

Short Curriculum Vitae

Jonathan Mark Gilligan

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1 Contact Information

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2 Degrees Earned

Ph.D.: 1991, Yale University (Physics). Dissertation, *Precise Multiphoton Spectroscopy of the H_2 , HD, and D_2 Molecules and a New Determination of the Ionization Potential of HD*. Advisor: Edward E. Eyler.

B.A.: 1982, Swarthmore College (Physics & Philosophy), with Honors.

3 Employment History

2016–present Associate Professor, Dept. of Civil & Environmental Engineering (secondary), Vanderbilt University.

2009–present Associate Professor, Dept. of Earth & Environmental Sciences, Vanderbilt University.

2008–2009 Research Assistant Professor, Dept. of Earth & Environmental Sciences, Vanderbilt University.

2003–2009 Senior Lecturer, Dept. of Earth & Environmental Sciences, Vanderbilt University.

2000–2003 The Robert T. Lagemann Assistant Professor of Living State Physics, Dept. of Physics & Astronomy, Vanderbilt University.

1996–1998 Associate Director, Center for Molecular and Atomic Studies at Surfaces, Vanderbilt University.

1995–2000 Research Assistant Professor, Dept. of Physics & Astronomy, Vanderbilt University.

1994–1995 Lecturer, Dept. of Physics & Astronomy, Vanderbilt University.

1993–1994 Postdoctoral Research Associate, Cooperative Institute for Research in Environmental Science, National Oceanic & Atmospheric Administration and the University of Colorado. Mentors: James W. Elkins (NOAA) and David W. Fahey (NOAA).

1991–1993 National Research Council Postdoctoral Associate, National Institute of Standards & Technology. Mentor David J. Wineland.

1985–1991 Graduate Student/Teaching Assistant/Research Assistant, Yale University. Mentor Edward E. Eyler.

1983–1985 High school teacher, Commonwealth School, Boston MA.

4 Honors and Awards

2018 The Chancellor's Award for Research, Vanderbilt University (jointly with Michael Vandenberg).

2017 The Morrison Prize for the highest impact paper of the year on sustainability law and policy (jointly with Michael Vandenberg).

1998 Outstanding Scientific Paper Award, NOAA Environmental Research Labs.

1995 NASA Group Achievement Award for outstanding accomplishments and contributions to the Airborne Southern Hemisphere Ozone Experiment and Measurements to Assess the Effects of Stratospheric Aircraft.

1991–1993 National Research Council Postdoctoral Associate

1985–1986 J.W. Gibbs Fellow, Yale University

5 Summary of Published Scholarship

One book, 75 journal papers, 3 book chapters, 18 substantive papers in conference proceedings, 2 patents, 7 open-source software packages.

5a. Citations and H-Index

As of June 28, 2021, Google Scholar lists 5,962 citations (2399 since 2016 and 533 new citations in 2020), an h-index of 33 (22 counting only citations since 2016), and 11 papers with 100+ citations, including 4 papers with 300+.

5b. Selected Publications (* denotes student author, ✓ denotes peer-reviewed)

1. ✓ A.R. Carrico, K.M. Donato, K. Best*, and **J. Gilligan**. (2020). "Extreme Weather and Marriage among Girls and Women in Bangladesh," *Global Environmental Change*, **65**, 102160. DOI: 10.1016/j.gloenvcha.2020.102160.
2. ✓ S. Elsworth, T. Filatova, A.J. Jakeman, A.J. Kettner, M.L. Zellner, I.N. Athanasiadis, S.H. Hamilton, R.L. Axtell, D.G. Brown, **J.M. Gilligan**, M.A. Janssen, D.T. Robinson, J. Rozenberg, I.I.T. Ullah, and S.J. Lade. (2020). "Eight Grand Challenges in Socio-Environmental Systems Modeling," *Socio-Environmental Systems Modeling*, **2**, 16226. DOI: 10.18174/sesmo.2020a16226.
3. **J.M. Gilligan** and M.P. Vandenberg. (2020). "Beyond Wickedness: Managing Complex Systems and Climate Change," *Vanderbilt Law Review*, **73**, 1177–1810.
4. ✓ **J.M. Gilligan** and M.P. Vandenberg. (2020). "A Framework for Assessing the Impact of Private Climate Governance," *Energy Research & Social Science*, **60**, 101400. DOI: 10.1016/j.erss.2019.101400.
5. ✓ K.S. Nielsen, P.C. Stern, T. Dietz, **J.M. Gilligan**, D.P. van Vuuren, M.J. Figueroa, C. Folke, W. Gwozdz, D. Ivanova, L.A. Reisch, M.P. Vandenberg, K.S. Wolske, and R. Wood. (2020). "Improving Climate Change Mitigation Analysis: A Framework for Examining Feasibility," *One Earth*, **3**, 325–336. DOI: 10.1016/j.oneear.2020.08.007.
6. ✓ **J.M. Gilligan**. (2019). "Expertise across Disciplines: Establishing Common Ground in Interdisciplinary Disaster Research Teams," *Risk Analysis*. Advance online publication. DOI: 10.1111/risa.13407.
7. **J.M. Gilligan**. (2018). "Carrots and Sticks in Private Climate Governance," *Texas A&M Law Review*, **6**, 179–198.
8. ✓ **J.M. Gilligan**, C.A. Wold*, S.C. Worland*, J.J. Nay*, D.J. Hess, and G.M. Hornberger. (2018). "Urban Water Conservation Policies in the United States," *Earth's Future*, **6**, 955–967. DOI: 10.1029/2017EF000797.

9. ✓ J.J. Nay*, E.K. Burchfield*, and **J.M. Gilligan**. (2018). "A Machine-Learning Approach to Forecasting Remotely Sensed Vegetation Health," *International Journal of Remote Sensing*, **39**, 1800–1816. DOI: 10.1080/01431161.2017.1410296.
10. ✓ M.P. Vandenbergh and **J.M. Gilligan**. (2017). *Beyond Politics: The Private Governance Response to Climate Change*. New York, NY: Cambridge University Press. ISBN: 978-1107181229. 494 pp.
11. ✓ C. Wilson, S. Goodbred, C. Small, **J. Gilligan**, S. Sams*, B. Mallick, and R. Hale. (2017). "Widespread infilling of tidal channels and navigable waterways in the human-modified tidal delta plain of southwest Bangladesh," *Elementa*, **5**, 78. DOI: 10.1525/elementa.263.
12. ✓ E.K. Burchfield* and **J. Gilligan**. (2016). "Agricultural adaptation to drought in the Sri Lankan dry zone," *Applied Geography*, **77**, 92–100. DOI: 10.1016/j.apgeog.2016.10.003.
13. ✓ T. Gunda*, G.M. Hornberger, and **J.M. Gilligan**. (2016). "Spatiotemporal Patterns of Agricultural Drought in Sri Lanka: 1881–2010," *International Journal of Climatology*, **36**, 563–575. DOI: 10.1002/joc.4365.
14. ✓ L.W. Auerbach*, S.L. Goodbred Jr., D.R. Mondal*, C.A. Wilson, K.R. Ahmed*, K. Roy, M.S. Steckler, C. Small, **J.M. Gilligan**, and B.A. Ackerly. (2015). "Flood risk of natural and embanked landscapes on the Ganges-Brahmaputra tidal delta plain," *Nature Climate Change*, **5**, 152–157. DOI: 10.1038/nclimate2472.
15. **J.M. Gilligan** and M.P. Vandenbergh. (2014). "Accounting for political feasibility in climate instrument choice," *Virginia Environmental Law Journal*, **32**, 1–26. DOI: 10.2139/ssrn.2220788.
16. ✓ T. Dietz, G. Gardner, **J. Gilligan**, P. Stern, and M. Vandenbergh. (2009). "Household actions can provide a behavioral wedge to rapidly reduce U.S. carbon emissions," *PNAS*, **106**, 18452–18456. DOI: 10.1073/pnas.0908738106.

6 Research Grants

PI or Co-PI on current and past grants totaling \$14 million since 2011.

7 Selected Synergistic Activities

2021–present Associate Editor for Climate Law and Policy, *Frontiers in Climate*.

2020–present Director, Vanderbilt Climate and Society Grand Challenge Initiative.

2020–present Advisor to Nashville Mayor's Sustainability Advisory Committee.

2020–present External Advisory Committee, "Water Unaffordability in the United States," NSF-sponsored project. PI: Laura Senier (Northeastern U.). PI.

2016–present External Advisory Committee, Urban Water Innovation Network, an NSF-sponsored sustainability research network with \$12.5 million in funding.

2016–present Organizing Committee, Annual Conference on Artificial Intelligence and the Law, Vanderbilt Law School.

2016–present Program Committee, Environmental and Sustainability Applications track, Winter Simulation Conference, co-sponsored by IEEE and INFORMS.

2018–19 Collaborated with Inside Climate News and the First Amendment Center to run training workshops about reporting on climate change for journalists in the Southeast and Midwest.

2018 Working Group on the Use of Socio-Environmental Systems Modeling in Actionable Science, National Socio-Environmental Synthesis Center.