John J. Perona, PhD, JD

Accomplished author, analyst and public speaker on climate change and renewable energy science and policy. Thorough knowledge of US legal system with specialization in environmental law. Experienced in government communications as a citizen advocate and lobbyist for a healthy climate. Scientific research leader with exhaustive record of extramural funding and publications. Exceptional ability to synthesize and explain technical material to layperson audiences in written and oral forms.

EDUCATION

2016	*LL.M.* Environmental and Natural Resources Law, Lewis & Clark University (*magna cum laude*)
2008	*J.D.* Santa Barbara College of Law (*with honors*).
1990	*Ph.D.* Molecular Biophysics and Biochemistry, Yale University
1986	*M.Phil.* Molecular Biophysics and Biochemistry, Yale University
1983	*B.S.* Chemical Engineering, Rutgers University (*cum laude*)

EMPLOYMENT HISTORY

2011-2024	Professor of Environmental Biochemistry and Law, Portland State University
2011-2019	Adjunct Professor of Biochemistry, Oregon Health & Science University
1994-2011	Professor of Biochemistry, University of California, Santa Barbara
1990-1994	Postdoctoral Scholar, University of California, San Francisco

PROFESSIONAL EXPERTISE

Author/speaker/advocate: climate change and renewable energy

- Author: *From Knowledge to Power: The Comprehensive Handbook for Climate Science and Advocacy* ("K2P": Ooligan Press, 320 pp, Nov 30, 2021). K2P is a thorough guide to climate science and renewable energy for laypersons. Dedicated chapters on fundamental climate science, climate change impacts, citizen advocacy, the business/politics of fossil fuels, carbon pricing, electricity grid and carbon sequestration. www.fromknowledgetopower.com. For endorsements by prominent individuals, see https://fromknowledgetopower.com/endorsements/
- Author: *Earthward*, a Substack publication covering climate science, politics, advocacy and policy/technology development for clean energy technologies (2023-2024). See https://www.fromknowledgetopower.com/earthward/ and johnperona.substack.com

- Speaker: Designed and led seminar series on climate science and renewable energy for the healthy climate advocacy community in the Portland metro area (2017-2018). Broad reachout to environmental advocacy groups and recruitment of guest speakers on the social equity dimensions of climate policy.
- Speaker: Invited public presentations for Electrify Now, MCAT/OLCV, Corbett Issues Forum, New Buildings Institute, Oregon State University, and other groups. Topics include State of the Climate 2024, geoengineering, carbon capture and storage, hydrogen and biofuels (2020-2024). See https://fromknowledgetopower.com/climate-talk/ for presentations.
- Advocate: Liaison to the office of Senator Ron Wyden on behalf of the nonprofit Citizens' Climate Lobby. Led lobbying teams advocating for an economy-wide tax on carbon with dividend return to American households. Skilled partner with individuals from across the political spectrum. Led or participated in dozens of meetings with CCL (2016-2021).
- Advocate: Promotion of healthy climate/renewable energy legislation and rulemakings in Oregon. Lobbied lawmakers, wrote letters and presented testimony with Mobilizing Climate Action Together (MCAT), a climate action team working with the Oregon League of Conservation Voters. Particular focus and expertise on Oregon's Clean Fuels Program and renewable energy development (2021-2024).

Environmental and Energy Law

- Thorough knowledge of US legal system. Relevant climate/environmental coursework in energy law, public lands law, federal and state water law, food and agriculture law, administrative law, Clean Air Act, and the science/law interface (2008, 2016).
- Volunteer internships at three nonprofit environmental law firms and clinics in Santa Barbara, California and Portland, Oregon. Expertise with legal writing on NEPA, Endangered Species Act, Natural Gas Act, FERC and EPA proceedings, offshore oil/gas operations (2006-2016).
- Author of three 20-60 page articles in peer-reviewed US law journals, covering biofuels, groundwater management and genetically engineered crops (2015-2017). Each article is a detailed synthesis of legal and scientific aspects in the particular field, including how statutory or regulatory frameworks fail to reflect the best available science, and incorporating recommendations for reform.

Scientific research

- Research director of an academic laboratory investigating fundamental problems in environmental biochemistry (1994-2022).
- Author of over 100 peer-reviewed research articles and reviews, and recipient of $12 million in extramural funding. Supervisor for 14 Ph.D. dissertations (1994-2024).

- Uncovered new pathways for sulfur assimilation by anaerobic microoorganisms, with implications for biological methane generation and global warming (funded by NASA).

- Further specialization in synthetic biology, including genetic code expansion and metabolic engineering in Bacteria and Archaea (funded by NIH and NASA).
- Extensive service on grant review panels for NIH and NASA.
- Consultant to two private biotechnology firms in California.
- Patent: *Generation of mini-circle DNA with physiological supercoiling*; PTA 05-064. US patent application number 7,622,252 B1 issued Nov 24, 2009.

SELECTED RECENT PRESENTATIONS

- *An overview of carbon capture and storage solutions*. New Buildings Institute, Portland OR, 26 July 2022.
- *A biochemist looks at climate change: science, policy, politics, and advocacy in the contemporary US*. Department of Biochemistry & Biophysics, Oregon State University, 11 May 2022.
- *Geoengineering: the big picture*. Electrify Now, 15 March 2023. Host: Brian Stewart.
- *State of the Climate, 2024*. Corbett Issues Forum, 1 February 2024.

SELECTED RECENT RESEARCH GRANTS

- National Aeronautics and Space Administration (NASA). *Biological sulfur metabolism on the ancient Earth*. Award # 80NSSC18K1058. Total award amount: $995,654. 2018-2023.
- National Aeronautics and Space Administration (NASA). *Biological sulfur metabolism on the anaerobic Earth*. Award # NNX15AP59G. Total award amount: $859,037. 2015-2018.

SELECTED COURSES TAUGHT

- *Chemistry 410/510. Science/Policy Interface: Climate Change*. Earth's energy balance, carbon cycle, energy transition roadmaps, fossil fuels, electricity grid, biofuels, carbon capture, and climate policy, law, politics & advocacy in the contemporary US.
- *Chemistry 496/596. Synthetic Biology*. Minimum gene sets for life. Genome manipulations and genetic code engineering. Applications to environmental remediation, carbon capture and agriculture.