DR. JAMES THOMPSON

Associate Professor of Environmental Science

Department of Environmental Science, Harvard University
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RESEARCH INTERESTS

Climate Change Mitigation | Renewable Energy Systems | Environmental Policy Analysis | Carbon Sequestration | Sustainable Development | Atmospheric Chemistry

EDUCATION

Ph.D. in Environmental Science
Massachusetts Institute of Technology (MIT)
2008

Dissertation: "Carbon Sequestration Potential in Temperate Forest Ecosystems: A Multi-Scale Analysis"
Advisor: Dr. Sarah Williams | GPA: 3.9/4.0

M.S. in Environmental Engineering
Stanford University
2004

Thesis: "Optimization of Solar Panel Efficiency in Variable Climate Conditions"
Advisor: Dr. Michael Chen | GPA: 3.8/4.0

B.S. in Chemistry
Harvard University
2002

Magna Cum Laude | Phi Beta Kappa | GPA: 3.7/4.0

ACADEMIC APPOINTMENTS

Associate Professor

Harvard University, Department of Environmental Science

2018 - Present

Lead research program on climate change mitigation strategies with focus on renewable energy integration and carbon sequestration technologies. Teach graduate and undergraduate courses in environmental chemistry, climate science, and sustainability policy. Supervise 8 graduate students and 3 postdoctoral researchers. Serve on university sustainability committee and climate action task force.

Assistant Professor

Yale University, School of the Environment

2012 - 2018

Established independent research program investigating atmospheric carbon dynamics and renewable energy systems. Developed new methodologies for measuring carbon sequestration in forest ecosystems. Published 28 peer-reviewed articles and secured $1.8M in research funding. Received tenure in 2017.

Postdoctoral Research Associate

MIT, Department of Earth, Atmospheric and Planetary Sciences

2008 - 2012

Conducted research on atmospheric chemistry and climate modeling under Dr. Robert Johnson. Developed novel techniques for analyzing greenhouse gas emissions from industrial sources. Co-authored 12 publications and contributed to IPCC Assessment Report.

RESEARCH FUNDING

Climate Change Mitigation through Enhanced Forest Carbon Sequestration
National Science Foundation (NSF)
$850,000 (2021-2024)
Principal Investigator

Renewable Energy Integration in Smart Grid Systems
Department of Energy (DOE)
$1,200,000 (2020-2023)

Co-Principal Investigator

Atmospheric Carbon Monitoring Network Development
Environmental Protection Agency (EPA)
$450,000 (2019-2022)
Principal Investigator

SELECTED PUBLICATIONS

Peer-Reviewed Articles (45 total, h-index: 32)

Thompson, J., Martinez, A., & Lee, K. (2023). "Enhanced carbon sequestration through optimized forest management practices." *Nature Climate Change*, 13(8), 745-752. DOI: 10.1038/s41558-023-01234-5

Chen, L., Thompson, J., & Wilson, R. (2023). "Machine learning approaches for predicting renewable energy output variability." *Energy Policy*, 178, 113-125. DOI: 10.1016/j.enpol.2023.113125

Thompson, J., et al. (2022). "Global assessment of carbon sequestration potential in temperate forests." *Science*, 378(6620), 567-571. DOI: 10.1126/science.abm1234

Rodriguez, M., Thompson, J., & Park, S. (2022). "Economic analysis of large-scale renewable energy deployment." *Environmental Research Letters*, 17(9), 094032. DOI: 10.1088/1748-9326/ac8234

Thompson, J. & Davis, P. (2021). "Atmospheric CO2 monitoring: Technological advances and policy implications." *Atmospheric Environment*, 265, 118712. DOI: 10.1016/j.atmosenv.2021.118712

PROFESSIONAL SERVICE

Editorial Boards

• Associate Editor, *Environmental Science & Technology* (2020-Present)
• Editorial Board Member, *Climate Change Research* (2019-Present)
• Guest Editor, Special Issue on "Renewable Energy and Climate", *Energy Policy* (2022)

Professional Organizations

• American Geophysical Union (AGU) - Fellow (2021)
• American Chemical Society (ACS) - Member (2002-Present)
• International Association of Environmental Scientists - Board Member (2020-2023)
• Society for Environmental Chemistry - Secretary (2018-2020)

Review Activities

Reviewer for 25+ journals including Nature, Science, PNAS, Environmental Science & Technology, and Energy Policy. NSF panel reviewer (2019, 2021, 2023). IPCC Contributing Author for Working Group III (2019-2022).

AWARDS & HONORS

- Harvard University Excellence in Teaching Award (2022)
- NSF CAREER Award (2015)
- Yale University Junior Faculty Research Award (2014)
- MIT Outstanding Thesis Award (2008)
- Phi Beta Kappa, Harvard University (2002)
- National Merit Scholar (1998)