

Bor-Ting Jong

Associate Research Scholar

Atmospheric and Oceanic Sciences, Princeton University
Geophysical Fluid Dynamics Laboratory, NOAA
E-mail: bor-ting.jong@noaa.gov & bor-ting.jong@princeton.edu

RESEARCH INTERESTS

- Regional hydroclimate extremes, including drought and extreme precipitation events
- Predictability, prediction, and projection of regional hydroclimate variability and extremes, from subseasonal-to-multidecadal and longer time scales

EDUCATION

Columbia University, New York, NY

Ph.D. in Earth and Environmental Sciences, 2014 – 2019

National Taiwan University, Taipei, Taiwan

M.S. in Atmospheric Sciences, 2011 – 2013

National Taiwan University, Taipei, Taiwan

B.S. in Atmospheric Sciences (Highest honor), 2007 – 2011

RESEARCH EXPERIENCES

Associate Research Scholar, 09/2023 – present

Atmospheric and Oceanic Sciences Program, Princeton University &
NOAA Geophysical Fluid Dynamics Laboratory, Princeton, NJ
Team: Seasonal-to-Decadal Variability and Predictability Division

Postdoctoral Research Associate, 2021 – 2023

Atmospheric and Oceanic Sciences Program, Princeton University &
NOAA Geophysical Fluid Dynamics Laboratory, Princeton, NJ
Team: Seasonal-to-Decadal Variability and Predictability Division

National Research Council (NRC) Postdoctoral Research Associate, 2019 – 2021

NOAA Physical Sciences Laboratory, Boulder, CO
Teams: Attribution and Predictability Assessments & Atmosphere-Ocean Processes

Graduate Research Fellow, 2014 – 2019

Lamont-Doherty Earth Observatory, Palisades, NY
Division: Ocean and Climate Physics

Research Assistant, 2013 – 2014

Research Center of Environmental Changes, Academia Sinica, Taipei, Taiwan
Climate System Research Laboratory (Director: Dr. Chia Chou)
Research: Modulation of Tropical Precipitation by Shallow and Deep Convective Processes

PUBLICATIONS

- Jong, B.-T.**, H. Murakami, T. L. Delworth, and W. F. Cooke (2024): Contributions of Tropical Cyclones and Atmospheric Rivers to Extreme Precipitation Trends over the Northeast US. *Earth's Future*, **12**, e2023EF004370. doi: 10.1029/2023EF004370
- Xiao, H.-M., H.-H. Hsu, T.-H. Lee, **B.-T. Jong**, J.-Y. Yu, Y.-C. Liang, and M.-H. Lo (2024): The remote response in the Northern Pacific during winter to deforestation in the Maritime Continent. *JGR-Atmospheres*, **129**, e2023JD040372. doi: 10.1029/2023JD040372
- Jong, B.-T.**, T. L. Delworth, W. F. Cooke, K.-C. Tseng, and H. Murakami (2023): Increases in extreme precipitation over the Northeast United States using high-resolution climate model simulations. *npj Clim. Atmos. Sci.*, **6**, 18. doi: 10.1038/s41612-023-00347-w
- Jong, B.-T.**, M. Newman, and A. Hoell (2022): Subseasonal meteorological drought development over the central United States during spring. *J. Clim.*, **35**, 2525-2547. doi: 10.1175/JCLI-D-21-0435.1
- Jong, B.-T.**, M. Ting, and R. Seager (2021): Assessing ENSO summer teleconnections, impacts, and predictability in North America. *J. Clim.*, **34**, 3629-3643. doi: 10.1175/JCLI-D-20-0761.1
- Jong, B.-T.**, M. Ting, R. Seager, and W. B. Anderson (2020): ENSO teleconnections and impacts on US summertime temperature during multi-year La Niña life-cycle. *J. Clim.*, **33**, 6009-6024. doi: 10.1175/JCLI-D-19-0701.1
- Jong, B.-T.**, M. Ting, R. Seager, N. Henderson, and D.-E. Lee (2018): Role of equatorial Pacific SST forecast error in the late winter California precipitation forecast for the 2015/16 El Niño. *J. Clim.*, **31**, 839-852. doi: 10.1175/JCLI-D-17-0145.1
- Jong, B.-T.**, M. Ting and R. Seager (2016): El Niño's impact on California precipitation: seasonality, regionality, and El Niño intensity. *Environ. Res. Lett.*, **11**, doi:10.1088/1748-9326/11/5/054021.

Other publications:

Seager R., M. Ting, **B.-T. Jong**, M. Hoerling, S. Schubert, H. Wang, B. Lyon, A. Kumar (2015): What can drought-stricken California expect from the El Niño winter forecast? NOAA Drought Task Force, available: <https://www.drought.gov/documents/what-can-drought-stricken-california-expect-el-nino-winter-forecast>

HONORS & AWARDS

Selected to participate in the “Early- and Mid-Career Researchers Symposium” organized by the World Climate Research Programme (WCRP), 2023

AGU 2021 Editor’s Citation for Excellence in Refereeing, 2022

National Research Council (NRC) Research Associateship, 2019 – 2021

Taiwan Ministry of Education Fellowship, 2015 – 2017

Dean’s Fellowship, Graduate Schools of Arts and Science, Columbia University, 2014 – 2015

Dean’s Award in the College of Science for Excellence in Master Thesis, NTU, 2013

Member of The Phi Tau Phi Scholastic Honor Society, 2011

Dean’s Award in the College of Science, National Taiwan University, 2011

National Taiwan University Presidential Award (top 5% of class, 5 times), 2007 – 2011

SEMINAR TALKS

“Predictability and prediction of flash drought and extreme precipitation in North America”, Department of Geography, Simon Fraser University, 04/02/2024 (*invited*)

“Predictability and prediction of flash drought and extreme precipitation in North America”, Lamont-Doherty Earth Observatory Ocean & Climate Physics Division Seminar, 01/26/2024 (*invited*)

“Increases in extreme precipitation over the Northeast United States using GFDL SPEAR_HI simulations”, GFDL Lunchtime Seminar, 10/18/2023

“Increases in extreme precipitation over the Northeast United States using high-resolution climate model simulations”, Max Planck Institute for Meteorology Seminar, 07/26/2023

“Predictability and prediction of flash drought and extreme precipitation in North America”, National Centre for Atmospheric Science (NCAS) @ University of Reading Seminar, 07/10/2023

“Subseasonal meteorological drought development over the central United States during spring”, Research Center of Environmental Changes, Academia Sinica, Taipei, 05/04/2022 (*invited*)

“Subseasonal meteorological drought development over the central United States during spring”, Princeton University AOS/GEO/HMEI Climate Seminar, 11/29/2021

“Subseasonal meteorological drought development over the central United States during spring”, NOAA Physical Sciences Laboratory Seminars, 06/22/2021

“Warm season subseasonal to interannual variability of North American hydroclimate”, Department of Atmospheric Sciences, National Taiwan University, 06/08/2021 (*invited*)

SELECTED CONFERENCE PRESENTATIONS

Jong, B.-T., T. Delworth, Z. Labe, and W. Cooke: Reversal of extreme precipitation trend over the Northeast U.S. in response to rapid reduction in greenhouse gas concentrations. (oral) 2025 American Meteorological Society Annual Meeting, New Orleans, LA, Jan. 2025 (*upcoming*)

Thirlwall, J., B.-T. Jong, and T. Delworth: Seasonal variations in extreme precipitation trends across the Northeast U.S. (oral) 2025 American Meteorological Society Annual Meeting, New Orleans, LA, Jan. 2025 (*upcoming*)

Jong, B.-T., H. Murakami, T. Delworth, and W. Cooke: TC-induced increases in extreme precipitation over the Northeast United States using 25-km GFDL SPEAR ensemble. (poster) Symposium on Hurricane Risk in a Changing Climate, Honolulu, HI, Jun. 2024

Jong, B.-T., H. Murakami, T. Delworth, and W. Cooke: TC-induced increases in extreme rainfall over the Northeast United States. (oral) 2024 European Geosciences Union General Assembly, Vienna, Austria, Apr. 2024

Jong, B.-T., H. Murakami, T. Delworth, and W. Cooke: Increases in extreme precipitation over the Northeast US in 25-km GFDL SPEAR. (oral) US CLIVAR Workshop – Confronting Earth System Model Trends with Observations: The Good, the Bad, and the Ugly, Boulder, CO, Mar. 2024

Jong, B.-T., H. Murakami, T. Delworth, and W. Cooke: Contributions to changes in extreme precipitation over the Northeast US in 25-km GFDL SPEAR. (oral) 2024 American Meteorological Society Annual Meeting, Baltimore, MD, Jan. 2024

Jong, B.-T., T. Delworth, and H. Murakami: Increases in extreme precipitation over the Northeast United States using high-resolution climate model simulations. (poster) 2023 WCRP Open Science Conference, Kigali, Rwanda, Oct. 2023

- Fry, G.** and B.-T. Jong: Large-scale dynamics associated with extreme precipitation in the Northeast United States (poster) 2022 American Geophysical Union Fall Meeting, Chicago, IL, Dec. 2022
- Jong, B.-T.** and T. Delworth: Increasing occurrence of extreme precipitation over the Northeast United States: Using an ensemble of high-resolution climate model simulations (oral) 2022 US Climate Modeling Summit Workshop, College Park, MD, Aug. 2022
- Jong, B.-T.** and T. Delworth: Using an ensemble of high-resolution climate model simulations to detect, attribute, and project changes in extreme rainfall over the Northeast U.S. (oral) 2022 European Geosciences Union General Assembly, Vienna, Austria, May 2022
- Jong, B.-T., **M. Newman**, A. Hoell: Rapid meteorological drought development over the central United States during spring. (oral) 2022 American Meteorological Society Annual Meeting, Jan. 2022
- Jong, B.-T.**, M. Newman, A. Hoell: The role of stationary Rossby waves in springtime hydroclimate over the central United States. (poster) 2020 American Geophysical Union Fall Meeting, Dec. 2020
- Jong, B.-T.**, M. Ting, R. Seager: Assessing ENSO summer teleconnections and impacts on North America in GCMs. (oral) 2020 CESM Climate Variability & Change Working Group Meeting, Boulder, CO, Mar. 2020
- Jong, B.-T.**, M. Ting, R. Seager: Assessing ENSO summer teleconnections and impacts on North America in GCMs. (oral) 2019 American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 2019
- Jong, B.-T.**, M. Ting, R. Seager: Seasonal evolutions of ENSO teleconnections and impacts on North America. (oral) 2019 American Meteorological Society Annual Meeting, Phoenix, AZ, Jan. 2019
- Jong, B.-T.**, M. Ting, R. Seager: ENSO teleconnections and impacts on North America during boreal summer. (oral) 2018 Graduate Climate Conference, Seattle, WA, Nov. 2018
- Jong, B.-T.**, M. Ting, R. Seager: ENSO teleconnections and impacts on North America during La Niña summers. (*keynote*) IV International Conference on El Niño-Southern Oscillation, Guayaquil, Ecuador, Oct. 2018
- Jong, B.-T.**, M. Ting, R. Seager and D.-E. Lee: Why did the 2015/16 El Niño fail to bring excessive precipitation to California? (oral) 2016 American Geophysical Union Fall Meeting, San Francisco, CA, Dec. 2016
- Jong, B.-T.**, M. Ting, R. Seager and D.-E. Lee: Why did the 2015/16 El Niño fail to bring excessive precipitation to California? (oral) NOAA's 41st Climate Diagnostics and Prediction Workshop, Orono, ME, Oct. 2016

SERVICE

Associate editor, Journal of Climate, 07/2023 –

Reviewer, 2017 – present

Peer-reviewed journals:

Journal of Climate, Journal of Hydrometeorology, Journal of the Atmospheric Sciences, Journal of Applied Meteorology and Climatology, Geophysical Research Letters, Journal of Geophysical Research – Atmosphere, Climate Dynamics, International Journal of Climatology, Earth System Dynamics, Dynamics of Atmospheres and Oceans, Environmental Monitoring and Assessment, Weather and Climate Dynamics, Nature Communications, Scientific Reports, Communications Earth & Environment, Environmental Research: Climate

Other: National Science Foundation proposal, NOAA proposal, NOAA GFDL internal review, National Climate Assessment (NCA5) Second Order Draft

Steering Committee, 2022 – present

- Young Earth System Scientists (YESS) Community, Online Events Working Group, 2024/01 – present
- Asian Americans and Pacific Islanders in Geosciences, 2022-2023

Mentor, 2021 – present

- Princeton Women in Geosciences (PWIGs) Mentoring Program
- Asian Americans and Pacific Islanders in Geosciences (AAPIIG) Mentoring Pods Program

Reviewer, 2020

International Panel on Climate Change (IPCC) – *Sixth Assessment Report (AR6) Climate Change 2021: The Physical Science Basis* (Working Group I, Second Order Draft)

Graduate Student Committee – Alumni and Careers Chair, 2018 – 2019

Dept. of Earth and Environmental Sciences, Columbia University

Student Committee – General Affairs Chair, 2009 – 2010

Dept. of Atmospheric Sciences, National Taiwan University

STUDENTS ADVISED

Cooperative Institute for Modeling the Earth System (CIMES) Summer Research Internships, Princeton University, Summer 2024

Mentee: Jordan Thirlwall (SUNY Oswego)

Topic: Changes in extreme rainfall across North America: past, present, and future

Cooperative Institute for Modeling the Earth System (CIMES) Summer Research Internships, Princeton University, Summer 2022

Mentee: Gavin Fry (Dartmouth College)

Topic: Increase in the US Northeast extreme precipitation: past, present, and future

TEACHING

Teaching Assistant, Dept. of Earth and Environmental Sciences, Columbia University

Earth's Environmental System – Climate System (undergraduate level), Fall 2017

Quantitative Models of Climate – Sensitive Natural and Human Systems (Climate and Society Master program), Fall 2016

Introduction to Atmospheric Science (graduate level), Fall 2015

Teaching Assistant, Dept. of Atmospheric Sciences, National Taiwan University

Atmospheric Radiation (undergraduate level), 2011 – 2012

Exploring Taiwan – Geographical Environmental and Resources, Spring 2012

OUTREACH

Exhibitor (represented the Princeton University AOS program, presenting simple hands-on experiments), NJ Ocean Fun Days, Island Beach State Park, NJ, 05/18/2024

Volunteer (serving as a visiting team member and engaging with students through discussion about their scientific projects), 17th Annual Monmouth Junction Elementary School Science Fair: Meet a scientist event, Dayton, NJ, 02/03/2024

- Volunteer (for the Princeton University AOS program, presented simple hands-on experiments), 2023 Teen STEM Conference, Boys & Girls Clubs of Mercer County, Lawrenceville, NJ, 11/09/2023
- Exhibitor (represented the Princeton University AOS program, presenting simple hands-on experiments), NJ Ocean Fun Days, NJ Sea Grant Consortium, Sandy Hook, NJ, 05/21/2023
- Presentation on extreme events in changing climate and career paths, Mercer County Community College, West Windsor, NJ, 04/20/2023
- Exhibitor (represented the Princeton University AOS program, presenting simple hands-on experiments to middle/high school girls), PPPL Young Women's Conference in STEM, Princeton, NJ, 03/16/2023
- Presentation on extreme events in changing climate and career paths, AGILE (AAPI in Geoscience: Inclusivity, Leadership, and Experience) Researcher Visit program, Hunter College, New York, NY, 11/17/2022
- Presentation on extreme events in changing climate at a talk series - "BCC Meets Climate Scientists", Bronx Community College, New York, NY, 10/28/2022
- Volunteer, Lamont-Doherty Earth Observatory Open House, Lamont-Doherty Earth Observatory, Columbia University, Palisades, NY, Oct. 2014
- Volunteer, "Aiming High for A Low-Carbon Taiwan Exhibition", Ministry of Science and Technology, Taipei, Taiwan, 2011
- Vice-director, Atmospheric Science Summer Camp for senior high students, National Taiwan University, Taipei, Taiwan, 2009

SKILLS & TRAINING

Programming Python, MATLAB, Fortran, NCL, Shell script

Modeling GFDL Spectral Atmospheric Dynamical Core, stationary wave model

Training Community Earth System Model (CESM) Tutorial (2015), NCAR Mesa Lab, Boulder, CO

Language Traditional Chinese (native), English (fluent)