribution shifts using model-based indices and age-composition from multiple surveys in the Alaska pollock stock assessment. Fisheries Oceanography.

Thorson, J. W. Cheng, A. Hermann, J. Ianelli, M. Litzow, **C. O'Leary**, G. Thompson. 2020. Empirical Orthogonal Function Regression: Linking population biology to spatial varying environmental conditions in end-of-century forecasts. **Global Change Biology:** 26, 4638–4649. doi: 10.1111/gcb.15149.

Eisner, L. B., Yasumiishi, E. M., Andrews III, A. G., & **O'Leary, C. A.** (2020). Large copepods as leading indicators of walleye pollock recruitment in the southeastern Bering Sea: sample-Based and spatio-temporal model (VAST) results. *Fisheries Research*, *232*, 105720.

J. Grear, **C.A. O'Leary,** J.A. Nye, J.A., C. Gobler. **2020**. Effects of coastal acidification on North Atlantic bivalves: Scaling laboratory experiments to in situ populations. *MEPS*: 633, 89 – 104. https://doi.org/10.3354/meps13140

O'Leary, C.A., C.C. Stawitz, J.A. Nye. **2019**. Detecting somatic growth trends for Summer Flounder (*Paralichthys dentatus*) using a state-space approach. *Canadian Journal of Aquatic and Fisheries Science*: https://doi.org/10.1139/cjfas-2019-0213.

O'Leary, C.A., J.A. Nye, T.J. Miller, J.T. Thorson. **2019**. Comparison of multiple approaches to calculate time-varying biological reference points in climate-linked population-dynamics models. *ICES JMS:* https://doi.org/10.1093/icesjms/fsz215.

O'Leary, C.A., J.A. Nye, T. Miller. **2018**. Understanding historical Summer Flounder (*Paralichthys dentatus*) abundance patterns through incorporation of oceanography-dependent vital rates in Bayesian hierarchical models. *Canadian Journal of Aquatic and Fisheries Science*: 1 – 20. https://doi.org/10.1139/cjfas-2018-0092.

O'Leary, C.A., Perry, E., Bayard, A., Wainger, L., Boynton, W. **2015.** Linking innovative measurement technologies (ConMon and Dataflow© systems) for high-resolution temporal and spatial dissolved oxygen criteria assessment. *Envion Monit Asses*, 188: 543. doi: 10.1007/s10661-016-5543-5.

Hodgkins, C.L.S., W.R. Boynton, M.A.C. Ceballos, **C.A. O'Leary** and J.L. Humphrey. **2014**. Water Quality Monitoring Program for Tidal Creeks in Calvert County, Maryland. Ref. No. [UMCES] CBL 2014-012 [UMCES Technical Report Series No. TS-660-14.

Boynton, W. R., Hodgkins, C. L. S., **O'Leary, C. A.**, Bailey, E. M., Bayard, A. R., & Wainger, L. A. **2014**. Multi-decade Responses of a Tidal Creek System to Nutrient Load Reductions: Mattawoman Creek, Maryland USA. *Estuaries and Coasts*, *37*(1), 111-127.

Boynton, W.R., L.A. Wainger, **C.A. O'Leary**, C.L.S. Hodgkins, A.R. Bayard and M.A.C. Ceballos. **2013**. Ecosystem Processes Component (EPC). Maryland Chesapeake Bay Water Quality Monitoring Program, Level 1 report No. 30. Jul. 1984 – Dec. 2012. Ref. No. [UMCES] CBL 2013-055. [UMCES Technical Series No. TS-655-13].

Treonis A, Sutton K, Kavanaugh B, Narla A, McLlarky T, Felder J, **O'Leary C,** Riley M, Pikus A, Thomas S. **2012**. Soil nematodes and their prokaryotic prey along an elevation gradient in the Mojave Desert (Death Valley National Park, California, USA). *Diversity*. 4:363-374.

O'Leary C, J Beal. Winter **2011**. The Grey Cross. Researching Manatees. 14 (4): 1,3-4.

Treonis AM, EH Michelle, **CA O'Leary**, EE Austin, CB Marks. **2010**. Identification and localization of food source microbial nucleic acids inside soil nematodes. *Soil Biology & Biochemistry*. 42:2005-2011.

RECENT PRESENTATIONS & INVITED TALKS

O'Leary C., J. Nye, J. Thorson, T. Miller. **2020**. Incorporating oceanographic dependent time-varying natural mortality and recruitment into Bayesian hierarchical models: a summer flounder empirical study. CAPAM workshop Seattle, WA (oral presentation)* rescheduled due to COVID-19

O'Leary, C., J.T. Thorson, T.J. Miller, C.C. Stawitz, J.A. Nye. **2019**. Climate, fishing and flatfish: using Bayesian hierarchical models to understand time-varying populations and reference points. UW School of Fisheries and Aquatic Sciences Spring Seminar Series, Seattle, WA (oral presentation)

O'Leary, C., J.T. Thorson, and J.A. Nye. **2018**. Effects of Climate-Dependencies and Estimation Methods on Biological Reference Points for Summer Flounder. NOAA NMFS Population Dynamics Annual Fellow Meeting, Seattle, WA (oral presentation)

O'Leary, C, J. Nye, J. Thorson, T. Miller. **2017**. Understanding historical Summer Flounder abundance patterns through incorporation of oceanographic dependent vital rates in Bayesian state-space models. International Flatfish Symposium, Saint Malo, France (oral presentation)

O'Leary, C, J. Nye, J. Thorson, T. Miller. **2017**. Understanding historical Summer Flounder (Paralichthys dentatus) abundance patterns through incorporation of oceanographic dependent vital rates in Bayesian state-space models. ICES Annual Science Conference, Fort Lauderdale, FL, USA (oral presentation)

O'Leary, C, J. Nye, J. Thorson, T. Miller. **2017**. Demonstrating the influence of temperature dependent vital rates on fish abundances through hierarchical Bayesian models. PICES/ICES 3rd Early Career Scientist Conference, Busan, South Korea (oral presentation)

O'Leary, C, J. Nye, J. Thorson, T. Miller. **2017**. Understanding retrospective Summer Flounder (*Paralichthys dentatus*) abundance patterns through incorporation of oceanographic dependent vital rates in Bayesian state-space models. NOAA NMFS Population Dynamics Annual Fellow Meeting, Beaufort, NC, USA (oral presentation)

O'Leary, C., J. Nye. **2016**. Demonstrating the influence of temperature dependent vital rates on fish abundances through hierarchical Bayesian models. ICES Annual Science Meeting, Riga, Latvia (oral presentation)

O'Leary, C, J. Nye. **2016**. Demonstrating the influence of temperature dependent vital rates on fish abundances through hierarchical Bayesian models. NOAA NMFS Population Dynamics Annual Fellow Meeting, Santa Cruz, CA, USA (poster presentation)

O'Leary C, J Nye. **2015**. The Mechanistic Influence of Climate on Fish Population Dynamics and Distribution and Its Implications for Stock Assessment". American Fisheries Society, Portland, OR, USA (oral presentation)

O'Leary C, J Nye, J Grear, C Gobler. **2015**. Modelled Population Level Effects of Ocean Acidification on Two Bivalve Species Using Inverse Demographic Methods. Grand Challenges in Coastal and Estuarine Science: Securing Our Future. Coastal and Estuarine Research Federation. Portland, OR, USA (oral presentation)

O'Leary C, J Nye. **2015**. The Mechanistic Influence of Climate on Fish Population Dynamics and Distribution and Its Implications for Stock Assessment. Ecological Society of America, Baltimore, MD, USA (oral presentation)

O'Leary C, J Nye, J Grear, C Gobler. **2014**. Modelled Population Level Effects of Ocean Acidification on Two Bivalve Species Using Inverse Demographic Methods. American Fisheries Society. Quebec City, QC, CA (poster presentation)

O'Leary C, Heinrich **2011**. Social Structure of Chilean Dolphins and its Potential Application to Coastal Management. University of St. Andrews, UK (poster presentation)

O'Leary C, Treonis. **2010**. Identification and localization of food source microbial nucleic acids inside soil nematodes. University of Richmond Robert F. Smart Award Recipient Presentation. Richmond, VA, USA (oral presentation)

GRANTS & AWARDS

National Catch Share Program & Magnuson-Stevens Act Implementation Funds, 2020, $165,000 USD
IACS Young Writer's Scholarship, 2018**,** *$500 USD*
Distinguished Travel Award, 2018, *$1500 USD*
PhD Works Professional Development Award for Inclusion and Equity, 2018, *$75 USD*
Institute for Advanced Computational Science Travel Scholarship, 2017, *$1500 USD*
ICES Early Career Scientist Travel Grant, 2017, *$500 EUR*
Maze Landeau Travel Award, 2017, *$850 USD*
PICES/ICES 3rd Early Career Scientist Conference Travel Award, 2017, *$890 CAD*
Pikitch Family Endowed Student Research Award, 2016, *$1000.00 USD*
NMFS Sea Grant Population and Ecosystem Dynamics Fellowship, 2015, *$108750.00 USD*
School of Marine and Atmospheric Science Travel Award, 2015, *$300.00 USD*

HONORS & DISTINCTIONS

Sea Grant Population Dynamics Fellowship, 2015 – 2018
competitive fellowship program to forge collaborations between NOAA and population dynamics/marine resources PhD students
Pikitch Family Endowed Student Research Award, 2016
recognizes outstanding PhD research proposals
Sea Grant Fellow, 2014 – 2016
American Fisheries Society Best Student Poster Finalist, 2014**,** Quebec City, QC
Robert F. Smart Award in Biology, 2010
most outstanding research proposal at University of Richmond
Richmond Arts & Sciences Research Grant, 2010
Howard Hughes Medical Institute (HHMI) scholar, 2009
Beta Beta Beta Biological Honors Society Elected Vice President, 2009

TEACHING

VAST Workshop Instructor for use and theory of spatio-temporal modelling tool
Winter 2020
Alaska Fisheries Science Center, WA
Guest Lecturer for Principles of Fish Biology and Management
Spring 2015
Stony Brook University, NY
Teaching Assistant for Fundamentals of Scientific Inquiry in the Biological Science
Spring 2014
Stony Brook University, NY
Teaching Assistant for Long Island Marine Habitats
Fall 2013
Stony Brook University, NY

PROFESSIONAL OUTREACH & EQUITY/INCLUSION

Science Communication

Skype a Scientist, 2018 – present
Engaging with classrooms from around the world via live Q&A sessions with a scientist

Riverhead Foundation, 2015 - 2016
Volunteered with Education & Outreach to educate the public about marine organisms found in their waters

The Gonzo Scientist, 2011 - present
Founded this science communication site and blog to translate scientific news and articles for the public to promote scientific education and access to science

AFS Habitat, 2016 - 2018
Contributed science articles about up to date research in fisheries and ecosystem sciences written for the public

Equity & Inclusion

Postdoc Diversity Alliance, Leadership Team, 2019
Leadership team, member, & ally of postdoc community to increase diversity of research leaders in academia & industry, advocate for institutional support of equity & inclusion, & promote professional development among peers. Helped organize Diversity Statement event.

Quantitative Women in STEM, 2019
Founded & organized a working group as a platform for women in STEM to raise workplace equity issues as well as forge collaborations

500 women science Seattle chapter, 2019
Member of local chapter whose goal is to 'promote an inclusive scientific *community that brings progressive* science*-based solutions to local and global challenges'*

Abstract Reviewer for SACNAS, 2019
Volunteer conference abstract reviewer for the Society for Advancement of Chicanos/Hispanics and Native Americans in Science- is an inclusive organization dedicated to fostering the success of Chicanos/Hispanics and Native Americans

RLadies Seattle
Member of the local chapter of R-Ladies Global that seeks to promote diversity in the R community

STEM student promotion

Clean Tech Competition Judge, 2017
Real-world engineering research and design competition for pre-college youth

Ocean Bowl Volunteer, 2015 - 2016
Judge at local Ocean (Bay Scallop) Bowl competition for high school students

STEM & Writing Tutor
All levels from primary school to undergraduate students

Committees

American Fisheries Society Student Subunit, 2017 - 2018
Founding member and treasurer of the Stony Brook University AFS student Subunit

Institute for Advanced Computational Science governing body member, 2018
Member to organize professional and social events for Stony Brook University computational graduate students

PROFESSIONAL COURSEWORK & TRAINING

ICES/QUEST Applications of quantitative methods in fishery management, 2017
Management Strategy Evaluation Workshop
Instructors: Gavin Fay, Trevor Branch, Erik Franklin, Cam Ainsworth, Brice Semmens

American Fisheries Society Bayesian II, 2015
Intermediate Bayesian Inference Using Gibbs Sampling (BUGS) for Fish Biologists
Instructors: Dan Rawding, Pete McHugh, Catherine Michielsens

Stock Assessment Crash Course, 2014
ADMB Instructional Course
Instructors: Olaf Jensen, John Wiedenmann

MeTooSTEM Action workshop, 2019
Methods to take effectively take action against sexual harassment at universities
Instructors: Dr. BethAnn McLaughlin, MeTooSTEM

Building Healthy Academic Workplaces, 2019
Strategies to respond to sexual harassment and gender discrimination at UW
Instructors: Kiana Swearingen and Page Sechrest, SafeCampus UW

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Dr. James Thorson
NOAA
Alaska Fisheries Science Center
james.thorson@noaa.gov

Dr. Janet Nye
Stony Brook University
School of Marine and Atmospheric Sciences
janet.nye@stonybrook.edu

Dr. Heather Lynch
Stony Brook University
Ecology and Evolution
heather.lynch@stonybrook.edu

Dr. Tim Miller
NOAA
Northeast Fisheries Science Center
timothy.j.miller@noaa.gov