James A. Rising

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Research Interests

Impacts of climate change: Research focuses on bringing together innovative empirical methods, machine learning, biophysical modeling, and integrated assessment.

Modeling of social-environmental systems: Research focuses on complex systems, particularly for food and fisheries and consequences for resource management.

Academic Position

2024 – Present	**University of Delaware** – Associate Professor, School of Marine Science and Policy
2021 – 2024	**University of Delaware** – Assistant Professor, School of Marine Science and Policy
2018 – 2020	**London School of Economics** – Assistant Professorial Research Fellow, Grantham Research Institute
2017	**University of Chicago** – Post-Doctoral Scholar, Economics Department
2015 – 2017	**University of California, Berkeley** – Ciriacy-Wantrup Postdoctoral Fellow, Energy & Resources Group
2003 – 2005	**Franklin W. Olin College of Engineering** – Electrical and Computer Engineering instructor

Affiliations

2025 – Present	**Foundation for Renewable Energy and Environment** – Research Fellow
2022 – Present	**Artificial Intelligence Center of Excellence, University of Delaware** – Faculty Affiliate
2021 – Present	**Grantham Research Institute** – Remote Visiting Fellow
2020 – Present	**Data Science Institute, University of Delaware** – Faculty Affiliate
2020 – Present	**Integrated Research on Disaster Risk, International Center of Excellence** – International Expert
2019	**MIT Joint Program on the Science and Policy of Global Change** – Visiting Scholar
2019 – Present	**Center for Environmental Economics and Policy** – Alumni Affiliate
2016 – Present	**Climate Impact Lab** – Faculty Affiliate
2013 – 2024	**Columbia Water Center** – Faculty Affiliate

Professional memberships

American Economic Association, American Geophysical Union, Royal Society for the Encouragement of Arts, Manufactures and Commerce

Education

2010 – 2015	**Columbia University** – Ph.D. in Sustainable Development Dissertation title: Scales for scales: An open look at the open sea
2013	**Columbia University** – M.A. and M. Phil. in Sustainable Development
1999 – 2003	**Massachusetts Institute of Technology** – Bachelor of Science in Philosophy, 2003

Peer-Reviewed Publications

Google Scholar statistics: Citations = 3,478, h-index = 23.

- Hatfield, C., Kustar, A., Reinmuth, M., Cap, C., Beshir, A., Klopp, J., Zipf, A., **Rising, J.**, Tun, T. (in press). Lessons in traffic: Nairobi's school term congestion and equity challenges. *African Transport Studies*.
- Hultgren, A., Carleton, T., Delgado, M., Gergel, D. R., Greenstone, M., Houser, T., Hsiang, S., Jina, A., Kopp, R. E., Malevich, S. B., McCusker, K. E., Mayer, T., Nath, I., **Rising, J.**, Rode, A., Yuan, J. (2025). Estimating Global Impacts to Agriculture from Climate Change Accounting for Adaptation. *Nature*.
- Moore, F. C., Drupp, M. A., **Rising, J.**, Dietz, S., Rudik, I., Wagner, G. (2024). Synthesis of evidence yields high social cost of carbon due to structural model variation and uncertainties. *PNAS*.

- **Rising, J.**, Hussain, A., Schwarzwald, K., Trisovic, A. (2024). A practical guide to climate econometrics: Navigating key decision points in weather and climate data analysis. *Journal of Open Source Education*.
- Oremus, K. L., **Rising, J.**, Ramesh, N., Ostroski, A. J. (2024). Geolocated fish spawning habitats. *Scientific Data*.
- Waidelich, P., Batibeniz, F., **Rising, J.**, Kikstra, J. S., Seneviratne, S. I. (2024). Climate damage projections beyond annual temperature. *Nature Climate Change*.
- Kotchen, M., **Rising, J.**, Wagner, G. (2023). The costs of "costless" climate mitigation. *Science* Policy Forum (cover). See also ibid. (2024). Accurately interpreting IPCC assessments—Response.
- **Rising, J.** (2023). Confounding Adaptation in Perennial Climate Damages: A Unified Statistical Approach for Brazilian Coffee. *Journal of the Association of Environmental and Resource Economists*.
- Kramer, L., Teurlincx, S., Rashleigh, B., Janssen, A. B. G., Janse, J. H., Brauman, K. A., Földesi, C, van Wijk, D., de Senerpont Domis, L. N., Patil, S. D., Rashidi, P., Hamel, P., **Rising, J.**, Mooij, W. M., Kuiper, J. J. (2023). New paths for modelling freshwater nature futures. *Sustainability Science*.
- **Rising, J.**, Linsenmeier, M., De Menezes, A. (2023). Weather drives variation in COVID-19 transmission and detection. *Environmental Research: Climate*.
- Siddik, M., Dickson, K., **Rising, J.,**, Ruddell, B., Marston, L. (2023). Interbasin water transfers in the United States and Canada. *Scientific Data*.
- **Rising, J.**, Tedesco, M., Piontek, F., Stainforth, D. (2022). The missing risks of climate change. *Nature* (cover).
- **Rising, J.**, Taylor, C., Ives, M., Ward, R. E. (2022). Challenges and innovations in the economic evaluation of the risks of climate change. *Ecological Economics*.
- Carleton, T. A., Jina, A., Delgado, M. T., Greenstone, M., Houser, T., Hsiang, S. M., Hultgren, A., Kopp, R. E., McCusker, K. E., Nath, I., **Rising, J.**, Rode, A., Seo, H. K., Viaene, A., Yuan, J., Zhang, A. T. (2022). Valuing the global mortality consequences of climate change accounting for adaptation costs and benefits. *Quarterly Journal of Economics*.
- **Rising, J.**, Josset, L., Troy, T., Lall, U. (2022). The importance of infrastructure and national demand to represent constraints on water supply in the United States. *Global Environmental Change*.
- Taylor, C., **Rising, J.** (2021). Tipping point dynamics in global land use. *Environmental Research Letters*.
- Kikstra, J., Waidelich, P., **Rising, J.**, Yumashev, D., Hope, C., and Brierley, C. (2021). The social cost of carbon dioxide under climate-economy feedbacks and temperature variability. *Environmental Research Letters*.
- Dietz, S., **Rising, J.**, Stoerk, T., and Wagner, G. (2021). Economic impacts of tipping points in the climate system. *PNAS*. See also ibid. (2022). Reply to Keen et al.: Dietz et al. modeling of climate tipping points is informative even if estimates are a probable lower bound.
- Rode, A., Carleton, T., Delgado, M., Greenstone, M., Houser, T., Hsiang, S., Hultgren, A., Jina, A., Kopp, R., McCusker, K., Nath, I., **Rising, J.**, Yuan, J. (2021). Estimating a social cost of carbon for global energy consumption. *Nature*.
- Piontek, F., Drouet, L., Emmerling, J., Kompas, T., Méjean, A., Otto, C., **Rising, J.**, Soergel, B., Taconet, N., Tavoni, M. (2021). From biophysical to economic impacts of climate change: an integrated perspective. *Nature Climate Change*.
- **Rising, J.** & Devineni, N. (2020). Crop switching reduces agricultural losses from climate change in the United States by half under RCP 8.5. *Nature Communications*.

- Brelsford, C., Dumas, M., Schlager, E., Dermody, B., Aiuvalasit, M., Allen-Dumas, M., Beecher, J., Bhatia, U., D'Odorico, P., Garcia, M., Gober, P., Groenfeldt, D., Lansing, S., Madani, K., Méndez-Barrientos, L. E., Mondino, E., Müller, M., O'Donnell, F., Owuor, P. M., **Rising, J.**, Sanderson, M., de Souza, F. A., Zipper, S. (2020). Developing a sustainability science approach for water systems. *Ecology and Society*.
- **Rising, J.** (2020). Decision-making and integrated assessment models of the water-energy-food nexus. *Water Security*.
- Ciscar, J-C., **Rising, J.**, Kopp, R., & Feyen, L. (2019). Assessing future climate change impacts in the EU and the USA: insights and lessons from two continental-scale projects. *Environmental Research Letters*.
- Ramesh, N., **Rising, J.**, & Oremus, K. L. (2019). The small world of global marine fisheries: the cross-boundary consequences of larval dispersal. *Science*.
- Josset, L., Allaire, M., Hayek, C., **Rising, J.**, Thomas, C., & Lall, U. (2019). The USA water data gap - A survey of state-level water data platforms to inform the development of a national water portal. *Earth's Future*.
- Campbell, K., **Rising, J.**, Mbilo, J. M., & Klopp, J. (2018). Accessibility across transport modes and residential developments in Nairobi. *Journal of Transport Geography*.
- Moore, F. C., **Rising, J.**, Lollo, N., Springer, C., Vasquez, V., Dolginowm A., Hope, C., & Anthoff, D. (2018). MIMI-PAGE, an open-source implementation of the PAGE09 integrated assessment model. *Scientific Data*.
- Hsiang, S., Kopp, R., Jina, A., **Rising, J.**, *et al.* (2017). Estimating economic damage from climate change in the United States. *Science*.
- **Rising, J.** (2017). A flexible approach to model coupling through probabilistic pooling. *Environmental Modelling and Software*.
- Dumas, M., **Rising, J.**, & Urpelainen, J. (2016). Path Dependence, Political Competition, and Renewable Energy Policy: A Dynamic Model. *Ecological Economics*.
- Houser, T., Kopp, R., Hsiang, S., Delgado, M., Jina, A., Larsen, K., Mastandrea, M., Mohan, S., Muir-Wood, R., Rasmussen, D. J., **Rising, J.**, & P. Wilson (2015). *Economic risks of climate change: an American prospectus*. Columbia University Press.
- **Rising, J.** (2014). Creating the Commons: Fisheries and the World Bank. *History of economic thought and policy*, 75 – 95, DOI: `10.3280/SPE2014-001003`.

Reports and Online Books

- **Rising, J.**, Wilson, C. (2024). Seaside to Statewide: The Economic Contributions of Delaware's Coastal Region. Delaware Sea Grant, November 2024.
- **Rising, J.** (2023). Loss and damage today: How climate change is impacting output and capital. Gerard J. Mangone Climate Change Science and Policy Hub, November 2023.
- **Rising, J.**, Dietz, S., Dumas, M., Khurana, R., Kikstra, J., Lenton, T., Linsenmeier, M., Smith, C., Taylor, C., Ward, B. (2022). What will climate change cost the UK? Risks, impacts and mitigation for the net-zero transition. Grantham Research Institute, May 2022.
- **Rising, J.**, Dumas, M., Dicker, S., Propp, D., Robertson, M., Look, W. (2021). Regional Just Transitions in the UK: Insights from 40 years of policy experience. RFF Report 21-14, December 2021.
- **Rising, J.**, Hussain, A., Schwarzwald, K., Trisovic, A. (2021). Practical guide to climate econometrics.
- Sachs, J., Cordes, K., **Rising, J.**, Toledano, P., and Maennling, N. (2019). Ensuring Economic Viability and Sustainability of Coffee Production. Columbia Center on Sustainable Investment.

- DeFries, R.S., Edenhofer, O., Halliday, A.N., Heal, G.M., Lenton, T., Puma, M., **Rising, J.**, Rockström, J., Ruane, A., Schellnhuber, H.J. and Stainforth, D. (2019). The missing economic risks in assessments of climate change impacts. Policy insight.
- **Rising, J.**, Sachs, J., *et al.* (2015). The impacts of climate change on coffee: trouble brewing. `http://https://eicoffee.existencia.org/`
- **Rising, J.** (2015). Scales for scales: An open look at the open sea. ProQuest. `https://search.proquest.com/docview/1682500237`
- **Rising, J.** (2005). DSPFirst Lab Book. Olin College of Engineering, `http://existencia.org/files/dsplabs.pdf`

Popular Media

- Ramesh, N., Rising, J., Oremus, K. (September 18, 2019). Fish larvae float across national borders, binding the world's oceans in a single network. *The Conversation.*
- Rising, J. (October 31, 2017). Rick Perry's Plan To Help Coal Could Hold Back Renewables, But It Isn't The Only Barrier. *Forbes.*

Honors and Awards

2015 – 2017	**Ciriacy-Wantrup Postdoctoral Fellowship**, University of California, Berkeley.
2012 – 2015	**NSF Graduate Research Fellowship Program Fellow**
2013	**Co-organizer**, Interdisciplinary Ph.D. Workshop in Sustainable Development
2003	**Todd Anderson Teaching Award**, Experimental Study Group, M.I.T.
2000	**Fiekowsky Community Service Award**, Experimental Study Group, M.I.T.

Grant Projects

2025	**Accelerating Investment in Adaptation and Resilience by Economic Decision-Makers** – PI (Funded by Gates Foundation)
2025 – 2028	**Social impacts from a hydrogen economy transition** – PI: Chemours (Funded by DOE)
2024 – 2026	**Global Cost of Inaction** – PI: Drew Shindell (Funded by CCAC)
2024	**Optimal bidding strategies for PJM regulation** – PI: Willet Kempton (Funded by Nuuve Holding Corp.)
2023 – 2024	**Ocean and bay information gaps analysis** – Lead PI (Funded by Delaware DNREC, $83,000)
2023 – 2024	**Delaware's coastal economy: contribution, risks, and opportunities** – PI (Funded by Town of Bethany Beach, $42,000)
2023	**New horizons for understanding of the economic consequences of climate change** – Co-PI (Funded by the Royal Society, £50,000)
2022 – 2023	**Faculty Course Development grant** – PI (Funded by the UD Climate Change Science & Policy Hub, $2,500)
2021 – 2022	**Economic Costs of Climate Change in the United Kingdom** – PI (Funded by the European Climate Foundation, £16,400)
2019 – 2022	**Mapping and modeling of interbasin water transfers within the United States** – PI: Landon Marston (Funded by NIWR/USGS, $250,000).
2019 – 2021	**The economic impacts of climate change – expert workshop** – Co-PI (Funded by Department for Business, Energy & Industrial Strategy, £80,000)
2018 – 2019	**Economic and policy analysis for improving smallholder coffee producers' incomes** – PI (Funded by Lavazza Foundation, $30,000*).
2015 – 2016	**Social Science Meta Analysis and Research Transparency** – PI: Solomon Hsiang (Funded by the Berkeley Institute for Transparency in the Social Sciences, $30,000)
2015	**Probabilistic projections of potential humanitarian response needs 2015-2035** – PI: Marc Levy ($5,000*)

2014 – 2017	**America's water: the changing landscape of risk, competing demands and climate** – Co-PIs: Upmanu Lall, Lisa Goddard, Michael Gerrard, Marc Levy, and Brendan O'Flaherty (Funded by NSF, $2,016,098)
2014 – 2015	**Earth Institute Study of Coffee Production and Trade** – PI: Jeffrey Sachs (Funded by Illy Coffee and Lavazza, $200,000)
2013 – 2014	**Econometric assessment of climate change impacts in the USA** – PI: Solomon Hsiang
2013 – 2014	**Electricity and green development** – PI: Wolfram Schlenker (Funded by GGGI, $20,000)
2013	**Damage Function Merging for Integrated Assessment Models** – PI: Robert Kopp ($10,000)

* Funding reported for sub-award to me.

Teaching Experience

2023, 2024	**Coupling Natural to Human Systems** – UD
2023	**Philosophy of Research Seminar** – UD
2022	**Marine Policy Seminar** – UD
2022 – 2025	**Climate Change Economics** – UD
2021	**Complex Systems Analysis** – UD
2018, 2019	**Climate Change: Science, Economics, and Policy** – LSE
2013, 2015	**Complexity Science** – Columbia University, developed curriculum and co-taught with Upmanu Lall and Johannes Castner (2013) and Marion Dumas (2015)
2012	**Progressive Alternatives** – Columbia University (joint with Harvard and Sciences Po), TA for Jeffrey Sachs
2011	**Environmental Science for Sus. Dev.** – Columbia University, TA for John Mutter
2008	**Future Seminar** – Experimental Study Group, M.I.T., Instructor
2005	**Run the World Seminar** – Experimental Study Group, M.I.T., and Olin College of Engineering, Instructor
2005	**Philosophy of Love** – Massachusetts Institute of Technology, TA for Lee Perlman
2005	**Introductory Electronics** – Olin College of Engineering, TA for Gill Pratt
2005	**Engineering of Distributed Systems** – Olin College of Engineering, TA for Gill Pratt
2004	**Human System Dynamics** – Olin College of Engineering, Instructor
2004	**Engineering of Continuous Systems** – Olin College of Engineering, TA for Gill Pratt
2004 – 2005	**Discrete Signal Processing** – Olin College of Engineering, TA for Diana Dabby
2003	**Software Using Images and Sound** – Olin College of Engineering, TA for Jill Crisman
2003	**Technologies and Cultures** – Experimental Study Group, M.I.T., co-taught with Amilio Aviles
2003	**The Learning Seminar** – Experimental Study Group, M.I.T., Instructor
2001 – 2002	**Structure and Interpretation of Computer Programs** – Massachusetts Institute of Technology, TA for Eric Grimson and Ben Vandiver
2000 – 2003	**Lego Robotics Seminar** – Experimental Study Group, M.I.T., Instructor

Online Class Materials

- Rising, J. and A. Aviles (2011). SP.272 / ES.SP272 Culture and Technology, Spring 2003. Massachusetts Institute of Technology: MIT OpenCouseWare, `http://ocw.mit.edu/courses/special-programs/sp-272-culture-tech-spring-2003/`
- Rising, J. (2010). SP.256 / ES.SP256 The Coming Years. Massachusetts Institute of Technology: MIT OpenCouseWare, `http://ocw.mit.edu/courses/special-programs/sp-256-the-coming-years-spring-2008/`
- Rising, J. (2009). SP.291 / ES.SP291 Learning Seminar: Experiments in Education. Massachusetts Institute of Technology: MIT OpenCouseWare, `http://ocw.mit.edu/courses/special-programs/sp-291-learning-seminar-experiments-in-education-spring-2003/`
- Rising, J. (2008). SP.293 / ES.SP293 Lego Robotics. Massachusetts Institute of Technology: MIT OpenCouseWare, `http://ocw.mit.edu/courses/special-programs/sp-293-lego-robotics-spring-2007/`

Professional Service

Committees: School of Marine Science and Policy Graduate Committee; School of Marine Science and Policy Colloquium; Climate Change and Environment Research Seminar Series; Grantham Research Institute Public Event Committee; Net-Zero Grantham Research Institute Coordinator.

Conference organization: **ASSA Session**: Innovative Approaches to Estimating the Social Cost of Carbon: New Perspectives and Methodologies (under review); **AGU Session**: The Future of America's Water: understanding the landscape of water security risk, and addressing the associated societal and economic impacts (co-chair, oral and poster, 2016-2017); Towards better water planning and management in an uncertain world (co-chair, 2018); Multi-Sector Dynamics: Urban System Interactions and Resilience (co-chair 2020); **Student Conferences**: Sustainable Development Research Conference (co-organizer, Columbia, 2016); Interdisciplinary Ph.D. Workshop in Sustainable Development (co-organizer, Columbia University, 2014); Science and Policy Summer School (coordinator, Sciences Po, 2012)

Reviewer: Nature; Science; Nature Communications; Journal of Environmental Economics and Management; Nature Climate Change; Climatic Change; Journal of Hydrology; Climate Policy; Nature Human Behavior; Nature Food; Journal of Hydrology; Journal of Econometrics; Communications Earth & Environment; Journal of Conflict Resolution; Environmental Resource Letters; Economics of Disasters and Climate Change; Environment and Development Economics; Ecological Economics; PLOS One; Conservation Letters, Nature Communications