

Xiaoyuan (Charles) Li, Ph.D.

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ENERGY AND ENVIRONMENTAL ECONOMICS, INC.

San Francisco, CA

Senior Associate

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 a mission for sustainable development. He is passionate about facilitating clean energy development and creating low-carbon solutions for various stakeholders.

PRINCETON UNIVERSITY

Princeton, NJ

Assistant Instructor

September 2014 – May 2017

- Taught 6 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

Princeton, NJ

Assistant Researcher

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

Princeton, NJ

President

2015 – 2016

- Led the US-China Environmental Scholars Forum 2016 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 2 on-campus performance shows, each featuring around 200 audiences, 50 performers and 20 stage staff.
- Fundraised over \$3,000 for cultural programs and increased financial capability of the association by over 30%.

Education

Princeton University

Princeton, NJ

*PhD, Environmental Engineering and Water Resource,
Department of Civil and Environmental Engineering*

September 2012 - March 2018

Dissertation: "Radiative Effects of Atmospheric Aerosols and Impacts on Solar Photovoltaic Electricity Generation"

Peking University

Beijing, China

B.S. Atmospheric and Oceanic Sciences, College of Physics

September 2008 - July 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.