Linnea Brynn Pecher

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EDUCATION

Master of Science: Ocean and Earth Sciences **December 2016**
Concentration: Biological Oceanography Old Dominion University, Norfolk, VA
Current GPA: 3.71
Thesis: Distributions of *Euphausia superba, Euphausia crystallorophias,* and *Pleuragramma antarcticum* with correlations to environmental variables in the Western Ross Sea, Antarctica

Bachelor of Science: Ocean and Earth Sciences **May 2014**
Concentration: Biological Oceanography Old Dominion University, Norfolk, VA
Minor: Biology
Cumulative GPA: 3.31
Senior Thesis: A Study of Phytoplankton and Light Dynamics at Lake Ballard

PUBLICATIONS

Davis, L.B. Hofmann, E.E., Klinck, J.M., Dinniman, M., Piñones, A. 2017. Distributions of *Euphausia superba, Euphausia crystallorophias,* and *Pleuragramma antarctica* and correlations with environmental variables in the western Ross Sea, Antarctica, *Marine Ecology Progress Series,* 584: 45-65.

Davis, L.B. Distributions of *Euphausia superba, Euphausia crystallorophias,* and *Pleuragramma antarctica* and correlations with environmental variables in the western Ross Sea, Antarctica. **Master of Science Thesis.** ProQuest LLC, December 2016.

Piñones, A., Hofmann, E.E., Dinniman, M.S., and **Davis, L.B.** 2015. Modeling the transport and fate of euphausiids in the Ross Sea. *Polar Biology*, **39(1),** 10.1007/s00300-015-1798-5.

PRESENTATIONS

Davis, L.B. Hofmann, E.E., Klinck, J.M., Mulholland, M., Meza, A. Understanding Environmental Controls on *Cochlodinium polykrikoides* Blooms in the Lower Chesapeake Bay. **Poster Presentation**. Fall American Geophysical Union 2018, Washington D.C. December 2018.

Davis, L.B. Hofmann, E.E., Klinck, J.M., Dinniman, M., Piñones, A. Comparisons of *Euphausia superba, Euphausia crystallorophias, Pleuragramma antarcticum*, and environmental distributions in the Western Ross Sea. **Poster Presentation**. Gordon Research Conference and Gordon Research Seminar on Polar Marine Science 2017, Ventura, CA. March 2017.

Davis, L.B. "The Secret to the Antarctic Foodweb." One of two representatives from ODU's College of Sciences at the Graduate Student Science Pubs, Norfolk, Virginia, March 2017.

Davis, L.B. Climatological Distributions of *Euphausia superba, Euphausia crystallorophias,* and *Pleuragramma antarcticum* with correlations to environmental features in the Western Ross Sea, Antarctica. **Master's Thesis Defense.** Williams Engineering & Computational Sciences Building (ECSB). Old Dominion University, Norfolk, VA. November 2016.

Davis, L.B. Climatological Distributions of *Euphausia superba, Euphausia crystallorophias,* and *Pleuragramma antarcticum* with correlations to environmental features in the Western Ross Sea, Antarctica. **Invited Speaker.** Dr. Chet Grosch Symposium on "The Art of Fluid Dynamics," Barry M. Kornblau Alumni Center. Old Dominion University, Norfolk, VA. October 2016.

Davis, L.B., Hofmann, E.E., Klinck, J.M., Dinniman, M., Piñones, A. Comparisons of *Euphausia superba, Euphausia crystallorophias, Pleuragramma antarcticum*, and environmental distributions in the Western Ross Sea. **Poster Presentation**. 2016 Annual Graduate Research Achievement Day (GRAD). Old Dominion University, Norfolk, VA. April 2016.

Davis, L.B., Hofmann, E.E., Klinck, J.M., Dinniman, M., Piñones, A. Comparisons of *Euphausia superba, Euphausia crystallorophias, Pleuragramma antarcticum*, and environmental distributions in the Western Ross Sea. **Poster Presentation**. Ocean Sciences Meeting 2016, New Orleans, LA. February 2016.

Davis, L.B., Hofmann, E.E., Piñones, A., Klinck, J.M. Climatological distributions of *Euphausia superba* and *Euphausia crystallorophias* in the Ross Sea. **Poster Presentation**. Ocean Sciences Meeting 2014, Honolulu, HI. February 2014.

PROFESSIONAL EMPLOYMENT AND INTERNSHIP EXPERIENCE

Research Associate August 2017 – present
Center for Coastal and Physical Oceanography Old Dominion University, Norfolk, VA
Supervisor: Dr. Eileen E. Hofmann

- Description: Quantitative data analysis, statistical methods, familiarity with MATLAB coding and knowledge of the processes related to harmful algal blooms in the Lafayette River including specifically the dinoflagellate *Cochlodinium polykrikoides.* Developing parameterizations for input to mathematical models for harmful algal blooms and implementation and analysis of simulations designed to test hypotheses related to the controls of the harmful algal blooms. Preparation and writing manuscripts for publication in the peer-reviewed scientific literature. Presentation of project results at scientific meetings.

Seasonal Park Ranger/ Environmental Educator Spring 2017
Elizabeth River Project Portsmouth, VA

- Description: Worked with a team of education rangers and taught Elizabeth River environmental education, sea-level rise, ecology, native plants and animals, water quality testing and more to preschoolers

through 5th grade students during elementary school field trips at Paradise Creek Nature Park. Taught in-depth about Elizabeth River environmental challenges and solutions while fostered a new generation of river stewards throughout its restoration. Other duties include park station set up, outreach, and daily park maintenance including trash disposal and removal of invasive species.

Junior Biological Fish & Zooplankton Technician August 2016
NOAA/ National Marine Fisheries Service South Shetland Islands, Antarctica
Southwest Fisheries Science Center
Antarctica Ecosystem Research Division
Research Advisor: Christian Reiss

- Description: Assisted in zooplankton research under Principal Investigator including identifying and counting all species found in IKMT net samples, measured and counted salps per U.S. AMLR sampling protocols, assisted krill demographic study including measuring and staging krill samples from IKMT net tows based on AMLR sampling protocols, assisted in pelagic fish research including identifying and counting all species found in IKMT net samples, AMLR database entry according to protocol, assisted in clean up and inventory of all zooplankton and pelagic fish research supplies, equipment, and samples at the end of the cruise.

Graduate Research Assistant Summer 2015 & 2016
Center for Coastal and Physical Oceanography Old Dominion University, Norfolk, VA
Research Advisor: Dr. Eileen E. Hofmann

- Description: Researched and constructed climatological distributions of three key species in the Ross Sea: *E. superba, E. crystallorophias, and P. antarcticum*. Correlations between patterns of density, bathymetry and other environmental features were distinguished with statistical analyses.

Lead Graduate Teaching Assistant September 2015 - May 2016
Department of Ocean, Earth, & Atmospheric Science Old Dominion University - Norfolk, VA

- Introduction to Oceanography Lab

Responsibilities include (as well as all GTA duties): Set up and tear down the designated lab and equipment at the beginning and end of the teaching week (including necessary lab equipment for the R/V Slover cruise field trip), communicate the significance of each lab to the other TA's at the weekly TA meeting, create informative lecture PowerPoints, provide answer keys to the lab manual, lead by example on how to educate students and deal with arising complications during lab, provide assistance and guidance to the other TA's, fix broken lab equipment, lead exam review sessions for students, and help create and edit exam questions.

Graduate Teaching Assistant (GTA) September 2014 – December 2016
Department of Ocean, Earth, & Atmospheric Science Old Dominion University - Norfolk, VA

- Introduction to Oceanography Lab

Responsibilities include: Teach introduction to oceanography lab to non-science, college level students with a variety of backgrounds and experiences, mentor students outside of the scheduled lab time, grade papers, resolve complications that arise during lab, administer exams, provide insight for the subsequent lab manual, organize lab supply room, and most importantly, enlighten the importance of science and the ocean to non-oceanography students.

Undergraduate Research Assistant Internship January 2013 - May 2014
Center for Coastal and Physical Oceanography Old Dominion University, Norfolk, VA
Research Advisor: Dr. Eileen E. Hofmann

- Project: Climatological distributions of *Euphausia superba, Euphausia crystallorophias* and *Pleuragramma antarcticum* in the Ross Sea.

Undergraduate Research Assistant Internship March 2013: 40+ Hours/Week
Old Dominion University Florida Keys, Florida
Research Advisor: Dr. Mark Butler IV

- Project: Assisted Dr. Butler & his graduate students with fieldwork based sponge restoration, management, environmental conservation & personal research projects. Includes collecting, removing, and tagging sponges, research snorkeling, and boat maintenance.

FIELD SKILLS

ODU's R/V *Fay Slover*

- Deploying a CTD
- Rosette Sampler
- Casting phytoplankton tows
- Benthic grab

RVIB *Nathaniel B. Palmer*

- Casting an Isaak-Kidd Midwater Trawl (IKMT)
- Deploying Current Drifters
- Deploying an Expendable Bathythermograph (XBT)

Other Field Skills

- Deploying a Li-Cor 185-B meter
- Peristaltic pump & Secchi Disk
- Boat maintenance & Navigation
- Recreational Diving
- Recreational and Research Snorkeling
- Sponge restoration using sponge transplantation techniques
- Wetland restoration using shoreline erosion control techniques
- Seagrass and Coral Reef measurement practices
- Atlantic and Gulf Rapid Reef Assessment (AGRRA) Protocol

LABORATORY SKILLS

- Extracting chlorophyll (Welschmeyer Method)
- Sonication
- Centrifugation
- Lugol's Acid staining
- Bomb Calorimetry
- Settling chambers (Utermoehl & borosilicate coverglass system)
- Inverted microscopy
- Filtration
- Stereoscopic Microscopy
- Winkler titration and dissection under compound microscopes
- Processing large and small fraction zooplankton samples

Biostatistical and computer programs:

- Microsoft Excel
- Microsoft Word
- Microsoft PowerPoint
- Matlab
- Some SAS and SPSS
- ArcGIS
  - Substantial use with Spatial Analyst, Statistical Analyst, and Spatial Statistics Tools
  - Substantial experience including collecting and organizing data within ArcGIS, Matlab, and Excel
- Surface Mapping System Software Surfer 32

GRADUATE RESEARCH PROJECTS

Master's Thesis Fall 2014 – Fall 2016
Graduate Directed Research Old Dominion University
Primary Research Advisor: Dr. Eileen E. Hofmann
Research Advisors: Dr. John M. Klinck, Dr. Ari Friedlaender, Dr. Pete Sedwick, and Dr. Mark Butler IV

- Consolidated any and all existing distributions of the three key mid-trophic level species in the Ross Sea, Antarctica (*Euphausia superba, Euphausia crystallorophias,* and *Pleuragramma antarcticum*) to create one climatological distribution for each species. From there, relationships were established between biological distributions and environmental variables (water temperature, bathymetry, sea ice concentration, surface chlorophyll, mixed layer depth, surface speed, distance to coast, and distance to shelf break) using a hierarchy of statistical methods including: histograms, Spatial Autocorrelation, and Empirical Orthogonal Function Analysis (EOF). Computer software programs used for analysis include: Surface Mapping System Software Surfer 32, Excel, Matlab, and ArcGIS with substantial usage of ArcGIS and its statistical packages including tools found under the Spatial Analyst, Statistical Analyst, and Spatial Statistics toolboxes.

UNDERGRADUATE INDEPENDENT RESEARCH PROJECTS

Ocean and Earth Science Field Studies class September 2013 - May 2014
Undergraduate directed research Old Dominion University
Research Advisor: Dr. Fred C. Dobbs

- Studied the changes in phytoplankton community composition and light dynamics at Lake Ballard.

Field Methods in Marine Biology May 2013
Undergraduate directed research South Water Cay, Belize
Research Advisor: Dr. Mark J Butler IV

- Compared the diurnal-nocturnal variation in tropical reef fishes amongst the *Montastraea annularis*, mounding coral in a patch reef.

Data Collection and Analysis in Oceanography class April 2013
Undergraduate directed research Old Dominion University
Research Advisor: Dr. Richard C. Zimmerman

- Studied the physical property relationships against depth in the Chesapeake Bay.

PROFESSIONAL AFFILIATIONS AND SOCIETIES

The Oceanography Society (TOS) 2013 - present
Association for the Sciences of Limnology and Oceanography (ASLO) 2013 - present

PROFESSIONAL SERVICE

Reviewer of Marine Ecology Progress Series 2017

SCHOLARHIPS AND AWARDS

Dorothy Brown Smith Scholarship — December 2015
Shining Star Recognition — Spring 2015
Dean's Education Abroad Award — April 2013
Dean's Honor's List- Old Dominion University — Fall 2009, Fall 2010, Spring 2011, Fall 2011, Fall 2013- Fall 2016

EXTRACURRICULAR ORGANIZATIONS & ACTIVITIES

Treasurer of OEAS Graduate Student Organization — May 2015 – May 2016
- Raised $1400 and Donated 300 meals to local food bank
- Managed the GSO budget of over $3000

OEAS Graduate Student Organization — Fall 2014 – December 2016
Earth and Ocean Science Club (EOS), Old Dominion University — 2012 - 2014
Marine Biology Student Association (MBSA), Old Dominion University — 2011 - 2014
National Society of Collegiate Scholars (NSCS), Old Dominion University — 2011 - 2014
Open Water SCUBA certified — September 2010

VOLUNTEER EXPERIENCE

Boy Scout Merit Badge in Oceanography — July 2015, Spring 2016 & 2017: 8 hours/Day
- Assisted with NOAA and C0-OPS Chesapeake Office by providing educational service to the local boy scouts in completion of their merit badge in oceanography. Offered lessons in marine life ecology with hands-on live specimens collected from the Lafayette River.

Clean the Bay Day, Virginia Beach, Virginia — June 2015 & 2016: 4 Hours/Day
- Assisted the Chesapeake Bay Foundation with their annual Clean the Bay Day. Helped by picking up and disposing of trash within the Chesapeake Bay's watershed.

Virginia Science, Technology, Engineering and Applied Mathematics (STEAM) Academy — June 2015
- Assisted with hands-on activities for middle school students as part of a program on the ecology of the Chesapeake Bay Watershed.

Ecofest 2015, Norfolk VA — May 2015: 8 Hours/Day
- Assisted in outreach and educating the public with hands-on oceanographic equipment such as a benthic grab, plankton tow and CTD aboard ODU's R/V Riptide.

18th Annual Blue Crab Bowl, Virginia Institute of Marine Science — February 2015: 10 Hours/Day
- Served as a test score room runner for different teams participating in Virginia's regional high school academic competition focused on the ocean sciences.

Colley Bay Wetland Restoration, Norfolk, VA — February 2013: 8 Hours/Day
- Assisted the Elizabeth River Project with reconstruction fieldwork pertaining to wetland restoration and environmental conservation projects including removing invasive wetland species and restoring natural shorelines.

Chesapeake Bay Foundation's Oyster Restoration/Oyster Gardening Norfolk, VA — November 2012

- Assisted the CBF in fieldwork with cleaning oyster shells, counting spat, bagging and relocating oyster shells to various oyster nursery gardens in the Lafayette River.

Ocean's 2012 Conference, Virginia Beach, VA October 2012: 10 Hours/Day

- Served on the bag assembly/ setup support/ human arrow committee. Duties included assembling the conference bags, hanging up signs and helping direct attendees during the conference.

RELEVANT COURSEWORK

- Physical Geology
- Calculus I & II
- University Physics I & II
- Statistics (Data Analysis)
- Data Collection & Analysis in Oceanography
- Biological Oceanography
- Chemical Oceanography
- Geological Oceanography
- Physical Oceanography
- Field Methods in Marine Biology, (Study Abroad in Belize)
- Marine Biology & Marine Ecology
- Global Earth Systems
- Ocean and Earth Science Field Studies
- Organic Chemistry
- Biochemistry
- Matlab
- Ecosystem Ecology
- Environmental Statistics
- ArcGIS in Life Sciences
- Aquatic Pollution
- Marine Vertebrate Ecology/ Management Conservation