NSF BIOGRAPHICAL SKETCH

NAME: Bi, Hongsheng

POSITION TITLE & INSTITUTION: Associate Professor, University of Maryland Center for Environmental Science

(a) PROFESSIONAL PREPARATION -(see PAPPG Chapter II.C.2.f.(a))

INSTITUTION	LOCATION	MAJOR/AREA OF STUDY	DEGREE (if applicable)	YEAR YYYY
Ocean University of China	Qingdao, Shandong	Marine Aquaculture	B.S.	1994
Institute of Oceanology, Chinese Academy of Sciences	Qingdao, Shandong	Marine Ecology	M.Sc.	1996
Louisiana State University	Baton Rouge, Louisiana	Oceanography	Ph.D.	2005
Oregon State University	Corvallis, Oregon	Biological Oceanography	Postdoctoral Fellow	2005-2009

(b) APPOINTMENTS -(see PAPPG Chapter II.C.2.f.(b))

2015 - present Associate Professor, University of Maryland Center for Environmental Science, Solomons, MD

2009 - 2015 Assistant Professor, University of Maryland Center for Environmental Scienc, Solomons, MD

(c) PRODUCTS -(see PAPPG Chapter II.C.2.f.(c))

Products Most Closely Related to the Proposed Project

1. Patents: Cheng X, Bi H, He Y, Cai Z, Lin J, A telecentric illumination and imaging system for marine microorganisms. WO2017147957A1, WIPO (PCT); CN105744129B (2017-12-12), US10397458B2 (2019-8-27), EP3426003B1 (2020-7-29). 2017.

2. Song J, Jiao W, Lankowicz K, Cai Z, Bi H. A two-stage adaptive thresholding segmentation for noisy low-contrast images. Ecological Informatics. 2022 July; 69:101632-. Available from: https://linkinghub.elsevier.com/retrieve/pii/S1574954122000814 DOI: 10.1016/j.ecoinf.2022.101632

3. Song J, Bi H, Cai Z, Cheng X, He Y, Benfield M, Fan C. Early warning of *Noctiluca scintillans* blooms using in-situ plankton imaging system: An example from Dapeng Bay, P.R. China. Ecological Indicators. 2020 May; 112:106123-. Available from: https://linkinghub.elsevier.com/retrieve/pii/S1470160X20300601 DOI: 10.1016/j.ecolind.2020.106123

4. Bi H, Cook S, Yu H, Benfield M, Houde E. Deployment of an imaging system to investigate fine-scale spatial distribution of early life stages of the ctenophore *Mnemiopsis leidyi* in Chesapeake Bay. Journal of Plankton Research. 2013 March; 35(2):270-280. Available from: http://academic.oup.com/plankt/article/35/2/270/1438714/Deployment-of-an-imaging-system-to-investigate DOI: 10.1093/plankt/fbs094

5. Cheng K, Cheng X, Wang Y, Bi H, Benfield M. Enhanced convolutional neural network for plankton identification and enumeration. PLOS ONE. 2019; 14(7):e0219570-. Available from: https://dx.plos.org/10.1371/journal.pone.0219570 DOI: 10.1371/journal.pone.0219570

Other Significant Products, Whether or Not Related to the Proposed Project

1. Lankowicz K, Bi H, Liang D, Fan C. Sonar imaging surveys fill data gaps in forage fish populations in shallow estuarine tributaries. Fisheries Research. 2020 June; 226:105520-. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0165783620300370 DOI: 10.1016/j.fishres.2020.105520

2. Huo Y, Decker M, Wang L, Zhao J, Lemoine H, Lankowicz K, Bi H. The Influence of a Deep Water Intrusion on the Distribution of *Chrysaora melanaster* in the Southeastern Bering Sea. Journal of Geophysical Research: Oceans. 2021 June 09; 126(6):-. Available from: https://onlinelibrary.wiley.com/doi/10.1029/2020JC016867 DOI: 10.1029/2020JC016867

3. Shahrestani S, Bi H, Liang D, Lankowicz K, Fan C. Multi-scale spatial dynamics of the Chesapeake Bay nettle, *Chrysaora chesapeakei*. Ecosphere. 2020 May; 11(5):-. Available from: https://onlinelibrary.wiley.com/doi/10.1002/ecs2.3128 DOI: 10.1002/ecs2.3128

4. Shahrestani S, Bi H, Lyubchich V, Boswell K. Detecting a nearshore fish parade using the adaptive resolution imaging sonar (ARIS): An automated procedure for data analysis. Fisheries Research. 2017 July; 191:190-199. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0165783617300802 DOI: 10.1016/j.fishres.2017.03.013

5. Jiao W, Cheng X, Hu Y, Hao Q, Bi H. Image Recognition Based on Compressive Imaging and Optimal Feature Selection. IEEE Photonics Journal. 2022; 14(2):1-12. Available from: https://ieeexplore.ieee.org/document/9723631/ DOI: 10.1109/JPHOT.2022.3155489

(d) SYNERGISTIC ACTIVITIES -(see PAPPG Chapter II.C.2.f.(d))

1. Member of Science Steering Committee for the 7th International Zooplankton Production Symposium, 2024, Hobart, Australia; Session Chair, "Application and best practice of imaging technologies for plankton and ecosystem monitoring", PICES Annual meeting 2022; Session Chair, "Best practices of using imaging systems for plankton monitor", Ocean Science Conference 2022.

2. Convener, PICES working group "Best practices of using imaging systems for plankton monitor"2021-2024.

3. Managing guest editor: Journal of Sea Research, special issue on Climate Change and Ecosystem Indicators, In progress; Guest editor: Frontiers in Marine Science, special topic on "Applications of deep learning in marine science"

4. Manuscript reviewer for Aquat Living Resour, Can J Fish Aquat Sci, Deep Sea Res, Ecology, Estuar Coast Shelf Sci, Fish Oceanogr, ICES J. Mar Sci, IEEE Access, IEEE J OCEANIC ENG, J. Expl Mar Biol Ecol, J. Marine Systems, J. Phycol., J. Plankton Res., J Oceanogr, Limnol Oceanogr: Methods, Computat Geosci, Mar Ecol Prog Ser, Restoration Ecol, Global Change Biol, PLOS one, Prog Oceanogr.

5. Proposal reviewer for NSF Biological Oceanographer, NSF Arctic Natural Research, NSF Arctic Observation Network, NSF Biological Oceanography, NSF Bigdata and Delaware Sea Grant. Panelists for NOAA climate program 2017, NOAA Ocean Exploration Program 2019, NSF Convergence Program 2021, and NSF Biological Oceanography 2022