

Xiaoyuan (Charles) Li, Ph.D.

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ENERGY AND ENVIRONMENTAL ECONOMICS, INC. *Consultant II*

San Francisco, CA

Dr. Li recently joined E3 after completing his doctoral degree in Environmental Engineering from Princeton University. He has extensive research experience in the nexus of renewable energy, air pollution, and climate change. Dr. Li's Ph.D. dissertation focused on the impact of air pollution on solar photovoltaics (PV) electricity generation efficiencies and PV integration into electricity grid systems. He co-developed an integrated energy system model that uses satellite data to simulate renewable energy performance, optimizes electricity dispatch, and minimizes costs of electricity systems. Dr. Li is committed to the mission of sustainable development. He is passionate about facilitating clean energy development and creating low-carbon solutions for stakeholders.

PRINCETON UNIVERSITY

Assistant Instructor

Princeton, NJ

September 2014 – May 2017

- Taught six semesters of undergraduate-level courses including *Innovation in Engineering Practice and Global Environmental Policy*
- *Introduction to Environmental Engineering, and Environmental Nexus: Science, Ethics and Literature*
- Supervised over 40 student projects on environmental engineering and innovation in practice

PRINCETON UNIVERSITY

Assistant Researcher

Princeton, NJ

September 2012 - March 2018

- Discovered more than 30% reduction of solar PV resources due to air pollution in Eastern China by applying a PV performance model (PVLIB-Python)
- Revealed more than 50% loss in solar PV electricity generation efficiencies due to the combined effect of air pollution and panel soiling in Eastern China, Northern India, and the Middle East
- Developed an integrated energy system modeling framework that uses satellite data to simulate renewable energy performance and cost-minimizing optimal electricity system dispatch, and evaluate reliability of electricity systems

PRINCETON UNIVERSITY CHINA ENERGY GROUP

President

Princeton, NJ

2015 – 2016

- Led the 2016 US-China Environmental Scholars Forum featuring 150 on-site attendees and 200 followers through webcast, more than double the impact of the same events in 2014 and 2015
- Fundraised over \$8,000 to initiate 10 on-campus events that stimulate discussions of cutting-edge energy & environmental issues

ASSOCIATION OF CHINESE STUDENTS & SCHOLARS AT PRINCETON UNIVERSITY Princeton, NJ
Cultural Chair 2013 – 2014

- Stage-managed two on-campus performances featuring 50 performers and 20 stage staff
- Fundraised over \$3,000 for cultural programs, increasing the association's financial capacity by over 30%

Education

Princeton University Princeton, NJ
Ph.D., Environmental Engineering and Water Resources 2018
Dept. of Civil and Environmental Engineering

Peking University Beijing, China
B.S., Atmospheric and Oceanic Sciences, College of Physics 2012

Citizenship

China

Selected Publications

1. **Li Xiaoyuan**, Liu Junfeng, Mauzerall Denise L, Emmons Louisa K, Walters Stacy, Horowitz Larry W, Tao Shu (2014) Effects of trans-Eurasian transport of air pollutants on surface ozone concentrations over Western China. *J Geophys Res Atmos* 119(21):12,338-12,354.
2. **Li Xiaoyuan**, Wagner Fabian, Peng Wei, Yang Junnan, Mauzerall Denise L (2017) Reduction of solar photovoltaic resources due to air pollution in China. *Proc Natl Acad Sci* 114(45):11867–11872.
3. Guo Yixin, Liu Junfeng, Mauzerall Denise L, **Li Xiaoyuan**, Horowitz Larry W, Tao Wei, Tao Shu (2017) Long-Lived Species Enhance Summertime Attribution of North American Ozone to Upwind Sources. *Environ Sci Technol* 51(9):5017–5025.
4. Li Zhongshu, Liu Junfeng, Mauzerall Denise L, **Li Xiaoyuan**, Fan Songmiao, Horowitz Larry W, He Cenlin, Yi Kan, Tao Shu (2017) A potential large and persistent black carbon forcing over Northern Pacific inferred from satellite observations. *Sci Rep* 7:43429.
5. Yang Junnan, **Li Xiaoyuan**, Peng Wei, Wagner Fabian, Mauzerall Denise L (2018) Climate, air quality and human health benefits of various solar photovoltaic deployment scenarios in China in 2030. *Environ Res Lett*. doi:10.1088/1748-9326/aabe99.