Eunkyoung (Kyoung) Choi

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PERSONAL PROFILE

Highly motivated agricultural-climate risk scientist who helps the interface of physical and social sciences by understanding both fields. Particularly interested in helping vulnerable communities around the world by improving the understanding on the impact of climate change on agricultural production from both scientific and economic perspectives. Excellent capacity to understand new concepts, quickly acclimate to different situations, and substantively contribute to various fields of earth science, green growth policy research and environmental consulting over the past 4 years.

RESEARCH INTERESTS: climate risk, agricultural production, statistical models, machine learning

EDUCATION

In progress: PhD in Ecosystem Sustainability

Colorado State University, Fort Collins, CO, U.S.A | Expected Graduation: 2025

- Dissertation Topic: Climate Risk Assessment for US Agricultural Production
- Advisor: Dr. Nathan Mueller
- Committee: Danica Lombardozzi, Richard Conant, Frances Davenport, James Hurrell

MS in Atmospheric Sciences

University of Illinois at Urbana-Champaign, IL, U.S.A | Graduated in 2020

- Thesis Title: Modeling the Combined Environmental Effects on Net Land Carbon Flux in the Present and Future Scenarios
- Advisor: Dr. Atul Jain

BE in Ecological Engineering (Double Major: International Business Administration)

Pukyong National University, Busan, Korea | Graduated in 2014

- Bachelor's Thesis Title: Emergy Accounting for Korea in 2011

PROFESSIONAL EXPERIENCE

Environmental Consultant March 2014–March 2017

Environmental Resources Management, Seoul, Korea

- Major foci: Chemical registration and risk assessment, task force/consortium support and management, sustainability strategy advisory and management development
- Received a Global Recognition Award from ERM Headquarters

Research Intern July 2013–August 2013

India Team, Global Green Growth Institute, Seoul, Korea

- Major focus: Analyses of India's economic, industrial, and governance landscape to inform the development of green growth policies

Research Intern February 2013-May 2013

U.S.-Korea Institute, Johns Hopkins School of Advanced International Studies, Washington D.C., U.S.A

- Major focus: Analyses of the South Korean low carbon green growth policies and greenhouse gas mitigation, reduction, and verification systems

Research Intern May 2012-January 2013

Earth Sciences Division, NASA Goddard Space Flight Center, Greenbelt MD, U.S.A

- Major focus: Analysis of spatio-temporal distribution of historical vegetation productivity and land use land cover changes in South Korea by using Normalized Difference Vegetation Index and MODIS

PUBLICATIONS

- **Choi, E.**, De Souza, V. C., Dillon, J. A., Kebreab, E., & Mueller, N. D. (2024). Comparative analysis of thermal indices for modeling cold and heat stress in US dairy systems. Journal of Dairy Science. https://doi.org/10.3168/jds.2023-24412
- Driscoll, A.W., Conant, R.T., Marston, L.T., **Choi, E.**, & Mueller, N. (2024) Greenhouse gas emissions from

US irrigation pumping and implications for climate-smart irrigation policy. Nat Commun 15, 675. https://doi.org/10.1038/s41467-024-44920-0

- **Choi, E.**, Rigden, A. J., Tangdamrongsub, N., Jasinski, M. F., & Mueller, N. (2023). US crop yield losses from hydroclimatic hazards. Environmental Research Letters, 19(1), 014005. https://doi.org/10.1088/1748-9326/ad0c87
- Driscoll, A. W., Leuthold, S. J., **Choi, E.**, Clark, S. M., Cleveland, D. M., Dixon, M., Hsieh, M., Sitterson, J., & Mueller, N. (2022). Divergent impacts of crop diversity on caloric and economic yield stability. Environmental Research Letters, 17(12), 124015. https://doi.org/10.1088/1748-9326/aca2be

ORAL AND POSTER PRESENTATIONS

- Choi E., & Mueller, N. D., Impacts of geographical shifts in cropland on hydroclimatic hazard exposure, Abstract, American Geophysical Union Fall Meeting, 11-15 December 2023.
- Choi, E., Davenport, F., Dillon, J., & Mueller, N. D., Using explainable machine learning to develop a weather stress index for dairy systems, American Geophysical Union Fall Meeting, 11-15 December 2023.
- Choi, E., Machine learning in climate-agricultural risks and adaptations, Colorado Seed Growers Association and Colorado Seed Industry Association Annual Meeting, 7th December 2023.
- Choi, E., & Mueller, N. D., Inconsistencies in using Existing Thermal Indices for US Milk Yield Sensitivities, American Dairy Science Association Annual Meeting, 24 June 2023.
- Choi, E., & Mueller, N. D., Evaluating Indices for Extreme Weather Stress on US Milk Yields, American Geophysical Union Fall Meeting, 12-16 December 2022.
- Choi, E., Sloat, L., & Mueller, N. D., Sensitivity and Exposure to Hydrologic Hazards for Major US Crops 1981-2016, American Geophysical Union Fall Meeting, 13-17 December 2021.

EXTRACURRICULAR ACTIVITIES

- Elected President, Department of Atmospheric Sciences Student Organization at UIUC, U.S.A 2019
- Elected Vice President, Department of Ecological Engineering Student Council at PNU, Korea 2016

AWARDS

- The Convergence Research (CORE) Fellows, The CORE Institute by NSF, U.S.A 2024
- Best Scientific Poster, Environmental Research Virtual Poster Competition, Institute of Physics Publishing, U.K. 2023
- Follet Memorial Travel Award, The Department of Soil and Crop Sciences, CSU, U.S.A 2023
- Top 10 Presenters of 3 Minutes Thesis Contest, American Dairy Science Association, U.S.A 2023
- ERM Global Recognition Award, Environmental Resources Management, Korea 2016
- WEST Program Recipient, Korea-US Joint Government Scholarship, Korea 2012-2013
- CBA International Business by Pukyung National University, Korea 2011
- Idea Contest for Low Carbon Green Growth, Pukyung National University, Korea 2010
- Korean Government University Award, The Korean government, Korea 2008-2011

CERTIFICATES

- Graduate Certificate in Data Analysis, the Department of Statistics, CSU, U.S.A 2021
- Korean National Off-Site Consequence Analysis Consultant, Korea 2015
- Korean National Technical Qualification for Air Pollution, Korea 2011

SKILLS

- Computer: Python, Fortran, Linux
- Language: Korean (native speaker), English (fluent speaker)