CURRICULUM VITAE

Hongsheng Bi

Chesapeake Biological Laboratory
University of Maryland center for Environmental Science
Solomons, Maryland 20688

I. Education

1994	B.Sc., Ocean University of Qingdao, Marine Aquaculture.
1996	M.Sc., Institute of Oceanology Chinese Academy of Sciences, Marine Ecology (Macrobenthic ecology).
2005	Ph.D., Louisiana State University, Oceanography. Dissertation: Population dynamics of *Clausocalanus furcatus* (Copepoda, Calanoida) in the northern Gulf of Mexico.

II. Professional Background

2005 - 2008	Post Doctoral Research Associate, Cooperative Institute for Marine Resources, Oregon State University, Newport, OR 97365
2009.1 – 2009.5	Research Assistant Professor, Cooperative Institute for Marine Resources Studies, Oregon State University, Newport, OR 97365
2009.8 – 2015.6	Assistant professor, University of Maryland Center for Environmental Science, Solomons, MD 20688
2015.7 – 2023.6	Associate professor, University of Maryland Center for Environmental Science, Solomons, MD 20688
2023.7 – Present	Professor, University of Maryland Center for Environmental Science, Solomons, MD 20688

III. Research

A. Areas of professional expertise
Fisheries oceanography, Plankton ecology, Plankton imaging systems, Deep learning systems for automated plankton image recognition.

B. Publications

1. Papers in Refereed Journals (*corresponding authors)

Bi H*, Benfield MC (2006) Egg production rates and stage-specific development times of *Clausocalanus furcatus* (copepoda, Calanoida) in the northern Gulf of Mexico, Journal of Plankton Research, 28, 1199-1216.

Bi H*, Ruppel RE, Peterson WT (2007) Modeling the salmon pelagic habitat off the Pacific Northwest coast using logistic regression, Marine Ecology Progress Series, 336, 249 - 265.

Bi H*, Ruppel RE, Peterson WT, Casillas E (2008) Spatial distribution of yearling Chinook and coho salmon ocean habitat off Washington and Oregon U.S.A. Fisheries Oceanography, 17, 463-476.

Bi H*, Feinberg L, Shaw CT, Peterson WT (2011) Estimating development times for stage-structured marine organisms are biased if based only on survivors. Journal of Plankton Research 33, 751-762, doi:10.1093/plankt/fbq138. [UMCES Cont. No. 4518].

Bi H*, Peterson WT, Lamb J, Casillas E (2011) Copepods and salmon: characterizing the spatial distribution of juvenile salmon along the Washington and Oregon coast, U.S.A., Fisheries Oceanography, 20, 125-138 [UMCES Cont. No. 4519].

Bi H*, Rose KA, Benfield MC (2011) Estimating copepod stage-specific mortality rates in open ocean waters: a case study from the northern Gulf of Mexico, U.S.A., Marine Ecology Progress Series, 427, 145-159 [UMCES Cont. No. 4520].

Bi H*, Peterson WT, Strub PT (2011) Transport and coastal zooplankton communities in the northern California Current system. Geophysical Research Letter, VOL. 38, L12607, 5 PP, 2011, doi:10.1029/2011GL047927 [UMCES Cont. No. 4522].

Wan Z, Jonasson L, **Bi H** (2011) N/P ratio of nutrient uptake in the Baltic Sea. Ocean Science, 7, 693-704. [UMCES Cont. No. 4672].

Bi H*, Peterson WT, Peterson JO, Fisher JL (2012) A comparative analysis of coastal and shelf-slope copepod communities in the northern California Current system: Synchronized response to large-scale forcing? Limnol. Oceanogr 57 (5), 1467-1478. [UMCES Cont. No. 4656].

Yu H, **Bi H***, Burke B, Lamb J, Peterson WT (2012) Spatial variations in the distribution of yearling spring Chinook salmon off Washington and Oregon using COZIGAM analysis. Marine Ecology Progress Series, 465, 253-265. [UMCES Cont. No. 4657].

Bi H*, Cook S, Yu H, Benfield MC, Houde ED (2013) Deployment of an imaging system to investigate fine-scale spatial distribution of early life stages of the ctenophore *Mnemiopsis leidyi* in the Chesapeake Bay. Journal of Plankton Research, 35 (2), 270-280. [UMCES Cont. No. 4738].

Wan Z, **Bi H**, She J (2013) Comparison of two light attenuation parameterization focusing on timing of spring bloom and primary production in the Baltic Sea. Ecological Modelling. 259, 40-49. [UMCES Cont. No. 4616]

Liu H, Hopcroft RR, **Bi H** (2013) Statistical modeling of copepod growth rates: Comparisons for data collections using the artificial cohort (AC) method. Journal of Experimental Marine Biology and Ecology. 448, 271 – 280. [UMCES Cont. No. 4892]

Wan Z, **Bi H** (2014) Comparing model scenarios of variable plankton N/P ratio versus the constant one for the application in the Baltic Sea. Ecological Modelling. 272, 28-39. [UMCES Cont. No. 4639]

Bi H*, Ji R, Liu H, Jo Y, Hare J (2014) Decadal changes in zooplankton of the Northeast U.S. continental shelf. PLOS One. 9(1):e87720. [UMCES Cont. No. 4905]

Bi H, Yu H, Pinchuk A, Harvey R (2015) Interannual summer variability in euphausiid populations on the eastern Bering Sea shelf during the recent cooling event (2008-2010). Deep Sea Research Pt I, 95: 12-19. [UMCES Cont. No. 4966]

Bi H*, Guo Z, Benfield MC, Fan C, Ford M, Shahrestani S, Sieracki JM (2015) A semi-automated image analysis procedure for in situ plankton imaging systems. PLOS One, 10(5):e0127121. DOI: 10.1371/journal.pone.0127121. [UMCES Cont. No. xxx]

Lei Y, Li T, **Bi H**, Cui W, Song W, Li J, Li C (2015) Responses of benthic foraminifera to the 2011 oil spill in the Bohai Sea, P.R. China, Marine Pollution Bulletin, 96, 245-260. [UMCES Cont. No. xxx]

Liu H, **Bi H**, Peterson WT (2015) Large-scale forcing of environmental conditions on the *Neocalanus plumchrus* and *cristatus* populations in the northern California Current system. Progress in Oceanography, 130, 404-412. [UMCES Cont. No. xxx]

Kim DW, Jo YH, Choi JK, Choi JG, **Bi H** (2016) Physical processes leading to the Development of an anomalously large *Cochlodinium polykrikoides* bloom in the East Sea/Japan Sea, Harmful Algae. 55: 250-258.

Wang L, Li Q, **Bi H***, Mao X* (2016) Human impacts and changes in the coastal waters of south China, Science of the Total Environment, 562: 108-114.

Simpson CA, Wilberg MJ, Bi H, Schueller AM, Nesslage GM, Walsh HJ (2016) Trends in Relative Abundance and Early Life Survival of Atlantic Menhaden during 1977–2013 from Long-Term Ichthyoplankton Programs, Transactions of the American Fisheries Society, 145: 1139-1151.

Shahrestani S, **Bi H***, Lyubchich V, Boswell KM (2017) Detecting a nearshore fish parade using the adaptive resolution imaging sonar (ARIS): an automated procedure for data analysis. Fisheries Research. 191:190-199.

Simpson CA, **Bi H***, Liang D, Wilberg MJ, Schueller AM, Nesslage GM, Walsh HJ (2017) Spawning Locations and Larval Dispersal of Atlantic Menhaden during 1977-2013, ICES Journal of Marine Sciences, https://doi.org/10.1093/icesjms/fsx030.

Jo Y, **Bi H**, Lee J (2017) Potential Applications of Low Altitude Remote Sensing for Monitoring Jellyfish, Korean Journal of Remote Sensing, 33: 15 – 24.

Liu Q, Sun B, Huo Y, Liu M, Shi J, Jiang T, Zhang Q, Tang C, **Bi H**, He P (2018) Nutrient bioextraction and microalgae growth inhibition using submerged macrophyte Myriophyllum spicatum in a low salinity area of East China Sea, Marine Pollution Bulletin, 127: 67 – 72.

Huo Y, Wei Z, Liu Q, Yang F, Long L, Zhang Q, **Bi H**, He Q, He P (2018) Distribution and controlling factors of phytoplankton assemblages associated with mariculture in a eutrophic enclosed bay in the East China Sea. Acta Oceanologica Sinica 37: 102-112.

Shahrestani S, **Bi H*** (2018) Settlement and Survival: a polyp's quest for sea-nettle blooms in Chesapeake Bay, Marine Ecology Progress Series, 601:139-151.

Wang L, Qiang L, Mao X, **Bi H**, Yin P (2018) Interannual Sea Level Variability in the Pearl River Estuary and Its Response to El Niño–Southern Oscillation, Global and Planetary Change, 162:163 – 174.

Cheng K, Cheng X*, Wang Y, **Bi H***, Benfield MC (2019) Enhanced convolutional neural network for plankton identification and enumeration, PloS one 14 (7), e0219570

Duan Y, Yang N, Hu M, Wei Z, **Bi H**, Huo Y, He P (2019) Growth and nutrient uptake of *Gracilaria lemaneiformis* under different nutrient conditions with implications for ecosystem services: A case study in the laboratory and in an enclosed mariculture area in the East China Sea. Aquatic Botany, 153: 73-80.

Huo Y, Shi H, Zhang J, Duan Y, He Q, Yu K, Bi H, Fan C, He P (2019) Spatio-temporal variability of phytoplankton assemblages and its controlling factors in spring and summer in the Subei Shoal of Yellow Sea, China. Acta Oceanologica Sinica 38 (10), 84-92

Huo Y, Fan C, Yang F, **Bi H**, Long L, He P, Liu Q, Wei Z (2019) A field scale evaluation of *Gracilaria lemaneiformis* co-cultured with *Crassostrea gigas* as a nutrient bioextraction strategy in Yantian Bay, China. Algal Research, 38:101407.

Cheng X, Cheng K, Bi H (2020) Dynamic downscaling segmentation for noisy low contrast grayscale image, IEEE Access, doi: 10.1109/ACCESS.2020.3001613

Huo Y, Liu Q, Zhang F, Li C, Tao Z, Bi H, Fan C, Sun S (2020) Biomass and estimated production, and feeding pressure on zooplankton of chaetognaths in the Yellow Sea, China. Terrestrial, Atmospheric & Oceanic Sciences, 31(2): 61-75.

Lankowicz K, **Bi H***, Liang D, Fan C, 2020. Use of sonar imaging surveys to fill data gaps in forage fish populations in the Chesapeake Bay, Fisheries Research, 10.1016/j.fishres.2020.105520.

Song J, **Bi H**, Cai Z, Cheng X, He Y, Benfield M, Fan C, 2020. Can we forecast *Noctiluca scintillans* blooms: an example from Dapeng Bay, P.R. China. Ecological Indicators, doi: 10.1016/j.ecolind.2020.106123.

Shahrestani S, **Bi H***, Liang D, Lankowicz K, Fan C, 2020. Multi-scale spatial dynamics of the Chesapeake Bay nettle, *Chrysaora chesapeakei*. Ecosphere, doi: 10.1002/ecs2.3128.

Wang L, Song J, **Bi H***, Gray M, Mao X*, Fan C, 2020. Adaptive feeding in the American oyster Crassostrea virginica: complex impacts of pulsatile flow during pseudofecal ejection events. Limnology and Oceanography, doi: 10.1002/lno.11433.

Wang L, Zhou Y, Lei X, Zhou Y, Bi H, Mao X* (2020), Predominant factors of disaster caused by tropical cyclone during landing. Science of the Total Environments, doi: 10.1016/j.scitotenv.2020.138556.

Shaw CT, Bi H, Feinberg, LR, Peterson WT (2021) Estimate *Euphausia pacifica* growth and survivorship off the coast of Newport, Oregon, USA, Progress in Oceanography,191: 102495

Huo Y, Decker MB, Wang L, Zhao J, Lemoine H, Lankowicz K, **Bi H*** (2021) The influence of a deep-water intrusion on the distribution of *Chrysaora melanaster* in the southeastern Bering Sea. Journal of Geophysical Research: Oceans, e2020JC016867.

Dong S, Lei Y, Bi H, Xu K, Li T, Jian Z (2022) Biological response of planktic foraminifera to decline in seawater pH, Biology, doi: 10.3390/biology11010098. https://www.mdpi.com/2079-7737/11/1/98/pdf. Contribution No. 6127 and Ref. No. [UMCES] CBL 2022-046

Zhao J, Wang Y, Liu W, Bi H, Cokelet ED, Mordy CW, Slavas NL, Meinig C. Sea Surface Salinity Variability in the Bering Sea in 2015-2020, Remote Sensing, https://doi.org/10.3390/rs14030758. Contribution No. 6153 and Ref. No. [UMCES] CBL 2022-051

Cheng X, Jiao W, Hu Y, Hao Q, Bi H, 2022. Image Recognition Based on Compressive Imaging and Optimal Feature Selection, IEEE Photonics Journal, DOI: 10.1109/JPHOT.2022.3155489. Contribution No. 6154 and Ref. No. [UMCES] CBL 2022-052

Song J, Jiao W, Cai Z, **Bi H***, 2022, A two-stage adaptive thresholding segmentation for noisy low-contrast plankton images, Ecological Informatics, 69: 101632. https://doi.org/10.1016/j.ecoinf.2022.101632. Contribution No. 6152 and Ref. No. [UMCES] CBL 2022-050

Bi H*, Song J, Zhao J, Liu H, Cheng X, Wang L, Cai Z, Benfield M, Otto S, Goberville E, Keister J, Yang Y, Yu X, Cai J, Ying K, Conversi A, 2022. Temporal characteristics of plankton indicators in coastal waters: High frequency data from PlanktonScope, Journal of Sea Research, 189:102283

Yue J, Chen Z, Long Y, Cheng K, **Bi H**, Cheng X, 2023. Towards efficient deep learning system for in-situ plankton image recognition. Frontiers in Marine Science. DOI:10.3389/fmars.2023.1186343.

Bi H*, Cheng Y, Cheng X, Benfield MC, Kimmel DG, Zheng HY, Groves S, Ying K, 2023, Taming the data deluge: designing a deep learning framework for classifying marine biological and environmental images. Limnology and Oceanography Methods, doi: 10.1002/LOM3.10591.

2. Datasets

Bi H*, Decker MB, Groves G, 2022. Optical Underwater Images, Sonar, and Hydrography Data in the Southeast Bering Sea along the Alaska Peninsula (2017-2018). Arctic Data Center. doi:10.18739/A2025R.

C. Contracts and Grants

1. Awarded

An Integrated Ecosystem Assessment of the Potomac Estuary, 2011-2012, Maryland Sea Grant, $83,000. (PI: Dave Secor, Co-PI: Lisa Wainger, Lora Harris, Bi H, [15% of time]).

Comparative Analysis of Marine Ecosystem Organization (CAMEO) – Building the foundation in Northern California Current shelf-Slope-Oceanic Ecosystems, 2009-2012, National Oceanic and Atmospheric Administration /National Science Foundation, $279,900. (PI: **Bi H**, Co-PI: W.T. Peterson. [17% of time]).

Use of satellite observations to improve ecological forecasts of salmon returns in the northern California Current off Washington and Oregon, 2008 - 2012, National

Aeronautics and Space Administration, $490,000. (PI: **Bi H**, Co-PI: W. T. Peterson, P. T. Strub. [25% of time]).

BEST Synthesis: Integration and modeling of spatial-temporal variation in vital rates for euphausiids in eastern Bering Sea: Implications for demographics, 2011-2015, National Science Foundation, $500,229, (PI: **Bi H**, Co-PI: Roger Harvey. [12.5% of time])

Estimating early mortality and implications for reference points for the Atlantic menhaden stock, 2013-2016, National Oceanic and Atmospheric Administration, $151,093, (PI: **Bi H**, Co-PI: Michael Wilberg, Amy Schueller (NOAA), Genevieve Nesslage (AMFSC), Harvey Walsh (NOAA)). [8% of time]

Framework for mobile deployment of the zooplankton visualization system and dual-frequency identification sonar system, 2014 – 2017, North Pacific Research Board, $146,950 (PI: **Bi H**, Co-PI: Boswell K, 8% of time)

Collaborative Research: Demographic structure and recruitment patterns of the scyphozoan, *Chrysaora melanaster*, in the Bering Sea: the influence of climate on ecosystem function, 2016-2019, National Science Foundation, $560,000 + 4 NSF funded research cruises (PI: **Bi H**, Co-PI: Decker MB, 12.5% time)

Understanding the distribution and ecology of the mysid *Neomysis americana*, a key forage species in Chesapeake Bay, 2018 – 2020, Maryland Sea Grant, $212,795 (PI: Woodland R, Co-PI: Bi H, North E, 12.5% time)

Design and testing of a combined aerial-hydroacoustic survey to estimate Atlantic menhaden biomass in Chesapeake Bay, 2019, Atlantic State Marine Fisheries Commission, $49,854 (PI: Wilberg M, Co-PI: Liang D, Bi H)

Spawning movement behaviors, habitat dependencies and run size of Nanticoke River Atlantic sturgeon, 2019 – 2022, National Oceanic and Atmospheric Administration through Maryland Department of Natural Resources, $515,421 (PI: Secor D, Co-PI: Bi H)

IIBR Bioinformatics: A graphical species distribution model of life history connectivity and multi-scale co-existence of marine species, 2022 – 2025, $542,081, National Science Foundation (PI: Liang D, Co-PI: Bi H)

Climate change and striped Bass recruitment in the Choptank and Patuxent Rivers, 2024 – 2026, $249,293, NOAA (PI: Bi H, Co-PI: Woodland R, Zhao J)

A whole system restoration of seagrass, bay scallops and associated ecosystem functions in the coastal lagoons of Virginia's northern Eastern Shore, 2023-2027, $16,213, NOAA Subaward through VIMS (UMCES PI: Bi H)

D. Invited Seminar and Presentations

Abbreviations: North Pacific Marine Science Organization (PICES)
International Council for the Exploration of the Sea (ICES)
American Geophysical Union (AGU)
Association for the Sciences of Limnology and Oceanography (ASLO)
The Oceanography Society (TOS)
American Fisheries Society (AFS)

Invited seminar and presentations are indicated by *.

Peterson WT, Casillas E, Bi H, Morgan C (2009) Forecasting returns of coho and Chinook salmon: presentation of a mechanism that links the PDO with ocean circulation, ecosystem structure and salmon returns in the coastal northern California Current. PICES annual meeting, Korea.

Feinberg L, Bi H, Peterson WT (2009) Stage specific mortality rates for *Euphausia pacifica* larvae from the Oregon coast. 3rd Global Ocean Ecosystem Dynamics Open Science Meeting, Victoria, BC, Canada.

* **Bi H**, Peterson WT, Morgan C, Casillas E (2010) Ocean conditions and forecasting salmon survival off Washington and Oregon. Chesapeake Modeling Symposium, Linthicum, Maryland

Bi H, Peterson WT, Lamb J, Morgan C, Strub PT (2010) Interannual variation in food web structure in the northern California current. AGU/ASLO/TOS Ocean Sciences meeting, Portland, Oregon.

Peterson WT, Morgan C, Menkel J, Shaw CT, Peterson JO, Bi H (2010) Zonal gradients in zooplankton species abundance, community structure and population connectivity in shelf, slope and oceanic waters off Newport Oregon. AGU/ASLO/TOS Ocean Sciences meeting, Portland Oregon.

Peterson WT, Bi H, Morgan C, Casillas E (2010) The Pacific Decadal Oscillation and marine food webs in the northern California Current: variations in source waters which feed the California Current may be the mechanism which links climate change with ecosystem response. PICES International Symposium on "Climate Change effects on fish and fisheries", Sendai Japan.

Burke BJ, Peterson WT, Bi H, Casillas E (2010) Quantifying habitat correlates for salmon in coastal waters, AFS Annual meeting, Petersburg, Pennsylvania.

Bi H, Peterson WT, Morgan C, Strub PT, Hare J (2010) Comparative analysis of zooplankton communities in the east coast and west coast of the U.S.A – Response to transport? ICES annual meeting. Nantes, France.

Bi H, Peterson WT, Strub PT (2011) Alongshore transport and coastal zooplankton communities in the northern California Current system. ICES/PICES 5th Zooplankton Production Symposium, Chile.

Peterson WT, Morgan CA, Bi H, Fisher J, Peterson JO (2011) Climate change in the northern California Current ecosystem: impacts on the community composition and production of zooplankton. ICES/PICES 5th Zooplankton Production Symposium in Chile.

Feinberg LR, Shaw CT, Peterson WT, Bi H (2011) Life history of *Euphausia pacifica* in the northern California current: what can be learned by contrasting field and laboratory studies. ICES/PICES 5th Zooplankton Production Symposium, Chile.

Yu H, Bi H, Peterson WT (2011) Environmental factors affecting spatial distribution of juvenile Chinook salmon off Washington and Oregon, U.S.A, AGU/ASLO/TOS Ocean Sciences meeting, San Juan, Puerto Rico.

***Bi H**, Yu H, Peterson WT (2011) Comparative analysis of coastal-shelf-oceanic ecosystem in Oregon coast: Implications for salmon. AFS Annual meeting. Seattle, Washington.

Peterson WT, Bi H, Morgan CA, Fisher J, Peterson JO, Rykaczewski RR (2011) The Pacific Decadal Oscillation and gyre-ecosystem linkages in the northern California Current (NCC): source waters which feed the NCC determine food web structure, ICES annual meeting, Gdansk, Poland.

Bi H, Cook S, Yu H, Benfield MC, Houde ED (2012) Fine-scale spatial distribution of early-life stages of the ctenophore, *Mnemiopsis leidyi*, in Chesapeake Bay, AGU/ASLO/TOS Ocean science meeting, Orlando, Miami.

Yu H, Bi H, Houde ED, Hare J (2012) Spatial and temporal distribution of Atlantic menhaden larvae along the Atlantic Coast, AFS Annual meeting, St. Paul, Minnesota.

Yu H, Bi H, Burke B, Peterson WT (2012) Interannual spatial distribution of yearling spring Chinook salmon off Washington and Oregon, ICES/PICES early career scientist meeting, Spain.

***H Bi**, (2012) Large scale ocean variability and ecosystem response in the northern California Current system, Old Dominion University.

Bi H, Cook S, Benfield MC (2013) Deployment of an imaging system to investigate zooplankton fine-scale spatial distribution for estuarine ecosystems, 53th Estuarine Coastal Sciences Association annual meeting, Shanghai, P.R. China.

Bi H, Jo Y, Hare J (2013) Decadal zooplankton changes in the middle Atlantic Bight, ASLO Aquatic Science meeting, New Orleans, U.S.A.

Benfield MC, Cook S, Strickler JR, DiMauro R, Bi H, Sutor MM (2013) ZOOIVS-Deep: A self-contained, high resolution zooplankton imaging system with applications from estuaries to the deep Sea, ASLO Aquatic Science meeting, New Orleans.

***Bi H**, Yu H, Pinchuk A, Harvey R (2013) Demography structure and population dynamics of euphausiids in the Bering Sea. Bering Sea workshop, Friday Harbor, Washington

Yu H, Bi H, Pinchuk A, Harvey R (2013) Spatial distribution and controlling factors for euaphausiids in the Bering Sea. Alaska Marine Science Symposium, Anchorage

***Bi H**, Yu H, Wilberg M, Schueller A, Nesslage G, Walsh H (2013) Estimating early mortality for reference points for the Atlantic menhaden stock. Atlantic States Marine Fisheries Commission meeting, Baltimore.

***Bi H** (2013) Process-based ecological forecasting, Shenzhen open science meeting

***Bi H**, Jo Y, Benfield MC (2014) Deployment of imaging technologies for marine ecosystem studies, 1st Xiamen Marine Environment Symposium, Xiamen

Bi H, Yu H, Pinchuk A, Harvey R (2014) Estimating growth rate of euphausiids in the eastern Bering Sea using individual-based models. AGU/ASLO/TOS Ocean Sciences meeting, Hawaii.

Fisher J, Peterson WT, Peterson JO, Bi H (2014) Differential changes in pteropod abundance across the Oregon Shelf and slope. Eastern Pacific Ocean Conference, Oregon.

***Bi H**, Guo Z, Benfield MC (2014) A computer based image analysis procedure for in situ imaging systems with case studies for zooplankton and macrobenthos, City University of Hongkong.

Simpson CA, Wilberg MJ, Schueller AM, Nesslage GM, Walsh HJ, Bi H (2014) Ichthyoplankton-based index of abundance for Atlantic menhaden. AFS Tidewater Chapter. 28th Annual Meeting. Newport News, VA.

Simpson CA, Wilberg MJ, Schueller AM, Nesslage GM, Walsh HJ, Bi H (2014) Estimating Atlantic menhaden larval abundance along the Atlantic Coast of the United States. AFS Annual Meeting. August 17-21. Quebec City, Quebec.

Simpson CA, Wilberg MJ, Nesslage GM, Bi H, Schueller AM, Walsh H (2015) Atlantic Menhaden Spawning Locations Inferred from Long-Term Ichthyoplankton Data, AFS Annual Meeting. August 16-20. Portland, Oregon.

Shahrestani S, Bi H (2015) Understanding Jellyfish Population Dynamics in Chesapeake Bay, AFS Annual Meeting. August 16-20. Portland, Oregon.

*Bi H (2015) On the design of classification models for plankton recognition: recent developments of ZOOVIS, International Conference on Underwater Sciences, Hong Kong.

*Bi H (2015) Zooplankton and pelagic fish: match and mismatch in space and time. University of Delaware.

Bi H, Shahrestani S, He Y (2016) Integrated observatory framework for sea nettle dynamics in Chesapeake Bay, AGU/ASLO/TOS Ocean Sciences meeting, New Orleans.

*Bi H (2016) Application of imaging systems in marine ecology, St Mary's College.

Bi H, Shahrestani S, He Y (2016) Integrated observatory framework for sea nettle dynamics in Chesapeake Bay, AGU/ASLO/TOS Ocean Sciences meeting, New Orleans.

*Bi H (2016) Application of imaging systems in marine ecology, St Mary's College.

Bi H, Liu H, Pinchuk A, Harvey R (2016) Euphausiid size-specific distribution and mortality in the southeast Bering Sea. PICES/ICES Zooplankton Production Symposium. Bergen, Norway.

Shahrestani S, Bi H (2016) Spatial and temporal dynamics of *Chrysaora quinquecirrha* polyps: an *in-situ* experiment in Chesapeake Bay. The 5th international jellyfish bloom symposium. Barcelona, Spain.

Lankowicz K, Bi H, Shahrestani S, Fan C, Liang D (2017) Use of SONAR imaging to observe forage distribution in the Patuxent River waterscape. AFS Annual Meeting. Tampa, Florida.

Bi H, Cai Z, Cheng X, He Y, Benfield M, Fan C (2017) Transitioning from monitoring to forecasting potential harmful algae bloom: an example from Shenzhen Bay, P.R. China, AGU/ASLO/TOS Ocean Sciences meeting, Hawaii.

Lankowicz K, **Bi H**, Shahrestani S, Zhang L, Fan C (2017) A novel approach to observing Mysidae distribution in the Chesapeake Bay, AGU/ASLO/TOS Ocean Sciences meeting, Hawaii.

Shahrestani S, **Bi H**, Fan C, Dong L, Zhang L (2017) Spatial and temporal distribution of Atlantic sea nettles in the Patuxent, AGU/ASLO/TOS Ocean Sciences meeting. Hawaii.

Zhang L, **Bi H**, Fan C, Shahrestani S (2017) Self-organized fish schooling: from individual variability to synchrony, AGU/ASLO/TOS Ocean Sciences meeting, Hawaii.

***Bi** H, (2017) Seeing the invisible in coastal waters: Technology solution for monitor and data gaps. NOAA Great Lakes Environmental Research Laboratory, Ann Arbor, Michigan.

***Bi** H (2017) A underwater microscope for coastal plankton ecology, National Sun Yat Sen University, Taiwan.

***Bi** H (2017) Imaging technologies for monitoring marine aquaculture environments, Institute of Oceanology Chinese Academy of Science, Qingdao.

Bi H, Binder B, Boswell K (2018) Estimating krill abundance and spatial distribution using an optical plankton imaging system and multifrequency echo sounder. Alaska Marine Science Symposium, Anchorage.

Lankowicz K, **Bi H**, Shahrestani S, Liang D, Fan C (2018) Use of Sonar Imaging to Quantify Juvenile Forage Fish Abundance in the Patuxent River. 148th Annual Meeting of American Fisheries Society, New Jersey.

Decker MB, Huo Y, Wang L, Lankowicz K, Lemoine H, **Bi H*** (2019) *Chrysaora melanaster* spatial and seasonal dynamics detected by Adaptive Resolution Imaging Sonar (ARIS) in the eastern Bering Sea, 6th International Jellyfish Bloom Symposium, Cape Town, South African.

*Bi H, Decker MB, Lankowicz (2019) See the high sea: Imaging technology for the Bering Sea food web. Japan Agency for Marine-Earth Science and Technology, Yokohama, Japan.

*Bi H, Decker MB, Zhao J, Lankowicz K (2020) The influence of a deep-water intrusion on the distribution of *Chrysaora melanaster* in the southeastern Bering Sea, School of Marine and Atmospheric Sciences, Stony Brook University.

*Lankowicz K, Bi H, Liang D, Fan C (2020) Characterizing forage fish distribution and schooling in Maryland tributaries. Forage Action Team, NOAA Chesapeake Bay Office.

Lankowicz K, Bi H,

E. Editorial membership

Managing guest editor, Journal of Sea Research, special issue "Ecosystem indicators and Climate" 2022 – 2023

Guest editor, Frontiers in Marine Science, special issue "Applications of deep learning systems in marine science" 2023 – 2024

F. Active Memberships in Professional Societies

American Geophysical Union

American Society of Limnology and Oceanography

Sigma Xi

IV. Teaching and Training

A. Postdoctoral fellow supervised

Hao Yu (2010 – 2013)

B. Graduate student supervised

Bro Groves	Ph.D	MEES	2021-present
Katie Lankowicz	Ph.D	MEES	2015-2022
Suzan Shahrestani,	Ph.D	MEES	2013-2018
Cara Simpson (co-Chair)	MSc	MEES	2013-2015

C. Graduate student thesis committees

Jesse Lamb	MS	Oregon State University	2009 – 2011
Daniel Cullen	Ph.D	UMES	2010 – 2015
Anthony G. Kaufman	MS	MEES-SERC	2010 – 2014
Jacqueline Tay	Ph.D	MEES	2012 – 2020
Dani Quill	MS	MEES	2018 – Present
Nikelene Mclean	Ph.D	Morgan State University	2019 – Present
Nick Coleman	MS	MEES	2020 – Present
Wenjing Liu	Ph.D	MEES	2022 – Present

D. Visiting Students and Scholar

Dr. Libin Zhang	visiting scholar	Institute of Oceanology CAS	2016
Gang Lin	visiting scholar	Fujian Normal University	2017
Junting Song	visiting student	Tsinghua University	2018
Yuqi Wang	visiting student	Tsinghua University	2018
Dr. Linlin Wang	visiting scholar	Tsinghua University	2018 – 2020
Dr. Yuanzi Huo	visiting scholar	Shanghai Ocean University	2019 - 2020.

E. Teaching

Environmental statistics	MEES 698T	spring 2011	10 students
Environmental statistics	MEES 698T	spring 2013	6 students
Spatial Ecology	MEES 608E	Fall 2012	13 students
Quantitative methods	MEES	Fall 2015, 2016, 2017, 2018	

F. Undergraduate

REU:	Ashton Imlay	Tuft University	2011
	Nathan Hirtle	Salisbury University	2016

V. Services

A. Public services

1. Reviewer for:

Aquatic Living Resource	Canadian J. Fisheries and Aquatic Sciences
Computational Geosciences	Deep Sea Research, Pt I & II Estuarine,
Coastal and Shelf Science	Estuaries and Coasts
Ecology	Environmental Science: Processes Impacts
Fisheries Oceanography	Global Change Biology
ICES J. Marine Science	IEEE Access
IEEE J. Oceanic Engineering	J. Experimental Marine Biology & Ecology
J. Marine Systems	J. Phycology
J. Plankton Research	J. Oceanography
Limnology and Oceanography: Methods	Limnology and Oceanography
Marine Ecology Progress Series	J. Sea Research
Restoration Ecology	Science of the Total Environment
PLOS one	Progress in Oceanography

B. Federal/State/Local Government

1. Panelists:

        a. NSF Convergence program 2021

        b. NSF Biological Oceanography program 2021

        c: NOAA ocean exploration program 2019

2. NSF ARC, Biological Oceanography, Polar program, Bigdata proposal reviewer

3. MIT Sea Grant Reviewer, Delaware Sea Grant Reviewer

4. Italy Science and Technology

C. UMCES, MEES, CBL

1. Fisheries AOS review

2. Co-organized CBL Spring seminar spring 2011

3. Computer Committee Chair

D. Workshops

Science steering committee member for 2024 International Zooplankton Symposium by PICES and ICES.

Convener, PICES Working Group on "Best practices on using plankton imaging systems for monitoring", 2021-2024.

Session Chair, OT03 "Towards best practices for using imaging systems for plankton monitoring", Ocean Science, 2022

Session Chair, 2022 PICES annual meeting

E. Editor

Managing guest editor for the special issue on "Ecosystem indicators and climate" with Journal of Sea Research

Guest editor for the special issue on "Deep learning in marine science" with Frontiers in Marine Science