

curriculum vitae

2018-12-31

Contact

Nissa Cooper Ferm

email: nissa.ferm@gmail.com

phone: 206-755-4606

Degrees

Master in Secondary Science Education (MEd), completed 2015

University of Washington Tacoma: Tacoma, Washington USA

School of Education, Program: Secondary Certification in Sciences

Thesis: *Effective Incorporation of Statistics in the General Biology Classroom: Going Beyond the Average and Getting to Significance*

Bachelor of Science (BS), completed 2000

San Francisco State University: San Francisco, California USA

Department of Biology: emphasis in marine biology and limnology

Certifications

Statistical Analysis with R Programming, completed 2017 (9 month program)

University of Washington: Seattle, Washington USA

Professional and Continuing Education

Quarter 1: Introduction to Statistical Analysis with R

Quarter 2: Data Analysis and Modeling with R

Quarter 3: Advanced R Programming and Graphics

Secondary Science Teaching Certification, completed 2014 (portfolio)

Teacher Performance Assessment (edTPA) is a performance-based, subject-specific assessment. Candidates prepare a portfolio of materials during their student teaching clinical experience and submit unedited video recordings of themselves at work in a real classroom as part of a portfolio that is scored by highly trained educators.

Biology Endorsement, completed 2014 (test)

State of Washington, Office of Superintendent of Public Instruction

Washington Educator Skills Test in Biology which is a National Evaluation Series™ (NES®) test. This is the official test to fulfill the content knowledge requirement for candidates seeking an endorsement to a Washington State teaching certificate.

Technical Skills

- R programming
- Git, GitHub, GitLab

- SQLite
- Microsoft Office: Excel, Word, Publisher, Power Point
- ArcMap

Employment History

Fisheries Biologist, 2009 – Present

Contractor for National Oceanic and Atmospheric Administration (NOAA)/ Alaska Fisheries Science Center (AFSC) / Resource Assessment and Conservation Engineering (RACE)/ Recruitment Processes/ Ecosystems & Fisheries-Oceanographic Coordinated Investigations: Western Regional Center Seattle, Washington USA
Contracting companies:

- Lynker Technologies, 2016 to present
- Ocean Associates Incorporated, 2011 - 2016
- Earth Resources Technology, 2009 – 2011

Current projects include developing a diet index for juvenile pollock. The diet index was developed using machine learning techniques. Writing an R package called FastrCAT which creates a data pipeline for a non-standard format oceanographic data. The package functions produce automated reports, maps, plots, and prepare data for input into the database. Contributing data analysis products and writing about the diets of Arctic juvenile flatfish. Ongoing projects include verifying the taxonomic identification of zooplankton from yearly sampling, processing diets of juvenile groundfish, field work in the Bering and Arctic Seas, managing diet data, performing statistical analysis, creating data visualizations, and presenting findings to peers and the public as talks or in writing. Visit the programs website.

Marine Science Educator, 2013 (February - August)

The Seattle Aquarium: Seattle, Washington USA

Taught high school students in beach monitoring techniques, sampling design, analysis and presentation of data they collected. The goal of the program was to provide meaningful, inquiry-based field based experiences that allowed them to participate in real-world problem solving. Learn more about the Citizen Science Program

Plankton Lab Coordinator, 2012 (June - September)

The Seattle Aquarium: Seattle, Washington USA

Worked with a professional team of educators, volunteers, general visitors and groups from the aquarium and provided to guests of all ages a unique in-depth guided experience into the world of plankton. Managed and trained a small group of volunteers to assist with the plankton lab and developed educational material for the lab.

Marine Science Instructor, 2012 (March - June)

Pacific Marine Research: Seattle, Washington USA

Taught large groups of elementary aged children about the Puget Sound ecosystem, all on a boat. Teaching areas include: plankton sampling, microscope work, benthic and pelagic species, water quality and stewardship, ecology, scuba, and geology.

Research Scientist, 2010 & 2011 (January - March)

Contractor for National Oceanic and Atmospheric Administration/Southwest Fisheries Science Center/Antarctic Ecosystems Research Division/ Antarctic Marine Living Resources: Southern Ocean near South Shetland Islands

Lead zooplankton taxonomist on shipboard mission to evaluate krill and zooplankton populations in Antarctic waters. While at sea wrote a taxonomic manual for identification of common species which occurred in research area. Trained team on identification of zooplankton species.

Graduate Research Assitantship 2006 - 2009

University of Washington/School of Aquatic and Fisheries Sciences/Wetland Ecosystems Team: Seattle, Washington USA

Focus of research was categorizing potential risk of coastal waters along the West Coast of the United States as sources of invasive zooplankton. Performed collection, entry, analysis, and visualization of data. Wrote and contributed to technical reports, journal articles, and presentations.

Research Scientist, 2002 - 2006

University of Washington/ School of Aquatic and Fisheries Sciences/Wetland Ecosystems Team: Seattle, Washington USA

Focus of research was invasive zooplankton entry into Puget Sound. Collection of samples required coordinating with the Seattle Port Authority, Shipping Companies, and the Washington Department of Fish and Wildlife to board vessels and maintain chain of custody of collected samples and paperwork. Experiments at an offshore field station and oil tankers were performed to test the efficacy of ballast water treatment devices. I managed data collection and entry for projects. Provided summary data products and contributed writing and data visualizations for journal articles, technical reports, and talks. Swedish Public Radio Interview

Research Technician, 2001 - 2002

University of Washington/ School of Aquatic and Fisheries Sciences/ Wetland Ecosystems Team: Seattle, Washington USA

Served as a laboratory and field technician across multiple concurrent projects. The main focus of research was invasive zooplankton entry into Puget Sound through ballast water. Responsibilities were to manage sample collection, identification of species, data entry, summarizing findings, and submitting data and findings to senior researchers.

Research Technician, 2000 - 2001

San Francisco State University/ Estuary & Ocean Science Center/ Kimmerer Lab: Tiburon, California USA
Served as a laboratory and field technician monitoring growth of zooplankton species in the San Francisco Estuary. Required field collection of specimens, identification of species, and running growth rate experiments. Managed data collection and entry.

Student Research Assistant, 2000

San Francisco State University/ Estuary & Ocean Science Center/ Kimmerer Lab Tiburon, California USA
Assisted researchers in laboratory and field work. Trained in identification of zooplankton from the San Francisco Estuary.

Continuing Training and Education

Swedish Language, June 2018 - present

Swedish Cultural Center: Seattle, Washington USA

Beginning IV, Intermediate I

The Workshop on Integration and Visualization of Technology of ICES Data, May 2018 (2 day)

Headquarters of the International Commission for the Exploration of the Sea: Copenhagen, Denmark

Multidisciplinary teams spent two days building data products to better present ICES data graphically before presenting products to a panel of judges from ICES Data and Information Group (DIG).

Applied Machine Learning Workshop, January 2018 (2 day)

Taught by Max Khun of RStudio: San Diego, California USA

The two-day workshop provided an overview of using R for supervised learning. The session stepped through the process of building, visualizing, testing and comparing models that are focused on prediction.

Marine Policy, 2007 - 2009

University of Washington: Seattle, Washington USA College of the Environment: School of Marine and Environmental Affairs

Graduate level course work in marine and environmental policy.

Publications

- Hurst TP, Miller JA, Ferm N, Heintz RA, Farley EV (2018) *Spatial variation in potential and realized growth of juvenile Pacific cod in the southeastern Bering Sea*. Mar Ecol Prog Ser 590:171-185. [view journal article](#)
- Ferm N, Lamb J, Kimmel D (2017) *Rapid Zooplankton Assessment and Long-Term Time Series, Western Gulf of Alaska, Spring and Summer of 2017, Chapter in Ecosystem Considerations 2017 Status of the Gulf of Alaska Marine Ecosystem 2017* North Pacific Fishery Management Council [view technical report](#)
- Ferm N (2016) *Fall Gulf of Alaska Zooplankton Rapid Assessment, Chapter in Ecosystem Considerations 2016 Status of the Gulf of Alaska Marine Ecosystem 2016* North Pacific Fishery Management Council [view technical report](#)
- Ortiz I, et al. (2016) *Climate to fish: Synthesizing field work, data and models in a 39-year retrospective analysis of seasonal processes on the eastern Bering Sea shelf and slope*. Deep Sea Research Part II: Topical Studies in Oceanography, Vol: 134, Page: 390-412 [view journal article](#)
- Ferm N (2015) *Spring Gulf of Alaska Zooplankton Rapid Assessment Chapter in Ecosystem Considerations 2015 Status of Alaska's Marine Ecosystems* North Pacific Fishery Management Council [view technical report](#)
- Cordell J, Lawrence D, Ferm N, et al. (2009) *Factors influencing densities of non-indigenous species in the ballast water of ships arriving at ports in Puget Sound, Washington, United States* Aquatic Conservation: Marine and Freshwater Ecosystems, Vol:19, Issue 3, Pages 322-343 [view journal article](#)
- Perrins J, Cordell J, Ferm N, et al. (2006) *Mesocosm experiments for evaluating the biological efficacy of ozone treatment of marine ballast water* Marine Pollution Bulletin, Vol: 52, Issue 12, Pages 1756-1767 [view journal article](#)
- Matousek R, et al. (2006) *Electrolytic Sodium Hypochlorite System for Treatment of Ballast Water* Journal of Ship Production, Vol: 22, Number 3, Pages 160-171
- Ferm N, (2006), *Captain Copepods's Coloring Book, Plankton and Ballast Water* Washington Sea Grant Program [download coloring book](#)
- Kimmerer W, Ferm N, Nicolini M, Peñalva C (2005), *Chronic food limitation of egg production in populations of copepods of the genus Acartia in the San Francisco estuary* Estuaries Vol:28:, Issue:4, Pages 541–550 [view journal article](#)
- Pierson J, Leising C, Halsband-Lenka C, Ferm N (2005), *Vertical distribution and abundance of Calanus pacificus and Pseudocalanus newmani in relation to chlorophyll a concentrations in Dabob Bay, Washington* Progress in Oceanography Vol:67, Issues 3–4, Pages 349-365 [view journal article](#)

Presentations

- A New Diet Index: Predicting fish length from diet composition*, December 2018
National Oceanic and Atmospheric Administration Western Regional Center, Ecosystems and Fisheries Oceanographic Coordinated Investigations Program Seminar Series: Seattle, Washington USA. (30 minute talk)
- Guts to Bits: Fish Diet Data, Its Limitations, and Establishing Knowledgeable Priors: As Told Through a Juvenile Pollock Predictive Model.*, May 2018
University of Washington, School of Aquatic and Fisheries Sciences Quantitative Seminar ,invited speaker, (45 minute talk) [watch seminar](#)
- Factors Influencing Ontogenetic Diet Shifts of Young of the Year Pollock: Predicting Fish Length from Diet Composition*, February 2018
Ocean Science Meeting, Machine Learning in Biological Oceanography Session: Portland, Oregon USA. (poster)

Behavioral Risk and Vulnerability in Juvenile Flatfish foraging from a Bering Sea Nursery Habitat, December 2015

National Oceanic and Atmospheric Administration Western Regional Center, Ecosystems and Fisheries Oceanographic Coordinated Investigations Program Seminar Series: Seattle, Washington USA. (30 minute talk)

Using Prey Life-History to Infer Temporal and Spatial Shifts in Foraging Behavior of Juvenile Flatfish from an Alaskan Nursery Habitat, August 2015

American Fisheries Society Annual Meeting: Portland, Oregon USA (20 minute talk)

A Quantitative Approach for Targeted Subsampling of Juvenile Fish to Obtain Adequate Description of Diet, August 2015

American Fisheries Society Annual Meeting: Portland, Oregon USA (poster)

Washington, Oregon, and California domestic ballast water regulation: Is exchange at 50 miles adequate?, April 2007

Fisheries and Marine Ecosystems Conference: Crescent Beach, British Columbia, (15 minute talk)

Examination of Mesozooplankton Present in Ballast Water of Ships Entering Puget Sound, Washington, March 2005

Puget Sound Georgia Basin Conference: Seattle, Washington USA (20 minute talk)

Examination of Mesozooplankton Present in Ballast Water of Ships Entering Puget Sound, Washington., November 2004

Society for Environmental Toxicology and Chemistry World Congress: Portland, Oregon USA (Poster)

Awards

National Marine Fisheries Service Team Member of the Year, 2016

For outstanding contributions in advancing the mission of the United States Federal agency NOAA's, National Oceanic and Atmospheric Administration, office of the National Marine Fisheries Service (NMFS), as recognized by their peers. Employees and contractors whom consistently demonstrate the high levels of professional expertise, personal commitment, leadership, and teamwork needed to reach our sustainable natural resource goals.

Antarctic Service Medal, 2011

Issued in 2017 by the United States Federal Agency the National Science Foundation for service in 2010/11. Civilian participants who deploy to an Antarctic research station or vessel and remain south of 60 degrees South latitude are eligible to receive an Antarctica Service Medal and Certificate from the National Science Foundation.

Hobbies

Weight lifting, crafting, and reading science fiction