

Y O U N G - O H K W O N

EDUCATION

- 1996 B.Sc., Seoul National University, Oceanography
1998 M.Sc., Seoul National University, Physical Oceanography (advisor: K. Kim)
2003 Ph.D., University of Washington, Physical Oceanography (advisor: S.C. Riser)

POSITIONS HELD

1996. 3 – 1998. 6 Research/Teaching Assistant, Dept. of Oceanography, Seoul National University
1998. 9 – 2003. 11 Research/Teaching Assistant, School of Oceanography, University of Washington
2003. 12 – 2006. 2 Postdoctoral Scientist, Climate Analysis Section/Climate and Global Dynamics Division, National Center for Atmospheric Research
2006. 3 – 2006. 10 Visiting Scientist, Climate Analysis Section/Climate and Global Dynamics Division, National Center for Atmospheric Research
2006. 11 – 2010. 10 Assistant Scientist, Dept. of Physical Oceanography, WHOI
2010. 10 – 2018. 11 Associate Scientist, Dept. of Physical Oceanography, WHOI (Tenured since May 2014)
2018. 12 – present Senior Scientist, Dept. of Physical Oceanography, WHOI

RESEARCH INTERESTS

Climate variability and predictability particularly on interannual to multi-decadal time scale; Ocean's role in climate; Atmospheric responses to the oceanic variability; Large-scale ocean general circulation; Meridional overturning circulation; Mode water; Thermocline ventilation; Arctic-low-latitude interaction; Coastal ocean and climate variability

PROFESSIONAL PUBLICATIONS AND PRESENTATIONS

Author or co-author of 65 refereed publications, 8 other publications. Author or co-author of approximately 150 conference abstracts; participant in approximately 100 national and international conferences, symposia and workshops.

AWARDS

Claudia Heyman Fellow of the Ocean Climate Change Institute, WHOI (2009-2012)

Invited participant, ONR sponsored 2005 summer school on Lagrangian Oceanography (University of Rhode Island, RI, 2005)

Invited participant, NSF-ONR sponsored 2nd Physical Oceanography Dissertation Symposium (PODS II) (Kona, HI, 2003)

Invited participant, NCAR Advanced Study Program Summer Colloquium on Dynamics of Decadal to Centennial Climate Variability (Boulder, CO, 2000)

RESEARCH GRANTS

Coupled Atmosphere-Ocean Mixed Layer Response to Extra-tropical Ocean Heat Transport Variations (PI: Clara Deser (NCAR), Co-PI: Young-Oh Kwon): NOAA OGP CLIVAR, \$333K for FY06-08.

Coupling An Entraining Ocean Mixed Layer Model to CCSM3 (PI: Clara Deser (NCAR), Co-PI: Young-Oh Kwon): DOE-CCPP / NSF-CLD SGER, \$25K for FY07.

Decadal Variability of the Atlantic Meridional Overturning Circulation and Its Impact on the Climate” (PIs: Young-Oh Kwon and Claude Frankignoul): WHOI OCCI, \$81K for FY07-08.

SGER: Quantification of Uncertainty in Argo Observation of Ocean Response to Hurricanes (PI: Young-Oh Kwon, Co-PIs: Jong-Jin Park and James Price): NSF OCE PO, \$90K for FY09-10.

Atmospheric Coupling to Gulf Stream and Kuroshio Path Changes (PI: Terry Joyce, Co-PI: Young-Oh Kwon): NASA PO, \$463K for FY09-11.

Collaborative Research: Evolution and Fate of Eighteen Degree Water in the North Atlantic Subtropical Gyre (PIs: Young-Oh Kwon, David Fratantoni, Fiammetta Straneo, Jong-Jin Park, Susan Lozier (Duke), and Lynne Talley (SIO)): NSF OCE PO, \$1,600K for FY10-13.

Decadal Variability of the Atlantic Meridional Overturning Circulation and Its Impact on the Climate: Two Regimes and Rapid Transition (PI: Young-Oh Kwon, Co-PIs: Claude Frankignoul (UPMC/IPSL) and Gokhan Danabasoglu (NCAR)): NOAA CPO, \$357K for FY11-13.

Kuroshio Transport: Interannual to Decadal Variability and the Underlying Mechanisms (PIs: Magdalena Andres, Young-Oh Kwon, Jiayan Yang: NSF OCE PO, \$542K for FY11-13.

Collaborative Research: Large-Scale Atmospheric Response to the North Pacific Western Boundary Current Fluctuations and its Potential Predictability (PIs: Young-Oh Kwon, Claude Frankignoul (UPMC/IPSL), Mike Alexander (NOAA/ESRL), and Matt Newman (NOAA/ESRL)): NSF AGS CLD, \$957K for FY11-13

Can changes in Silver Hake be related to and forecast by changes in the Gulf Stream path? (PIs: Terry Joyce and Young-Oh Kwon): WHOI OCCI, \$74K for FY11-12

Collaborative Project: Ocean-Atmosphere Interaction From Meso- to Planetary-Scale: Mechanisms, Parameterization, and Variability (PIs: Justin Small (NCAR), Frank Bryan (NCAR), Joe Tribbia (NCAR), John Dennis (NCAR), R. Saravanan (TAMU), Niklas Schneider (UH), Young-Oh Kwon): DOE SciDAC, \$1,071K for FY12-14

Collaborative Research EaSM2: Mechanisms, Predictability, Prediction, and Regional and Societal Impacts of Decadal Climate Variability (PIs: Gokhan Danabasoglu (NCAR), Jeff Anderson (NCAR), Grant Branstator (NCAR), Keith Lindsay (NCAR), Joe Tribbia (NCAR), Claude Frankignoul (UPMC/IPSL), Young-Oh Kwon, Minghua Zhang (SUNY Stony Brook)): NSF EaSM, \$3,987K for FY13-18

Coupling Between the Atmospheric Intra-Seasonal Variability and Ocean Circulation in the Northern Hemisphere (PIs: Young-Oh Kwon, Terry Joyce, Hyodae Seo): NASA PO, \$494K for FY13-17

- A Collaborative Multi-model Study: Understanding AMOC Variability Mechanisms and Their Impacts on Decadal Prediction (PIs: Gokhan Danabasoglu (NCAR), Alicia Karspeck (NCAR), Joe Tribbia (NCAR), Steve Yeager (NCAR), Tom Delworth (GFDL), Rym Msadek (GFDL), Anthony Rosati (GFDL), Young-Oh Kwon, Claude Frankignoul (UPMC/IPSL)): NOAA CPO, \$1,257K for FY13-16
- Decadal Variability in the North Atlantic Extra-Tropics: The Role of Coupling Between Atmospheric Blocking and the Atlantic Multidecadal Oscillation (PIs: Caroline Ummenhofer, Hyodae Seo, Young-Oh Kwon, Terry Joyce): NSF AGS CLD & OCE PO, \$500K for FY14-16.
- Interannual Variability of Winter-Spring Temperature in the Middle Atlantic Bight: Linkages to Large-Scale Atmospheric and Oceanic Changes (PIs: Ke Chen, Glen Gawarkiewicz, Young-Oh Kwon): NSF OCE PO, \$768K for FY15-17
- Compensation Between Poleward Energy Transports in the Ocean and Atmosphere (PIs: Young-Oh Kwon, Clara Deser (NCAR), Jian Lu (PNNL)): DOE CESD RGCM, \$482K for FY16-18.
- Joint Research: Interactions Between the East China Sea and North Pacific Interannual-to-Decadal Variability (PIs: Young-Oh Kwon, Bolan Gan (OUC), Zhigang Yao (OUC), Terry Joyce, Ke Chen): OUC-WHOI Joint Center, \$183K for FY16-17.
- Development and evaluation of a seasonal-to-interannual statistical forecasting system for oceanographic conditions and living marine resources on the Northeast U.S. Shelf Ecosystem (PIs: Y.-O. Kwon, Ke Chen, Glen Gawarkiewicz, Terry Joyce, Janet Nye (Stony Brook Univ.), Jon Hare (NEFSC), Paula Fratantoni (NEFSC), Vince Saba (NEFSC), Tim Miller (NEFSC)): NOAA MAPP, \$510K for FY17-19.
- Collaborative research: the influence of arctic – lower-latitude interactions on weather and climate variability: mechanisms, predictability, and prediction (PIs: Young-Oh Kwon, Claude Frankignoul, Gokhan Danabasoglu (NCAR), Steve Yeager (NCAR)): NSF PLR ANS, EaSM, and OCE PO, \$800K for FY18-20.
- The Atlantic Multidecadal Oscillation: Key Drivers and Climate Impacts (PIs: Young-Oh Kwon, Claude Frankignoul, Jian Lu (PNNL)): DOE RGMA, \$1,016K for FY19-21.
- Regional multi-year prediction for the Northeast U.S. Continental Shelf (PIs: Young-Oh Kwon, Hyodae Seo, Ke Chen, Paula Fratantoni (NEFSC), Vincent Saba (NEFSC), and Michael Alexander (ESRL)): NOAA CVP, \$658K for FY21-23.
- Gulf Stream Frontal Strength Variability and its Impact on Climate (PIs: Young-Oh Kwon, Rhys Parfitt (FSU)): NASA PO, \$687K for FY21-23. [*Pending*]
- NSFGEO-NERC: Large-Scale Atmospheric Circulation Response to Oyashio Extension Frontal Variability (PIs: Young-Oh Kwon, Claude Frankignoul, Gokhan Danabasoglu (NCAR), Clara Deser (NCAR), Arnaud Czaja (Imperial Univ)): NSF AGS CLD, \$860K for FY21-23. [*Pending*]
- Dynamical Processes Linking the Interannual and Decadal Variability of the Mid-Atlantic Bight Cold Pool to the Gulf Stream (PIs: Zhuomin Chen, Ke Chen, Young-Oh Kwon): NSF OCE PO, \$782K for FY21-23. [*Pending*]
- The Oceanic Fingerprint of the Forced Response to Anthropogenic Aerosols (PIs: Susan Wijffels, Young-Oh Kwon, Jiarui Shi): NSF OCE PO, \$886K FY21-23. [*Pending*]

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- [6] Kwon, Y.-O., and C. Deser, 2007: North Pacific decadal variability in Community Climate System Model Version 2. *J. Climate*, **20**, 2416–2433.
- [7] Jochum, M., G. Danabasoglu, M. Holland, Y.-O. Kwon, and W.G. Large, 2008: Ocean viscosity and climate, *J. Geophys. Res.*, **113**, C06017, doi:10.1029/2007JC004515.
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- [51] Jin, X.*, Y.-O. Kwon, C.C. Ummenhofer, H. Seo, Y. Kosaka, and J.S. Wright, 2018b: Influence of Tropical Pacific SST on Decadal Variations in Subsurface Indian Ocean Heat Content in a Coupled Model. *J. Climate*, **31**, 7751-7769. <https://doi.org/10.1175/JCLI-D-18-0184.1>.
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- [53] Small, R.J., R. Msadek, Y.-O. Kwon, J.F. Booth, and C. Zarzycki, 2019: Atmosphere surface storm track response to resolved ocean mesoscale in two sets of global climate model experiments. *Climate Dyn.*, **52**, 2067-2089. <https://doi.org/10.1007/s00382-018-4237-9>.
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- [57] Zhang, R., R. Sutton, G. Danabasoglu, Y.-O. Kwon, R. Marsh, S.G. Yeager, D.E. Amrhein, and C.M. Little, 2019: A Review of the Role of the Atlantic Meridional Overturning Circulation in Atlantic Multidecadal Variability and Associated Climate Impacts. *Rev. Geophys.*, **57**, doi: 10.1029/2019RG000644.

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- [62] Simon, A., C. Frankignoul, G. Gastineau, and Y.-O. Kwon, 2020: An observational estimate of the direct response of the cold season atmospheric circulation to the Arctic sea ice loss. *J. Climate*, **33**, 3863-3882. <https://doi.org/10.1175/JCLI-D-19-0687.1>.
- [63] Parfitt, R.*, and Y.-O. Kwon, 2020: The modulation of Gulf Stream influence on the troposphere by the eddy-driven jet. *J. Climate*, **33**, 4109-4120. <https://doi.org/10.1175/JCLI-D-19-0294.1>.
- [64] Jacox, M. G., M. A. Alexander, S. Siedlecki, K. Chen, Y.-O. Kwon, S. Brodie, I. Ortiz, D. Tommasi, M. J. Widlansky, D. Barrie, A. Capotondi, W. Cheng, E. Di Lorenzo, C. A. Edwards, J. Fiechter, P. Fratantoni, E. L. Hazen, A. J. Hermann, A. Kumar, A. J. Miller, D. Pirhalla, M. Pozo Buil, S. Ray, S. C. Sheridan, A. Subramanian, P. Thompson, L. Thorne, H. Annamalai, S. J. Bograd, R. B. Griffis, H. Kim, A. Mariotti, M. Merrifield, and R. R. Rykaczewski, 2020: Seasonal-to-interannual prediction of U.S. coastal marine ecosystems: Forecast methods, mechanisms of predictability, and priority developments. *Progress in Oceanography*, **183**. <https://doi.org/10.1016/j.pocean.2020.102307>.
- [65] Athanasiadis, P., S. Yeager, Y.-O. Kwon, A. Bellucci, D.W. Smith*, and S. Tibaldi, 2020: Decadal predictability of North Atlantic blocking and the NAO. *npj Clim. Atmos. Sci.*, **3**, <https://doi.org/10.1038/s41612-020-0120-6>.

PAPERS SUBMITTED

- Fleming, L.E.*, Y.-O. Kwon, R. Vargas-Martes*, G. Gebbie, and H. Furey: The Influence of Northward Heat Transport on Arctic Amplification in the Community Earth System Model Version 1 Large Ensemble. *Geophys. Res. Lett.*, Submitted.
- Liang, Y.-C.*, Y.-O. Kwon, and C. Frankignoul: Autumn Arctic Pacific Sea-ice Dipole as a Source of Predictability for Subsequent Spring Barents-Kara Sea-ice Condition. *J. Climate.*, Submitted.
- Liang, Y.-C.*, C. Frankignoul, Y.-O. Kwon, G. Gastineau, E. Manzini, G. Danabasoglu, L. Suo, S. Yeager, Y. Gao, J.J. Attema, A. Cherchi, R. Ghosh, D. Matei, J.V. Mecking, T. Tian, and Y. Zhang: Are the Impacts of the Observed Arctic Sea-ice Variability on the Cold Season Atmospheric Circulation Underestimated in AGCM Experiments? *J. Climate.*, Submitted.
- Yamamoto, A., M. Nonaka, P. Martineau, A. Yamazaki, Y.-O. Kwon, H. Nakamura, and B. Taguchi: Oceanic Origin for Wintertime Euro-Atlantic Blocking. *Weather and Climate Dyn.*, Submitted.

OTHER PUBLICATIONS

- Kwon, Y.-O., 1996: Secular changes of potential temperature, salinity and dissolved oxygen in the East Sea. M.Sc. Thesis, Seoul National Univ., pp. 140. (Advisor: K. Kim)
- Kwon, Y.-O., 2003: Observation of general circulation and water mass variability in the North Atlantic subtropical mode water region. Ph.D. Thesis. Univ. Washington, pp.161. (Advisor: S. C. Riser)
- Kwon, Y.-O., 2007: Argo -Global Ocean Observing Array-. Korean Atmospheric Scientist in America Monthly Newsletter. 2007.
- Park, J.-J., H.-Y. You, Y.-O. Kwon, H.-T. Oh, 2009: Matlab Recipes for Earth Sciences (Korean translation). Ajin Publ. pp.286.
- Johns, W., P. Chang, G. Danabasoglu, P. Heimbach, Y. Kushnir, Y.-O. Kwon, D. Legler, S. Lozier, C. Stephens, J. Willis, and R. Zhang, 2011: Third Annual Progress Report for a JSOST Near-term Priority Assessing Meridional Overturning Circulation Variability: Implications for Rapid Climate Change. Report 2011-1, U.S. CLIVAR Office, Washington, DC 20006, 66 pp.
- Johns, W., P. Chang, G. Danabasoglu, P. Heimbach, Y. Kushnir, Y.-O. Kwon, S. Lozier, M. Patterson, J. Willis, and R. Zhang, 2012: Fourth Annual Progress Report for a JSOST Near-Term Priority Assessing Meridional Overturning Circulation Variability: Implications for Rapid Climate Change, Report 2012-1, U.S. CLIVAR Office, Washington, DC 20006, 100 pp.
- Johns, W., P. Chang, G. Danabasoglu, P. Heimbach, Y. Kushnir, Y.-O. Kwon, S. Lozier, M. Patterson, J. Willis, and R. Zhang, 2013: Fifth Annual Progress Report for a SOST Near-Term Priority Assessing Meridional Overturning Circulation Variability: Implications for Rapid Climate Change, Report 2013-2, U.S. CLIVAR Office, Washington, DC 20006, 102 pp.
- Carton, J., S. A. Cunningham, E. E. Frajka-Williams, Y.-O. Kwon, D. P. Marshall, R. Msadek, 2014: The Atlantic Overturning Circulation: More evidence of variability and links to climate", *Bull. Amer. Meteor. Soc.*, **95**, ES163–ES166. doi: <http://dx.doi.org/10.1175/BAMS-D-13-00234.1>.
- Zhang, R., R. Sutton, G. Danabasoglu, Y.-O. Kwon, R. Marsh, S.G. Yeager, D.E. Amrhein, C.M. Little, 2019: Effects of Variability in Atlantic Ocean Circulation. *EOS*, **100**, <https://doi.org/10.1029/2019EO127703>. Published on 09 July 2019.

TEACHING AND ADVISING ACTIVITIES

Postdoctoral supervisor: for Jong-Jin Park (July-October 2009), Magdalena Andres (co-supervised with Jiayan Yang, September 2009-July 2011), Xujing Davis (co-supervised with Fiamma Straneo, March 2010-Feb 2011 / co-supervised with Terry Joyce, March 2011-May 2011), Rhys Parfitt (co-supervised with Lisan Yu, Hyodae Seo, Caroline Ummenhofer, September 2016-), Yu-Chiao Liang (June 2017-)

Advisor/Sponsor:

MIT-WHOI Joint Program: Laura Fleming (July 2015-January 2019), Glenn Liu (June 2019-).

WHOI Summer/Winter Student Fellows: Marley Bice (June-August 2007), Sasha Glanville (June-August 2011), Genevieve Brett (Jan 2012; Also incoming Joint Program student summer project, June-August 2012), Teddy Amdur (January-May 2014).

WHOI Guest Students: Hanna Na (March-April 2008), Sang-Shin Byun (December 2008-January 2009), Charlene Feucher (April-August 2013), Benjamin Richaud (September 2014-May 2015), Xiaolin Jin (October 2016-September 2017), David Smith (January-June 2017).

NCAR SOARS Student: Carlos Martinez (May-July 2014), Alicia Camacho (May-July 2015), Rosa Vargas-Martinez (May-July 2017).

Teaching:

'Introduction to the Observational Physical Oceanography' (Graduate level, MIT-WHOI Joint Program / Fall Semester 2010, co-taught with Fiamma Straneo / Fall Semester 2011, co-taught with Steve Jayne / Fall Semester 2012, co-taught with Anthony Kirincich);

'Climate Change Science: Facts, Questions, Controversies and Communication' (Graduate level, MIT-WHOI Joint Program / Spring Semester 2014, co-taught with Fiamma Straneo and Sarah Das);

'Classic Papers in Physical Oceanography' (Graduate level, MIT-WHOI Joint Program / Spring Semester 2015/2017/2018, co-taught with Irina Rypina);

'Large-scale Ocean Dynamics' (Graduate level, MIT-WHOI Joint Program / Spring Semester 2017/2018, co-taught with Jiayan Yang)

Additional lectures: Extra-tropical climate variability –seeking for the role of ocean – (WHOI Summer Student Fellow Lecture, August 2009); Decadal climate variability (Guest lecture for MIT-WHOI JP 12.860 Climate Variability and Diagnostics, April 2014, March 2016/ 12.808 Introduction to Physical Observational Oceanography, October 2016); Several lectures as part of the teaching assistant duties (see below).

Teaching assistant: Physical Processes in the Ocean (Undergraduate Senior level, LuAnne Thompson, University of Washington, Fall Quarter, 2002). Duties: Developing Matlab-based in-class computer demonstrations; Physics of Ocean Circulation (Graduate level, Stephen C. Riser, University of Washington, Fall Quarter, 2001). Duties: Lectures on basic math and physics for out-of-option students, climate variability (e.g. NAO and PDO), thermocline theory, continuity, and beta-plane approximation. Office hours for problem solving; Introduction to GFD (Undergraduate Junior level, Kuh Kim, Seoul National University, Spring Semester, 1997). Duties: Running problem solving sessions. Grading homework and exams.

OTHER PROFESSIONAL ACTIVITIES

Society Memberships: American Geophysical Union (2000-present); American Meteorological Society (2008-present); Korean Oceanography Society (1998-present).

Journal Reviewer: Journal of Physical Oceanography, Journal of Climate, Journal of Geophysical Research – Ocean, Journal of Geophysical Research – Atmosphere, Deep-Sea Research, Geophysical Research Letters, Journal of Marine Research, Journal of Oceanography, Asia-Pacific Journal of Atmospheric Sciences, Theoretical and Applied Climatology, Climate Dynamics, AGU-monologue, Nature Climate Change, Nature Communication, Ocean Science,

Proceedings of National Academy of Science, Progress in Oceanography, Geophysical Model Development.

Proposal Reviewer: NSF-OCN-PO, NSF-ATM-CLD, NSF-CRI_EaSM, Netherlands Organization for Scientific Research, UK NERC, NOAA MAPP Panel, WHOI OCCI Panel, WHOI Ocean Institutes Catalyst Panel, WHOI Independent Study Panel

Associate Editor: Journal of Climate (Aug 2016-).

Guest Editor: Deep-Sea Research II Special Issue on the North Atlantic Subtropical Mode Water (Sep 2010-Oct 2013, with D. Fratantoni and L. Thomas).

WHOI Committees: Physical Oceanography Department Postdoc Coordinator / Postdoctoral Scholarship Selection Committee (2010-2013); Summer Student / Minority Student Fellow Admission Committee (2009-2010); Physical Oceanography Department Postdoc Mentoring Committee (2009); Climate Research Initiative Committee (2009-2011); Physical Oceanography Department Scientific Staff Recruitment Committee (2010, 2014-present); Physical Oceanography Department Administrative Associate Hiring Interview Panel (2010); *Ad hoc* CMIP-5 storage server committee (2012-present); UCAR member representative for WHOI (2016-2018); Education Council (2017-present)

Community Activities: Member: AMS Climate Variability and Change Committee (2019-present); NOAA Climate Program Office (CPO) Earth System Science and Modeling (ESSM) Advisory Council (2017-present); NOAA CPO Marine Prediction Task Force (2017-present); International CLIVAR Atlantic Regional Panel (2013-2018); AMS Air-Sea Interaction Committee (2013-2018); U.S.-CLIVAR Atlantic Meridional Overturning Circulation Science Team Executive Committee (2010-2013); U.S.-CLIVAR Western Boundary Current Ocean-Atmosphere Interaction Working Group (2007-2009); Community Climate System Model (CCSM) Climate Variability Working Group (2004-present); Community Climate System Model (CCSM) Ocean Model Working Group (2004-present); Meeting Organizing Committee Member: U.S. CLIVAR Western Boundary Current Workshop (Phoenix, AZ, January 2009); CLIMODE Annual PI Workshop (WHOI, August 2010, July 2011, July 2012); 2012 U.S. AMOC Annual PI Meeting (Boulder, CO, August 2012); U.S. AMOC-U.K. RAPID International Science Meeting (Baltimore, MD, July 2013); Frontal Scale Air-Sea Interaction Workshop (Boulder, CO, August 2013); AMS 19th conference on Air-Sea Interaction (Phoenix, AZ, January 3-6, 2014); AMS 21st Conference on Air-Sea Interaction/23rd Symposium on Boundary Layers and Turbulence (Oklahoma City, OK, June 11-15, 2018)

Outreach: Classroom visit: North Falmouth Elementary School Kindergarten (April 2007), North Falmouth Elementary School 1st Grade (June 2008); Hosting Class to WHOI and USGS: North Falmouth Elementary School 3rd Grade (February, March 2010); Falmouth Public School Science Fair: Judge (Feb 2015, Feb 2016, Feb 2017).

FIELD EXPERIENCE

1996.4 SNU-KORDI (Chief Scientist: Sang-Kyung Byun, KORDI) in the Ulleung Basin, East Sea (R/V Eardo). Duties: Current Meter Mooring (RCM-8), CTD survey (SBE19)

- 1996.5 PRIMER II (Chief Scientist: Ken Brink, WHOI) at the Georges Bank, North Atlantic (R/V Endeavor). Duties: Observing the SeaSoar test
- 1996.6 SNU RIO-KNRL (Chief Scientist: Keun-Sik Lim, Korean Naval Academy) in the Ulleung Basin, East Sea. Duties: CTD survey (SBE19), ADCP survey (RDI BB-ADCP)
- 1996.8 CREAMS (Chief Scientist: Kuh Kim, SNU) in the East Sea (R/V Professor Khromov). Duties: CTD survey (SBE9/11), ADCP survey (RD BB-ADCP), PALACE floats deployment
- 1996.10 SNU-KORDI-WHOI (Chief Scientist: Sang-Kyung Byun, KORDI) in the Ulleung Basin, East Sea (R/V Eardo). Duties: Current Meter (VACM) mooring, CTD survey (SBE19)
- 1997.3 CREAMS (Chief Scientist: Kyung-Ryul Kim, SNU) in the East Sea (R/V Gordienko). Duties: CTD survey (SBE9/11), Surface Drifters deployment.

INVITED SEMINAR PRESENTATIONS / LECTURES

- Observations of the Eighteen Degree Water using Profiling Floats*, Seoul National Univ., Oct 2003
- Observations of the Eighteen Degree Water using Profiling Floats*, KORDI, Oct 2003
- North Pacific Decadal Variability in CCSM2 Control Integration*, Seoul National Univ., Dec 2004
- North Pacific Decadal Variability in CCSM2 Control Integration*, GSO-URI, May 2007
- Extra-tropical Climate Variability – Seeking for the Role of Ocean -*, Seoul National Univ., Nov 2008
- Extra-tropical Climate Variability – Seeking for the Role of Ocean -*, Hanyang Univ., Nov 2008
- Coupled Atmosphere – Mixed Layer Ocean Response to Geostrophic Ocean Heat Transport Variations in the Kuroshio Current Extension*, KORDI, Nov 2008
- Multi-decadal Variability of the Atlantic Meridional Overturning Circulation in a Climate Model*, GSO-URI, May 2009
- Low-frequency variability in the western boundary currents and their extensions - Mechanisms and their impacts -*, POSTI-POSTEC, Nov 2010
- Atmosphere-Ocean Variability Associated with Kuroshio and Oyashio Extension Fluctuations*, KORDI, Nov 2010
- Atmosphere-Ocean Variability Associated with Kuroshio and Oyashio Extension Fluctuations*, Seoul National Univ, Nov 2010
- Atmosphere-Ocean Variability Associated with Kuroshio and Oyashio Extension Fluctuations*, GSO-URI, Apr 2011
- Atmosphere-Ocean Variability Associated with Kuroshio and Oyashio Extension Fluctuations*, LDEO, November 2011
- Multi-decadal Variability of Atlantic Meridional Overturning Circulation in the Community Climate System Model Version 3: Depth vs. Density spaces*, GSO-URI, March 2013
- Multidecadal Variability of the Atlantic Meridional Overturning Circulation and Its Impact on the Atmospheric Circulation*, NOAA Climate Variability and Predictability Webinar Series, September 2015
- Multidecadal Variability of the Atlantic Meridional Overturning Circulation and Its Impact on the Atmospheric Circulation*, Harvard, October 2015
- North Atlantic Blocking Variability and Role of the Atlantic Multidecadal Oscillation*, Stony Brook University, November 2016
- North Atlantic Blocking Variability and Role of the Atlantic Multidecadal Oscillation*, URI/GSO, September 2017

CONFERENCE PRESENTATIONS FOR THE LAST 5 YEARS

- Kwon, Y.-O., S.F. Gary, J.-J. Park, M.S. Lozier, 2013: Lagrangian pathways and reemergence of newly formed Eighteen Degree Water, 2013 EGU, Vienna, Austria, April 7-12, 2013.
- Grist, J., S.A. Josey, R. Marsh, Y.-O. Kwon, R.J. Bingham, A.T. Blaker, 2013: The Surface-Forced Overturning of the North Atlantic: Estimates from Modern Era Atmospheric Reanalysis Datasets. U.S. AMOC – U.K. RAPID International Science Meeting, Baltimore, MD, July 16-19, 2013.
- Grist, J., S.A. Josey, R. Marsh, Y.-O. Kwon, R.J. Bingham, A.T. Blaker, 2013: The Surface-Forced Overturning of the North Atlantic: Estimates from Modern Era Atmospheric Reanalysis Datasets. IAHS-IAPSO-IASPEI Joint Assembly, Gothenburg, Sweden, July 22-26, 2013.
- Alexander, M.A., D. Smirnov, M. Newman, Y.-O. Kwon, and C. Frankignoul, 2013: Air-Sea interaction over the North Pacific: diagnosing the role of Kuroshio-Oyashio Extension variability. Climate Implications of Frontal Scale Air-Sea Interaction Workshop, Boulder, CO, August 5-7, 2013.
- Smirnov, D., M.A. Alexander, M. Newman, Y.-O. Kwon, and C. Frankignoul, 2013: The atmospheric response to Oyashio frontal shifts in an atmospheric GCM. Climate Implications of Frontal Scale Air-Sea Interaction Workshop, Boulder, CO, August 5-7, 2013.
- Frankignoul, A. Révelard, N. Sennéchal, Y.-O. Kwon, 2013: Influence of the variability of the Kuroshio Extension on the atmospheric circulation. Climate Implications of Frontal Scale Air-Sea Interaction Workshop, Boulder, CO, August 5-7, 2013.
- Small, J., F. Bryan, B. Tomas, and Y.-O. Kwon, 2013: Storm track response to Ocean Fronts in a global high-resolution climate model. Climate Implications of Frontal Scale Air-Sea Interaction Workshop, Boulder, CO, August 5-7, 2013.
- Kwon, Y.-O. and T.M. Joyce, 2013: Northern Hemisphere Atmospheric Transient Eddy Fluxes and Their Co-variability with the Gulf Stream and Kuroshio-Oyashio Extensions. Climate Implications of Frontal Scale Air-Sea Interaction Workshop, Boulder, CO, August 5-7, 2013.
- Danabasoglu, G., J. Anderson, G. Branstator, K. Lindsay, J. Tribbia, C. Frankignoul, Y.-O. Kwon, M. Zhang, A. Karspeck, S. Yeager, L. Jiang, A. Chatterjee, M. Long, 2014: Collaborative Research EaSM2: Mechanisms, Predictability, Prediction, and Regional and Societal Impacts of Decadal Climate Variability, Annual EaSM PI meeting, Washington D.C., January 27-29, 2014.
- Smirnov, D., M. Newman, M. Alexander, Y.-O. Kwon, and C. Frankignoul, 2014: The atmospheric response to a shift in the Oyashio SST front. AMS 2014, Atlanta, GA, Feb.2-6, 2014.
- Seo, H., Y.-O. Kwon, and J.J. Park, 2014: On the effect of the East/Japan Sea SST variability on the North Pacific atmospheric circulation. Ocean Sciences Meeting 2014, Honolulu, HI, Feb 23-28, 2014.
- Min, H.S., and Y.-O. Kwon, 2014: Comparison of North Pacific Intermediate Water distribution between observation and CCSM4. Ocean Sciences Meeting 2014, Honolulu, HI, Feb 23-28, 2014.

- Alexander, M.A., D. Smirnov, M. Newman, Y.-O. Kwon, and C. Frankignoul, 2014: The atmospheric response to Oyashio front shifts in an atmospheric GCM. Ocean Sciences Meeting 2014, Honolulu, HI, Feb 23-28, 2014.
- Gary, S.F., M.S. Lozier, Y.-O. Kwon, and J.J. Park, 2014: The Fate of North Atlantic Subtropical Mode Water in the FLAME Model, Ocean Sciences Meeting 2014, Honolulu, HI, Feb 23-28, 2014.
- Smirnov, D., M. Newman, M. Alexander, Y.-O. Kwon, and C. Frankignoul, 2014: The atmospheric response to a shift in the Oyashio SST front. CESM Climate Variability Working Group Meeting 2014, Boulder, CO, Mar 16, 2014.
- Seo, H., Y.-O. Kwon, and J.J. Park, 2014: Effect of sea surface temperature variability in the East/Japan Sea on the North Pacific atmospheric circulation in a regional climate model. EGU2014, Vienna, Austria, April 27-May 2, 2014.
- Jeremy G.P., S.A. Josey, R. Marsh, Y.-O. Kwon, R.J. Bingham, and A.D. Blaker, 2014: The Surface-Forced Overturning of the North Atlantic: Estimates from Modern Era Atmospheric Reanalysis Datasets, EGU2014, Vienna, Austria, April 27-May 2, 2014.
- Pak, G., Y.-H. Park, F. Vivier, Y.-O. Kwon, and K.-I. Chang, 2014: Regime-dependent nonstationary relationship between the East Asian winter monsoon and North Pacific Oscillation, EGU2014, Vienna, Austria, April 27-May 2, 2014.
- Small, J., F. Bryan, J. Tribbia, S. Park, J. Dennis, R. Saravanan, N. Schneider, and Y.-O. Kwon, 2014: Ocean-Atmosphere Interaction from Meso- to Planetary-Scale: Mechanisms, Parameterization, and Variability. DOE Climate Modeling PI Workshop, Potomac, MD, May 12-14, 2014.
- Kwon, Y.-O., 2014: CLIMODE-related model-data comparison. Pan-CLIVAR, The Hague, Netherlands, July 14-18, 2014.
- Kwon, Y.-O., 2014: Atlantic Meridional Overturning Circulation (AMOC) variability and the Overturning in the Subpolar North Atlantic Program (OSNAP), Ocean Carbon and Biogeochemistry Summer Science Workshop, Woods Hole, MA, July 21-24, 2014.
- Small, J., J. Booth, and Y.-O. Kwon, 2014: Surface Storm Tracks over the Ocean in Global Climate Model. AOGS2014, Sapporo, Japan, July 28-Aug 1, 2014.
- Alexander, M.A., D. Smirnov, M. Newman, Y.-O. Kwon, and C. Frankignoul, 2014: The Atmospheric Response to a Shift in the Oyashio in an AGCM: the role of resolution, AOGS2014, Sapporo, Japan, July 28-Aug 1, 2014.
- Davis, X.J. T.M. Joyce, and Y.-O. Kwon, 2014: Prediction of silver hake distribution on the Northeast U.S. shelf based on Gulf Stream path index. IMBER ClimEco4 summer program: Delineating the Issues of Climate Change and Impacts to Marine Ecosystems: Bridging the Gap Between Research, Assessment, Policy and Management, Shanghai, China, August 4-9, 2014.
- Kwon, Y.-O., C. Frankignoul, and G. Gastineau: 2014: Influence of AMOC variability on the atmospheric circulation in CCSM4, US AMOC Science Team meeting, Seattle, WA, Sep 9-11, 2014.
- Martinez C, Y.-O. Kwon, H. Seo, and J. Small, 2014: North Atlantic atmospheric blocking and Atlantic Multidecadal Oscillation: Analysis through models, reanalysis and datasets. Submitted to SACNAS National Conference, Los Angeles, CA, Oct 16 – 18, 2014.
- Martinez C, Y.-O. Kwon, H. Seo, and J. Small, 2014: North Atlantic Atmospheric Blocking and Atlantic Multidecadal Oscillation in CESM1 Large Ensemble Simulations. AGU, San Francisco, Dec 15-19, 2014.

- Kwon, Y.-O., C.C. Ummerhofer, H. Seo, and T.M. Joyce, 2015: North Atlantic Blocking Variability and Role of the Atlantic Multidecadal Oscillation, AMS2015, Phoenix, AZ, Jan 5-8, 2015
- Newman, M., D. Smirnov, M. Alexander, Y. O. Kwon, and C. Frankignoul, 2015: Investigating the atmospheric response to a realistic shift in the Oyashio sea surface temperature front, AMS2015, Phoenix, AZ, Jan 5-8, 2015.
- Small, R.J., J. Booth, Y.-O. Kwon, and R. Msadek, 2015: Surface storm tracks over the ocean in global climate models, AMS2015, Phoenix, AZ, Jan 5-8, 2015.
- Martinez, C.J., Y.-O. Kwon, H. Seo, and R.J. Small, 2015: North Atlantic Atmospheric Blocking and Atlantic Multidecadal Oscillation in CESM1 Large Ensemble Simulations, AMS2015, Phoenix, AZ, Jan 5-8, 2015.
- Amdur IV, S.T., Y.-O. Kwon, C.C. Ummerhofer, and M.S. Cook, 2015: Regional Forcing Mechanisms for Winter Precipitation Variability in Coastal New England, AMS2015, Phoenix, AZ, Jan 5-8, 2015.
- Park Y.-H., G. Pak, F. Vivier, Y.-O. Kwon, and K.-I. Chang: Nonstationary tropical-extratropical connection in the western North Pacific across the 1988 regime shift of the East Asian winter monsoon, 18th Pacific-Asian Marginal Seas (PAMS) Meeting, Okinawa, Japan, April 21-23, 2015.
- Richaud, B., Y.-O. Kwon, and T.M. Joyce: Surface and Bottom Temperature and Salinity Climatology and Long-Term Changes along the Continental Shelf off the Canadian and U.S. East Coasts. 2015 Joint Assembly for AGU-CGU-GAC-MAC, May 3-7 2015, Montreal, Canada.
- Ummerhofer, C.C., H. Seo, Y.-O. Kwon, and T.M. Joyce: Links between North Atlantic atmospheric blocking and recent trends in European winter precipitation. EGU2015, Vienna, Austria, Apr 12-17, 2015.
- Chen, K., G.G. Gawarkiewicz, Y.-O. Kwon, and W.G. Zhang: Heat balance in the Northeast U.S. coastal ocean: the role of atmospheric forcing versus ocean advection during an extreme case in 2012. Gordon Research Conference-Coastal Ocean Modeling, U. New England, Biddeford, ME, June 7-12, 2015.
- Smirnov, D., M. Newman, M. Alexander, Y. O. Kwon, and C. Frankignoul, 2015: Investigating the atmospheric response to a realistic shift in the Oyashio sea surface temperature front, IUGG2015, Prague, Czech Republic, June 22-July 2, 2015.
- Kwon, Y.-O., J.F. Booth, R.J. Small, and R. Msadek: The Surface Storm Tracks in the Three CMIP5 Global Climate Models, AGU Fall Meeting, San Francisco, CA, Dec 14-18, 2014.
- Camacho, A., Y.-O. Kwon, and H. Seo: North Atlantic Oscillation, Jet and Blocking in CESM1 Large Ensemble Simulations, AMS 96th Annual Meeting, 28th Conference on Climate Variability and Change, New Orleans, LA., Jan 10-14, 2016.
- Kwon, Y.-O., B. Taguchi, C. Frankignoul, and A. Revelard: Low-frequency Variability of Kuroshio and Oyashio Extensions and Associated Ocean-Atmosphere Coupling. 2016 Ocean Sciences Meeting, New Orleans, LA., Feb 21-26, 2016
- Booth, J.F., Y.-O. Kwon, J. Small, R. Msadek, and S. Ko: The Surface Storm Tracks in Three CMIP5 Global Climate Models. 2016 Ocean Sciences Meeting, New Orleans, LA., Feb 21-26, 2016
- Chen, K., G. Gawarkiewicz, J. Bane, S. Lentz, Y.-O. Kwon, and G. Zhang: Coastal Seas and Deep Ocean Connections: Observing and Modeling for Process and Climate Studies. 2016 Ocean Sciences Meeting, New Orleans, LA., Feb 21-26, 2016

- Alexander, M., Y.-O. Kwon, C. Frankignoul, and M. Newman: The Seasonality and Nonlinearity of the Atmospheric Response to SST Anomalies Associated with Shifts in the Oyashio Front. 2016 Ocean Sciences Meeting, New Orleans, LA., Feb 21-26, 2016
- Revelard, A., C. Frankignoul, and Y.-O. Kwon: Influence of the Decadal Variability of the Kuroshio Extension on the Atmospheric Circulation in the Cold Season. 2016 Ocean Sciences Meeting, New Orleans, LA., Feb 21-26, 2016
- Seo, H. Y.-O. Kwon, and T. M. Joyce: Predominant nonlinear atmospheric response to meridional shift of the Gulf Stream path from the WRF atmospheric model simulations. 2016 Ocean Sciences Meeting, New Orleans, LA., Feb 21-26, 2016
- Joyce, T.M., Y.-O. Kwon, and H. Seo: Gulf Stream path influences on wintertime synoptic storm track and Greenland blocking. 2016 Ocean Sciences Meeting, New Orleans, LA., Feb 21-26, 2016
- Camacho, A., Y.-O. Kwon, and H. Seo: North Atlantic Oscillation, Jet and Blocking in CESM1 Large Ensemble Simulations, SPARC Workshop on Atmospheric Blocking, Reading, U.K., Apr 6-8, 2016.
- Kwon, Y.-O., H. Seo, C. Ummenhofer, and T.M. Joyce: North Atlantic Blocking Variability and Role of the Atlantic Multidecadal Oscillation, SPARC Workshop on Atmospheric Blocking, Reading, U.K., Apr 6-8, 2016.
- Kwon, Y.-O., G. Gastineau, and C.F. Frankignoul: Impact of the climate change signal on the relationship between AMOC and AMV. Workshop on Connecting Paleo and Modern Oceanographic Data to Understand AMOC over Decades to Centuries, Boulder, CO. May 23-25, 2016.
- Kwon, Y.-O., H. Seo, C. Ummenhofer, and T.M. Joyce: North Atlantic Blocking Variability and Role of the Atlantic Multidecadal Oscillation, AMS 20th Conference on Air-Sea Interaction, Madison, WI, Aug.15-19, 2016.
- Seo, H., Y.-O. Kwon, and T. M. Joyce: Nonlinear North Atlantic atmospheric response to meridional shift of the Gulf Stream path. AMS 20th Conference on Air-Sea Interaction, Madison, WI, Aug.15-19, 2016.
- Booth, J.F., Y.-O. Kwon, S. Ko, J. Small, and R. Msadek: Spatial Patterns and Intensity of the Winter Surface Storm Tracks in the CMIP5 Models. AMS 20th Conference on Air-Sea Interaction, Madison, WI, Aug.15-19, 2016.
- Kwon, Y.-O., B. Taguchi, C. Frankignoul, and A. Revelard: Low-frequency Variability of Kuroshio and Oyashio Extensions and Associated Ocean-Atmosphere Coupling. CLIVAR Open Science Conference, Qingdao, China, Oct. 19-23, 2016.
- Booth, J.F., Y.-O. Kwon, S. Ko, J. Small, and R. Msadek: Extratropical Frontal- and Meso-scale Air-Sea Interaction: Spatial Patterns and Intensity of the Winter Surface Storm Tracks in the CMIP5 Models. CLIVAR Open Science Conference, Qingdao, China, Oct. 19-23, 2016.
- Seo, H., Y.-O. Kwon, T. M. Joyce, and C. C. Ummenhofer: Extratropical Frontal- and Meso-scale Air-Sea Interaction: Predominant nonlinear atmospheric response to meridional shift of the Gulf Stream path. CLIVAR Open Science Conference, Qingdao, China, Oct. 19-23, 2016.
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