YIXIN GUO

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Room 504C, Department of Atmospheric and Oceanic Sciences

EDUCATION

Postdoctoral Researcher jointed between Peking University and International Institute for Applied Systems Analysis *Oct. 2020 - Sep. 2022*
Advisors: *Lin Zhang, Wilfried Winiwarter and Petr Havlik*
Postgraduate Research Associate at Princeton School of International and Public Affairs, Princeton University *Dec. 2019 - Aug. 2020*
M.A. and Ph.D. in Public Affairs and Environmental Studies at Princeton School of International and Public Affairs, Princeton University *2014 - 2019*
Advisor: *Denise L. Mauzerall*
Dissertation: *Mitigating Environmental and Health Damages: Opportunities From Changes in Agricultural Production and Food Consumption Practices in China*
B.S. in Atmospheric and Oceanic Sciences at School of Physics, Peking University *2010 - 2014*

RESEARCH INTEREST

Agricultural N cycle and air quality and climate impacts
Science, technology and policy of mitigation

PUBLICATIONS

1. **Guo Y**, He P, Springmann M, *et al.* Food Consumption Strategies for Addressing Air Pollution, Climate Change, Water Use, and Public Health in China, (2021), (under review at ***One Earth***)
2. **Guo Y**, Chen, Y., Searchinger, T.D. *et al.* Air quality, nitrogen use efficiency and food security in China are improved by cost-effective agricultural nitrogen management. ***Nature Food*** 1, 648–658 (2020). https://doi.org/10.1038/s43016-020-00162-z
3. **Guo Y**, Liu J, Mauzerall D L, *et al.* Long-lived Species Enhance Summertime Attribution of North America Ozone to Upwind Sources, ***Environmental Science and Technology***, (2017) 51 (9), 5017-5025 DOI: 10.1021/acs.est.6b05664

4. Liu Z, Ying H, Chen M, Bai J, Xue Y, Yin Y, Batchelor W, Du M, **Guo Y**, Qingsong Zhang, Zhenling Cui, Fusuo Zhang, Zhengxia Dou. Optimization of China' s maize and soy production can ensure feed sufficiency at lower nitrogen and carbon footprints, ***Nature Food*** 2, 426–433 (2021). https://doi.org/10.1038/s43016-021-00300-1
5. Ma R, Zhang B, **Guo Y**, Ke Li, Xueli Zhao, Soeren Linder, ChengHe Guan, Guoqian Chen, Yujie Gan and Jing Meng. Mitigation potential of global ammonia emissions and related health impacts in the trade network, (2021), under review at ***Nature Communications***
6. Wen Xu, Yuanhong Zhao, Zhang Wen, Yunhua Chang, Yuepeng Pan, Yele Sun, Xin Ma, Zhipeng Sha, Ziyue Li, Jiahui Kang, Lei Liu, Aohan Tang, Kai Wang, Ying Zhang, **Yixin Guo**, Lin Zhang, Lifang Sheng, Xiuming Zhang, Baojing Gu, Yu Song, Martin Van Damme, Lieven Clarisse, Pierre-François Coheur, Jeffrey L. Collett Jr, Keith Goulding, Fusuo Zhang, Xuejun Liu. Is it necessary to control ammonia in China? Evidence from air quality impacts of the COVID-19 lockdown, (2021), under review at ***Science Bulletin***

ORAL PRESENTATIONS

Mitigating Reactive Nitrogen Losses and Associated Environmental Damages in China at the 8th Global Nitrogen Conference (online) *May 2021*

(Invited) *Implications of improving food production and consumption for ammonia emissions and air pollution* at the Center for Agricultural Resources Research in the Chinese Academy of Sciences, Shijiazhuang, China *2021*

(Invited) *Ammonia Emissions and Air Quality Under Various Chinese Diets* at the 25th Annual Meeting For Atmospheric Pollution Management and Controls at Xi'an, China *2021*

(Invited) *Effects of cost-effective agricultural nitrogen management on air quality and food security* at the College of Resources and Environmental Sciences of China Agriculture University (online) *2021*

(Invited) *Ammonia Emission Mitigation Strategies and Consequent Environmental Effects in China* at the 2nd Sino-Korean Air Quality Forum (online) *2020*

(Invited) *Air Quality, Nitrogen Use Efficiency And Food Security in China Are Improved by Cost-effective Agricultural Nitrogen Management* at China Agriculture University (online) *2020*

(Invited) *Agricultural Production and Consumption Strategies in China: Benefits for Air Quality, Nitrogen Use Efficiency, Climate and Dietary Health* at Atmospheric and Oceanic Science Seminar series at Peking University, Beijing, China *2019*

Mitigating Reactive Nitrogen Loss and Associated Environmental Damages: Opportunities from Changes in Production and Consumption in China at American Geophysical Union Annual Meeting, San Francisco, CA *2019*

Effectiveness of Agricultural Ammonia Control Strategies for Mitigating PM2.5 Pollution in China at Ammonia Workshop hosted by the Environment and Climate Change Agency of the Canadian government, Ottawa, Canada *2018*

(Invited)*Reducing Nitrogen Pollution from Crop Fertilizer Use and Manure Management* at Atmospheric Science Seminar of Cornell University, Ithaca, NY *2017*

Long-lived Species Enhance Summertime Attribution of North America Ozone to Upwind Sources at American Geophysical Union Annual Meeting, San Francisco, CA *2016*

POSTER PRESENTATIONS

Poster at Princeton E-ffiliates Partnership second annual Retreat, Princeton, NJ *2015*

Poster at American Geophysical Union Annual Meeting, San Francisco, CA *2014*

CONFERENCES ATTENDED

American Geophysical Union Annual Meeting, San Francisco, CA *2019*

Ammonia Workshop hosted by the Environment and Climate Change Agency of the Canadian government, Ottawa, Canada *2018*

Third Plenary Meeting of International Nitrogen Management System, Edinburgh, Scotland *2018*

High-yield High-efficiency Agriculture Conference, Kunming, China *2017*

American Geophysical Union Annual Meeting, San Francisco, CA *2016*

Chinese Environmental Scholars Forum, Princeton, NJ *2016*

Community Earth System Model Annual workshop, Breckenridge, CO *2016*

PROFESSIONAL EXPERIENCE

Visiting student at Prof. Lin Zhang's group at Peking University, Beijing, China *summer 2018 and winter 2019*

Visiting student at Prof. Peter Hess's group at Cornell University, Ithaca NY *Nov 2017*

Short-term consultant for the World Bank on the project of investigating technological and policy solutions to China's low agricultural nitrogen use efficiency, Beijing, China *summer 2017*

Visiting student at Prof. Fusuo Zhang's group at China Agricultural University, Beijing, China *summer 2017*

Volunteer for The Nature Conservancy Beijing office in support of the climate change mitigation and agriculture pollution management projects, Beijing, China *2013-2014*

TEACHING

Assistant instructor for *The Environment: Science and Policy (WWS/ENV350)* *Spring 2017 and Spring 2018*

SKILLS

Atmospheric Chemistry Transport Model: *WRF-Chem*, *GEOS-Chem* and *MOZART-4*
Earth System Model: *NCAR CESM (Community Earth System Model)*
Scenario and Policy Analysis, Qualitative Research Methods
Skilled at Linux, Fortran, NCL, Office, Python, C++, *Algorithms and Data Structure*), MATLAB, Gnuplot

HONORS AND AWARDS

PKU (Peking University)- IIASA (International Institute for Applied Systems Analysis) postdoctoral fellowship *2020-2022*
Princeton University Graduate School Dean's Completion Fellowship *2019-2020*
Princeton Institute for International and Regional Studies Graduate Funding (winter recess cycle) *2018*
Princeton University Princeton School Graduate Fellowship *2014-2019*
Award for excellent undergraduate research by Bases for Cultivation of Talents of Geophysical Sciences, Peking University *2013*
Samsung Scholarship, for top 3% physics-major students, Peking University *2012-2013*
Merit Student, Peking University *2012-2013*
Meritorious winner for Mathematical Contest in Modeling (MCM) *2013*
1st Prize of National Olympiad in Chemistry in Provinces, China Chemistry Federation *2009*

REFERENCES

Lin Zhang (zhanglg@pku.edu.cn) (PhD co-advisor and postdoc advisor)
Department of Atmospheric and Oceanic Sciences at School of Physics, Peking University
Wilfried Winiwarter (winiwart@iiasa.ac.at) (postdoc advisor)
Air Quality and Greenhouse Gases Program, International Institute for Applied Systems Analysis
Denise L. Mauzerall (mauzeral@princeton.edu) (primary PhD advisor)
Princeton School of Public and International Affairs and Department of Civil and Environmental Engineering, Princeton University
Timothy D. Searchinger (tsearchi@princeton.edu) (PhD co-advisor)
Princeton School of Public and International Affairs, Princeton University
Junfeng Liu (jfliu@pku.edu.cn) (undergraduate advisor)
College of Urban and Environmental Sciences, Peking University