
Introduction to the Institute of Oceanic and Atmospheric Sciences

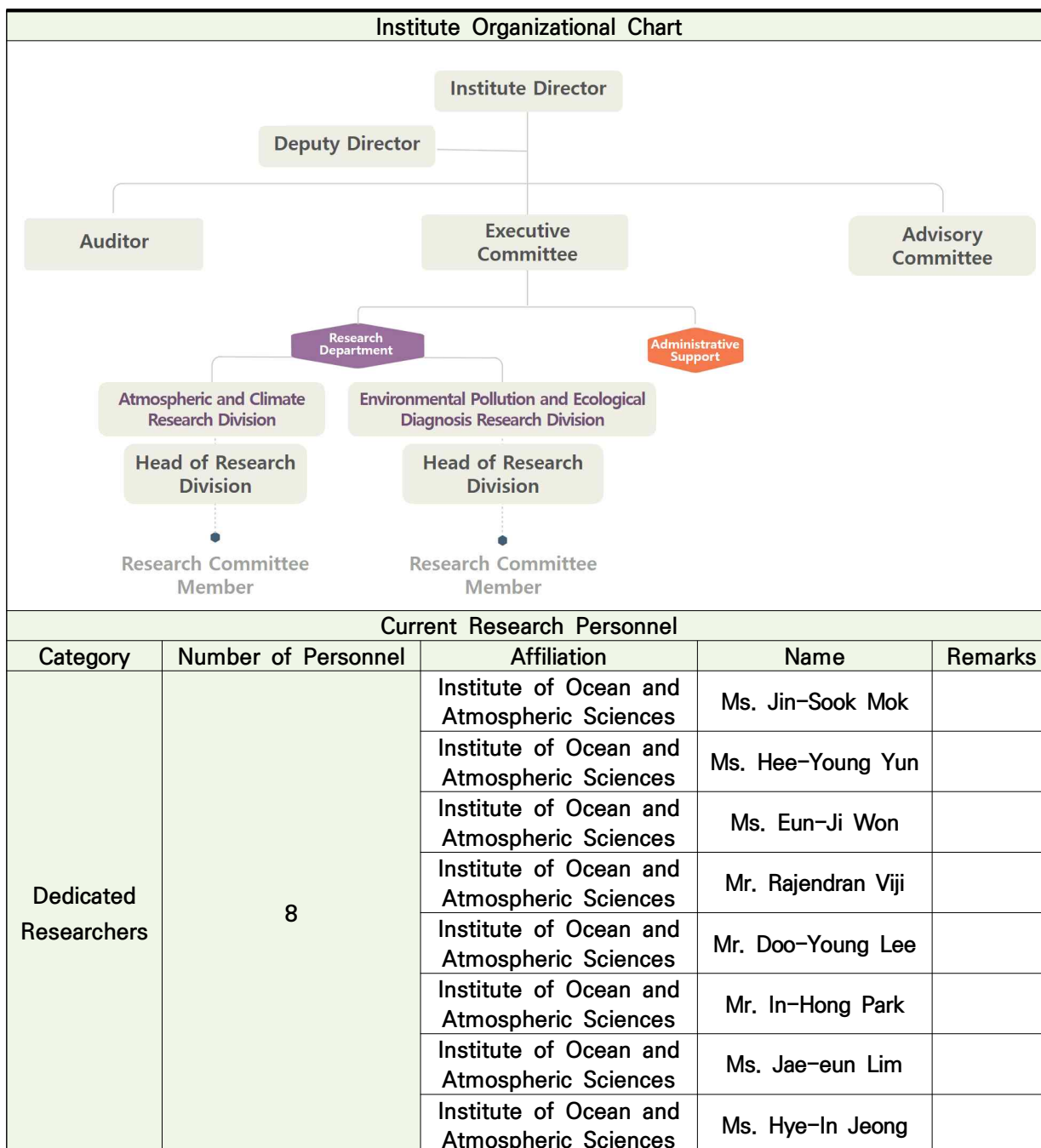


I Institute of Oceanic and Atmospheric Sciences Overview

1. General Information about the Institute

Institute Name	Institute of Ocean and Atmospheric Sciences
Director	Professor. Kyung-Hoon Shin Department of Oceanic Convergence Engineering, College of Science and Technology
Location (Main Office)	Hanyang University ERICA, 1st Science and Technology Building, Room 328 (55 Hanyangdaehak-ro, Sangnok-gu, Ansan-si, Gyeonggi-do, South Korea)

2. Research Team Composition (Organizational Structure)



3. Role and Objectives of the Institute of Ocean and Atmospheric Sciences

a. Role

This research institute is established to monitor and predict the rapid changes in marine environments caused by climate change and environmental pollution, which are the greatest challenges to sustainable progress and prosperity of mankind in the 21st century.

b. Objectives

The main goal is to proactively respond to climate change and environmental pollution through the development of advanced marine science and technologies, and to promote international and domestic research collaboration. In addition, the institute aims to support collaborative research by enhancing interactions among marine-related researchers and institutions. These objectives will contribute to sustainable development of marine resources and environments, and the protection of marine ecosystems.

4. Core Research Areas

- Climate Change Diagnosis, Climate Model Development
- Environmental Pollution Diagnosis, Ecological Toxicity Assessment
- Marine Ecosystem Change Diagnosis, Marine Biological Community Structure and Function Research

II Researcher Profiles

1. Professor. Kyung-Hoon Shin

Email : shinkh@hanyang.ac.kr / Website : <http://isoe2.hanyang.ac.kr/>

<p>Education and Experience</p>	<p>February 1988: Bachelor's Degree in Earth and Marine Sciences, Hanyang University February 1990: Master's Degree in Earth and Marine Sciences, Hanyang University March 1996: Master of Science in Natural Sciences, Nagoya University, Japan March 1999: Ph.D. in Earth Environmental Sciences, Hokkaido University, Japan March 2003 – Present: Assistant Professor / Associate Professor / Professor, Department of Oceanic Convergence Engineering, Hanyang University September 2015 – Present: Director, Institute of Ocean and Atmospheric Sciences, Hanyang University January 2019 – December 2020: President, Korean Society of Hydrology and Limnology September 2021 – Present: Vice President, Korean Academy of Marine Science and Technology</p>
<p>Research Objectives</p>	<p>Professor Shin focuses on the development and application of advanced techniques for stable isotope and biomarker analysis for marine ecological and environmental diagnostics. His research aims to</p>
<p>Desired Research Areas</p>	<p>In order to precisely diagnose changes in the function and structure of the marine ecosystem due to climate change, environmental pollution, etc., we are developing research techniques using isotopes and biomarkers. In particular, we are working to develop and standardize techniques for analyzing the isotope ratios of organic compounds at the molecular level and apply them in the field.</p>
<p>Recent Research Achievements (Publications)</p>	<p><Only papers published in 2024, 106 SCIE papers in the last 5 years, 22 papers in top 10% journals> Contribution of carbonate-derived dissolved inorganic carbon into autochthonous particulate organic carbon in two small temperate Korean rivers (Geum and Seomjin) S Kang, JH Kim, JS Ryu, YS Bong, KH Shin Heliyon 10 (10) (2024) Compound-Specific Isotope Analysis Provides Direct Evidence for Identifying the Source of Residual Pesticides Diazinon and Procymidone in the Soil-Plant System HY Yun, IS Kim, KH Shin Journal of Agricultural and Food Chemistry (2024) Impact of typhoons on anthropogenic nitrogen sources in Lake Sihwa, South Korea SH Kim, MS Kim, DH Lee, KH Shin Marine Pollution Bulletin 202, 116324 (2024) Inhibitory regulation of FoxO1 in PPARδ expression drives mitochondria dysfunction and insulin resistance S Park, HN Cha, MG Shin, S Park, Y Kim, MS Kim, KH Shin, T Thoudam, ... Diabetes, db230432 (2024) Export of aged dissolved organic carbon to the Geum and Seomjin estuaries in South Korea S Kang, JH Kim, JS Ryu, KH Shin Journal of Hydrology 632, 130659 (2024) Integrated approach for the isotope trophic position of black-tailed gull (<i>Larus crassirostris</i>) eggs over a decade: Combining stable isotopes of amino acids and fatty acids composition D Kim, J Lee, EJ Won, SY Lee, HE Cho, H Choi, KH Shin Science of the Total Environment 913, 169732 (2024) Trophic variability of inter- and intra-copepod species in the South Sea of Korea during summer H Choi, S Seong, N Park, S Lee, D Kim, W Lee, KH Shin Continental Shelf Research 273, 105175 (2024) Quantitative source tracking for organic foulants in ultrafiltration membrane using stable isotope probing approach Z Arshad, TH Bang, MS Kim, KH Shin, HY Park, J Hur Water Research 249, 120989 (2024)</p>
<p>Recent Research Projects</p>	<ul style="list-style-type: none"> - (Korean Research Foundation) July 26, 2021 – December 31, 2023 (Phase 1): January 1, 2024 – December 31, 2025 (Phase 2): Study on Land-Ocean Carbon Transfer and Seafloor Carbon Storage - (Korea Institute of Ocean Science and Technology) April 1, 2022 – December 31, 2024 (Phase 1) / January 1, 2025 – December 31, 2026 (Phase 2): Development of Tracking Techniques for Marine Pollutants - (Korean Research Foundation) March 1, 2023 – February 28, 2027 (Phase 1): Impact of Terrestrial-Origin Organic Matter on Coastal Estuarine Ecosystems: Utilizing Carbon and Nitrogen Stable Isotope Ratios

2. Professor. Eun-Ji Won

Email : ejwon@hanyang.ac.kr

<p>Education and Experience</p>	<p>February 2012: Master's and Doctoral Degrees in Marine Environmental Science, Hanyang University August 2004: Bachelor's Degree in Earth and Marine Sciences, Hanyang University</p> <p>Professional Experience April 2022 – Present: Professor, Creative Convergence Education Institute / Institute of Ocean and Atmospheric Sciences, Hanyang University January 2018 – March 2022: Research Professor, Institute of Ocean and Atmospheric Sciences, Hanyang University November 2015 – December 2017: Research Fellow, Korea Institute of Ocean Science and Technology March 2014 – November 2015: Postdoctoral Researcher, Basic Science Research Institute, Sungkyunkwan University March 2012 – February 2014: Postdoctoral Researcher, Natural Science Research Institute, Hanyang University</p>
<p>Research Objectives</p>	<p>Discovery of biological indicators for precise diagnostics of marine ecosystems</p>
<p>Desired Research Areas</p>	<p>Stable isotope ecophysiology</p>
<p>Recent Research Achievements (Publications)</p>	<p>〈Last 3 years〉 Integrated approach for the isotope trophic position of black-tailed gull (<i>Larus crassirostris</i>) eggs over a decade: Combining stable isotopes of amino acids and fatty acids composition D Kim, J Lee, EJ Won, SY Lee, HE Cho, H Choi, KH Shin Science of the Total Environment 913, 169732 (2024)</p> <p>New insight into biomagnification factor of mercury based on food web structure using stable isotopes of amino acids D Kim, EJ Won, HE Cho, J Lee, KH Shin Water Research 245, 120591 (2023)</p> <p>Effect of heavy metals on the energy metabolism in the brackish water flea <i>Diaphanosoma celebensis</i> J Lee, MJ Jeon, EJ Won, J Yoo, YM Lee Ecotoxicology and Environmental Safety 262, 115189 (2023)</p> <p>Microplastics disrupt energy metabolism in the brackish water flea <i>Diaphanosoma celebensis</i> MJ Jeon, JW Yoo, KW Lee, EJ Won, YM Lee Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology (2023)</p> <p>Interpretation of Trophic Positions Using the CSIA Approach: Focusing on the Invasive Fish Lake Skygazer <i>Chanodichthys erythropterus</i> EJ Won, HE Cho, D Kim, JW Choi, KG An, KH Shin Korean Journal of Ecology and Environment 56 (3), 218–228 (2023)</p> <p>Stable isotope analysis of residual pesticides via high performance liquid chromatography and elemental analyzer–isotope ratio mass spectrometry HY Yun, EJ Won, J Choi, Y Cho, DJ Lim, IS Kim, KH Shin Molecules 27 (23), 8587 (2022)</p> <p>Influences of Seasonal Variability and Potential Diets on Stable Isotopes and Fatty Acid Compositions in Dominant Zooplankton in the East Sea, Korea J Kim, HY Yun, EJ Won, H Choi, SH Youn, KH Shin Journal of Marine Science and Engineering 10 (11), 1768 (2022)</p> <p>Stepwise Approach for Tracing the Geographical Origins of the Manila Clam <i>Ruditapes philippinarum</i> Using Dual-Element Isotopes and Carbon Isotopes of Fatty ... YS Go, EJ Won, SH Kim, DH Lee, JH Kang, KH Shin Foods 11 (13), 1965 (2022)</p> <p>Amino acid nitrogen and carbon isotope data: Potential and implications for ecological studies HY Yun, T Larsen, B Choi, EJ Won, KH Shin Ecology and Evolution 12 (6), e8929 (2022)</p> <p>Environmental fate and trophic transfer of synthetic musk compounds and siloxanes in Geum River, Korea: Compound-specific nitrogen isotope analysis of amino acids for accurate ... D Kim, HE Cho, EJ Won, HJ Kim, S Lee, KG An, HB Moon, KH Shin Environment International 161, 107123 (2022)</p> <p>Molecular evidence for suppression of swimming behavior and reproduction in the estuarine rotifer <i>Brachionus koreanus</i> in response to COVID-19 disinfectants EJ Won, E Byeon, YH Lee, H Jeong, Y Lee, MS Kim, HW Jo, JK Moon, ... Marine Pollution Bulletin 175, 113396 (2022)</p>
<p>Recent Research Projects</p>	<ul style="list-style-type: none"> - (Korean Research Foundation) March 2022 – February 2026: Study on Biological Responses in Coastal and Estuarine Environments to Contaminant Influx: Discovery of Isotopic and Molecular Indicators Applicable to Coastal Environments - (Ansan Green Environment Support Center) March 2023 – December 2023: Tracing and Evaluating the Contribution of Nitrogen Sources in the Shihwa Lake Water System

3. Professor. Hee-Young Yun

Email : eyun2@hanyang.ac.kr

<p>Education and Experience</p>	<p>January 2011: Ph.D. in Chemical Biology, Bremen University</p> <p>Professional Experience March 2023 – Present: Assistant Professor, Creative Convergence Education Institute / Institute of Ocean and Atmospheric Sciences, Hanyang University August 2020 – February 2023: Research Assistant Professor, Institute of Ocean and Atmospheric Sciences, Hanyang University May 2018 – July 2020: Postdoctoral Researcher, Institute of Ocean and Atmospheric Sciences, Hanyang University April 2015 – February 2018: Postdoctoral Researcher, Polar Biology Institute, University of Alaska</p>
<p>Research Objectives</p>	<p>Understanding the complexity and sustainability of marine ecosystems and developing effective conservation strategies</p>
<p>Desired Research Areas</p>	<p>Marine Conservation Ecology</p>
<p>Recent Research Achievements (Publications)</p>	<p>Compound-Specific Isotope Analysis Provides Direct Evidence for Identifying the Source of Residual Pesticides Diazinon and Procymidone in the Soil-Plant System HY Yun, I-Kim, KH Shin Journal of Agricultural and food chemistry (2024) 72: DOI:10.1021/acs.jafc.4c00640</p> <p>Stable isotope analysis of residual pesticides via high performance liquid chromatography and elemental analyzer-isotope ratio mass spectrometry HY Yun, EJ Won, J Choi, Y Cho, DJ Lim, IS Kim, KH Shin Molecules 27 (23), 8587 (2022)</p> <p>Influences of Seasonal Variability and Potential Diets on Stable Isotopes and Fatty Acid Compositions in Dominant Zooplankton in the East Sea, Korea J Kim, HY Yun, EJ Won, H Choi, SH Youn, KH Shin Journal of Marine Science and Engineering 10 (11), 1768 (2022)</p> <p>Amino acid nitrogen and carbon isotope data: Potential and implications for ecological studies HY Yun, T Larsen, B Choi, EJ Won, KH Shin Ecology and Evolution 12 (6), e8929 (2022)</p>
<p>Recent Research Projects</p>	<p>– (Korean Research Foundation) May 2021 – May 2024: Physiological and Ecological Interpretation of Hibernating Fish Using Multiple Stable Isotope Ratios</p>

4. Professor. Bum-Soo Park

Email : parkbs@hanyang.ac.kr / Website : http://hanyangamgak.gamgakdesign.com/main.php

<p>Education and Experience</p>	<p>March 2002 – February 2006: Bachelor’s Degree in Life Sciences, Hanyang University March 2006 – August 2014: Ph.D. in Life Sciences, Hanyang University October 2014 – May 2016: Postdoctoral Researcher, Natural Science Research Institute, Hanyang University June 2016 – August 2016: Postdoctoral Researcher, Natural Science Research Institute, Sangmyung University September 2016 – May 2019: Postdoctoral Researcher, Marine Science Institute, University of Texas at Austin May 2019 – August 2022: Senior Researcher, Korea Institute of Ocean Science & Technology (KIOST) September 2022 – Present: Assistant Professor, Department of Life Sciences, Hanyang University</p>
<p>Research Objectives</p>	<p>Investigating ecological interactions between phytoplankton and bacteria in aquatic systems using molecular ecological techniques</p>
<p>Desired Research Areas</p>	<p>Molecular Ecology</p>
<p>Recent Research Achievements (Publications)</p>	<p>Kim, J.-H., Kim, J.H., Kim, S.-H., Kang, Y.-H., Lee, J., Joo, J.-H., Han, M.-S., Park, B.S.* (2024) The impact of sexual reproduction-induced vertical migration on the complexity of harmful algal blooms in <i>Heterosigma akashiwo</i>. <i>Environmental Research</i>, 258, 119437 Kim, J.-H., Park, B.S.*, Kim, J.H.* (2023) Comprehensive understanding of the life history of harmful raphidophyte <i>Heterosigma akashiwo</i>: Integrating <i>in situ</i> and <i>in vitro</i> observations. <i>Harmful Algae</i>, 129, 102521. Kim, J.H.*, Ajani, P.A., Murray, S.A., Kang, S.-M., Kim, S.-H., Lim, H.C., Teng, S.T., Lim, P.T., Park, B.S.* (2023) Abiotic and biotic factors controlling sexual reproduction in populations of <i>Pseudo-nitzschia pungens</i> (Bacillariophyceae). <i>Harmful Algae</i>, 123, 102392.</p>
<p>Recent Research Projects</p>	<ul style="list-style-type: none"> - January 2023 – December 2024: Development of standard materials for domestic regulatory and non-regulatory toxins and new toxins Korea Food & Drug Administration - March 2023 – February 2026: Study on the growth enhancement mechanisms of oil-degrading bacteria in relation to harmful algal blooms using multi-omics techniques National Research Foundation of Korea - January 2023 – December 2026: Research on microalgae growth and useful substance production microbiomes Korea Institute of Marine Science and Technology Promotion - January 2023 – December 2025: Development of hull fouling organism management and assessment technologies Korea Institute of Marine Science and Technology Promotion

5. Research Professor. In-Hong Park

Email : boxps@hanyang.ac.kr / Website : <https://sites.google.com/view/boxps/>

<p>Education and Experience</p>	<p>Education</p> <ul style="list-style-type: none"> - FEB. 2020 Ph.D Climate Change, Pohang University of Science and Technology (POSTECH) - FEB. 2015 M.S Climatology, Konkuk University - FEB. 2009 B.S. Geography, Konkuk University <p>Research Experience</p> <ul style="list-style-type: none"> - MAR. 2022 ~ present Research assistant professor, Hanyang University ERICA
<p>Research Objectives</p>	<p>To assess the impacts of mitigation and adaptation strategies on climate change and reduce associated uncertainties.</p>
<p>Desired Research Areas</p>	<p>Climate teleconnection Climate change uncertainty analysis Climate change risk assessment Climate change impact</p>
<p>Recent Research Achievements (Publications)</p>	<ul style="list-style-type: none"> - Park I-H, Yeh S-W, Dewitte B, Wang G, Kirtman BP and An S-I. North Atlantic warming hole modulates interhemispheric asymmetry of future temperature and precipitation. <i>Earth's Future</i>, 2024,12(6), e2023EF004146. - Park, I.-H. & Yeh, S.-W. Projections of the North Atlantic warming hole can be constrained using ocean surface density as an emergent constraint. <i>Communications Earth & Environment</i>, 2024, 5(1), 98. - Park I-H, Yeh S-W, Cai W, Wang G, Min S-K, Lee S-K. Present-day North Atlantic salinity constrains future warming of the Northern Hemisphere. <i>Nature Climate Change</i> 2023, 13(8): 816-822. - Park I-H, Yeh S-W, Min S-K, Ham Y-G, Kirtman BP. Present-day warm pool constrains future tropical precipitation. <i>Communications Earth & Environment</i> 2022, 3(1): 310. - Park I-H, Yeh SW, Min SK, Son SW. Emergent constraints on future expansion of the Indo-Pacific warm pool. <i>Geophysical Research Letters</i> 2022, 49(1): e2021GL097343.
<p>Recent Research Projects</p>	<ul style="list-style-type: none"> - Research on Earth System Responses and Climate Change Impacts Due to Differences in Greenhouse Gas Emission Rates (Principal Investigator) - Study on the Correlation between Carbon Cycle and Climate Factors in East Asia (Researcher) - Diagnosis and Prediction of Extreme Weather and Climate Events Due to Modifications in East Asian Atmospheric Circulation (Researcher)

6. Research Professor. Doo-Young Lee

Email : dylee1220@gmail.com

<p>Education and Experience</p>	<p>Education</p> <ul style="list-style-type: none"> - February 2001: B.Sc. in Atmospheric Sciences, Kongju University - February 2004: M.Sc. in Earth Environmental Sciences, Seoul National University - February 2013: Ph.D. in Atmospheric Sciences, Pusan National University <p>Research Experience</p> <ul style="list-style-type: none"> - November 2015 – March 2017: Postdoctoral Researcher, Barcelona Supercomputing Center - July 2018 – August 2020: Postdoctoral Researcher, Los Alamos National Laboratory - December 2020 – August 2023: Research Fellow, Climate Science Institute, Pusan National University - September 2023 – Present: Research Professor, Institute of Ocean and Atmospheric Sciences, Hanyang University
<p>Research Objectives</p>	<ul style="list-style-type: none"> - Analyzing the Impact of Large-Scale Climate Variability and Changes on Mid-Latitude Climate
<p>Desired Research Areas</p>	<ul style="list-style-type: none"> - Large-Scale Climate Change and Climate Variability - Climate Diagnosis and Predictability
<p>Recent Research Achievements (Publications)</p>	<ul style="list-style-type: none"> - Lee, D. Y., J.-Y. Lee, Y.-M. Yang, P.-C. Hsu, and J.-E. Kim (2022), Dominant Processes for Dependence of Boreal Summer Intraseasonal Oscillation on El Niño Phases, <i>Geophysical Research Letters</i> - Lee, J.-Y. and D. Y. Lee (2022), Variability and Changes of Wildfire Potential over East Asia from 1981 to 2020, <i>J. Korean Earth Sci. Soc.</i> - Lee, D. Y., W. Lin, M. R. Petersen, (2020), Wintertime Arctic Oscillation and North Atlantic Oscillation and their impacts on the Northern Hemisphere climate in E3SM, <i>Clim Dyn.</i> - Lee, D. Y., M. R. Petersen, W. Lin (2019), The Southern Annular Mode and Southern Ocean Surface Westerly Winds in E3SM, <i>Earth and Space Science</i> - Lee, D. Y., F. J. Doblas-Reyes, V. Torralba, N. Gonzalez-Reviriego (2019), Multi-model seasonal forecasts for the wind energy sector, <i>Clim Dyn.</i>
<p>Recent Research Projects</p>	<ul style="list-style-type: none"> - Response of Mid-Latitude Extreme Climate to Arctic Sea Ice Changes: Recent Coupled Climate Model Experiments - Impact of Recent Changes in the Negative Pacific Decadal Oscillation on Winter Temperature Variations in East Asia - Influence of Winter Siberian Vegetation Changes on Wildfires in the Western United States

7. Research Professor. Hye-In Jeong

Email : hijeong@hanyang.ac.kr

<p>Education and Experience</p>	<p>Education</p> <ul style="list-style-type: none"> - February 2016: Ph.D. in Atmospheric Sciences, Pusan National University - February 2007: M.Sc. in Atmospheric Sciences, Pusan National University - August 2004: B.Sc. in Atmospheric and Environmental Sciences, Pusan National University <p>Research Experience</p> <ul style="list-style-type: none"> - September 2020 - Present: Research Assistant Professor, Hanyang University ERICA - April 2017 - August 2020: Postdoctoral Researcher, Los Alamos National Laboratory - February 2008 - March 2017: Researcher, APEC Climate Center
<p>Research Objectives</p>	<p>Global Climate Change Prediction Due to Antarctic Sea Ice Reduction and Southern Ocean Warming</p>
<p>Desired Research Areas</p>	<ul style="list-style-type: none"> - Study on Changes in Antarctic Sea Ice Vertical Circulation Due to Sea Ice Reduction - Investigation of Causes and Mechanisms of Southern Ocean Warming - Simulation of Antarctic Sea Ice Reduction and Global Climate Change Prediction Using Global Climate Modeling Experiments
<p>Recent Research Achievements (Publications)</p>	<p>Jeong, H., Lee, S. S., Park, H. S., and Stewart, A. (2023). Future changes in Antarctic coastal polynyas and bottom water formation simulated by a high-resolution coupled model. (In revision for Communications Earth & Environment)</p> <p>Jeong, H., Park, H. S., Chowdary, J. S., and Xie, S. P. (2023). Triple-dip La Niña contributes to Pakistan flooding and southern China drought in summer 2022. Bulletin of the American Meteorological Society (BAMS). https://doi.org/10.1175/BAMS-D-23-0002.1</p> <p>Jeong, H., Turner, A. K., Roberts, A. F., Veneziani, M., Price, S. F., Asay-Davis, X. S., Van Roedel, L. P., Lin, W., Caldwell, P. M., Park, H.-S., Wolfe, J. D., and Marnett, A. (2023). Southern Ocean polynyas and dense water formation in a high-resolution, coupled Earth system model, The Cryosphere, 17, 2681-2700, https://doi.org/10.5194/tc-17-2681-2023.</p> <p>Jeong, H., Park, H. S., Stuecker, M. F., & Yeh, S. W. (2022). Record Low Arctic Sea Ice Extent in 2012 Linked to Two-Year La Niña-Driven Sea Surface Temperature Pattern. Geophysical Research Letters, 49(9), e2022GL098385. https://doi.org/10.1029/2022GL098385.</p> <p>Jeong, H., Park, H. S., Stuecker, M. F., & Yeh, S. W. (2022). Distinct impacts of major El Niño events on Arctic temperatures due to differences in eastern tropical Pacific sea surface temperatures. Science Advances, 8(4), eabl8278. https://www.science.org/doi/10.1126/sciadv.abl8278.</p>
<p>Recent Research Projects</p>	<ol style="list-style-type: none"> 1) Impact of Three Consecutive La Niña Events on Mid-Latitude Climate: Analysis Using the Latest Coupled Climate Models and CMIP6 Data (Korean Research Foundation Creative Challenge Research Infrastructure Support Project, June 2023 - May 2026) 2) Prediction of Global Climate Change Due to Antarctic Ice Shelf Melting Using the Latest Coupled General Circulation Models (Korean Research Foundation Creative Challenge Research Infrastructure Support Project, June 2021 - May 2022)

8. Professor. Won-Choel Lee

Email : wlee@hanyang.ac.kr / Website : <http://www.copepoda.net/>

<p>Education and Experience</p>	<p>February 1988: B.Sc. in Biology, Hanyang University February 1990: M.Sc. in Biology, Hanyang University February 1994: Ph.D. in Biology, Hanyang University July 2024 – Present: Dean, College of Natural Sciences, Hanyang University September 2001 – Present: Associate Professor/Professor, Department of Life Sciences, Hanyang University March 2019 – Present: Chair, Department of Environmental Sciences, Hanyang University September 2013 – August 2019: Team Leader, BK21 Plus Eco-Bio Convergence Research Project January 2014 – December 2016: Chairperson, International Conference on Meiofauna and Macrobenthos</p>
<p>Research Objectives</p>	<p>Specializes in the diversity and taxonomy of marine zooplankton and meiofauna, aiming to update identification techniques and systems</p>
<p>Desired Research Areas</p>	<p>Integrates Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry (MALDI-TOF MS) with traditional methods for accurate species identification of dominant marine organisms and harmful marine species (e.g., jellyfish). Efforts include acquiring MALDI-TOF MS spectra data and standardizing measurement methods</p>
<p>Recent Research Achievements (Publications)</p>	<p>Jisu Yeom & Wonchoel Lee * 2023. A new species of RhyncholagenaLang, 1944 (Copepoda, Harpacticoida, Miraciidae) from Palau. Zookeys, 1180, 181-199. Park, Nayeon, Hyuntae Choi, Kyung-Hoon Shin, Wonchoel Lee* 2023. Distribution of siphonophores in the Northwest Pacific Ocean and links to environmental conditions. <i>Frontiers in Marine Science</i>, 10, 1223477. Nayeon Park†, Jisu Yeom†, Raehyuk Jeong & Wonchoel Lee* 2021. Novel attempt at discrimination of a bullet-shaped siphonophore (Family Diphyidae) using matrix-assisted laser desorption/ ionization time of flight mass spectrometry (MALDI-ToF MS). <i>Scientific Reports</i>, 11, 19077. Jisu Yeom†, Nayeon Park†, Raehyuk Jeong and Wonchoel Lee* 2021. Integrative Description of Cryptic Tigriopus Species From Korea Using MALDI-TOF MS and DNA Barcoding. <i>Frontiers in Marine Science</i>, 8, 648197</p>
<p>Recent Research Projects</p>	<ul style="list-style-type: none"> - Development of Species Identification Systems for Zooplankton and Meiofauna Using Protein Mass Spectrometry (Korean Research Foundation) - Study of Climate, Environmental, and Ecosystem Changes Affecting Carbon Cycling in the Northwest Pacific (Ministry of Science and ICT) - Monitoring and Research on the Environmental and Ecological Changes in the Four Major Rivers Estuaries / Development of Monitoring and Utilization Technologies for the Restoration of the Four Major Rivers (Ministry of Oceans and Fisheries) - Training Program for Specialists in Unexplored Taxa (Stage 4, excluding insects) (National Institute of Biological Resources/Ministry of Environment) - Study of Jellyfish Invasion and Ecological Indicators I (National Fisheries Research and Development Institute/Ministry of Oceans and Fisheries)

9. Professor. Jin-Hee Ok

Email : inheek@hanyang.ac.kr / Website : <http://plankton.hanyang.ac.kr/>

Education and Experience	2015: B.A. in Literature, Ewha Womans University 2022: Ph.D. in Science, Seoul National University 2024 – Present: Assistant Professor, Department of Marine Convergence Engineering, Hanyang University
Research Objectives	1. Understanding Marine Ecosystem Structure and Function: Aims to generate knowledge for predicting future marine ecosystems and for the sustainable conservation of these ecosystems. 2. Development of Useful Substances and Technologies Using Marine Plankton: Focuses on enhancing human welfare through the development of valuable substances and foundational technologies derived from marine plankton.
Desired Research Areas	Ecophysiological Responses and Roles of Marine Plankton under Climate Change
Recent Research Achievements (Publications)	Published a total of 35 SCI(E) papers from 2019 to 2024
Recent Research Projects	Establishment of Microscopic Imaging Systems for Research on Variations in Organic Carbon Retention and Transfer Due to Competition and Grazing Among Marine Microplankton (Ministry of Science and ICT, New Researcher Infrastructure Support Project, May 1, 2024 -)