

HANNAH J. WISEMAN

Penn State University – University Park
Lewis Katz Building, University Park, PA 16802
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EDUCATION, HONORS, AND ACTIVITIES

Yale Law School, J.D., 2007

- Israel H. Peres Prize, best student note or comment appearing in the *Yale Law Journal*, 2007

Dartmouth College, A.B. with High Honors, 2002, double major in Comparative Government and Environmental Studies

- *Summa cum laude*, Phi Beta Kappa honor society, Grace and James Parkes 1920 Prize, Ranny B. Cardozo Award

AREAS OF ACADEMIC FOCUS

Energy Law and Policy, Property Law, Land Use Regulation, Renewable Energy Law, Oil and Gas Law, Environmental Law

TEACHING AND RESEARCH EXPERIENCE

Penn State University, University Park, PA

Professor of Law; Professor, College of Earth and Mineral Sciences; Co-funded Faculty, Institute of Energy and the Environment, July 2020-present; *Wilson Faculty Fellow, College of Earth and Mineral Sciences*, July 2020-June 2023

Penn State Center for Energy Law and Policy

Co-Director, October 2021-present

Florida State University College of Law, Tallahassee, FL

Attorneys' Title Professor

Full Professor, Aug. 2019-May 2020; *Associate Professor*, Nov. 2014-July 2019; *Assistant Professor*, Jan. 2012-Oct. 2014

University of Pennsylvania, Kleinman Center for Energy Policy, Philadelphia, PA

Visiting Scholar (virtual due to COVID-19), March 13-17, 2020

University of Tulsa College of Law, Tulsa, OK

Assistant Professor, Aug. 2010-Dec. 2011

University of Pittsburgh School of Law, Pittsburgh, PA

Short-course professor (The Law of Shale Gas), Aug. 2011

Lewis & Clark Law School, Portland, OR

Short-course professor (Solar and Wind Energy Development), June 2011

University of Texas School of Law, Austin, TX

Visiting Assistant Professor, Aug. 2008–June 2010

LAW JOURNAL ARTICLES, ESSAYS, AND NOTES

Zoning the Subsurface, 72 UCLA L. REV. __ (forthcoming 2024-25) (with Anne Menefee, Mike Helbing, and Seth Blumsack)

Repurposed Energy, 109 MINN. L. REV. __ (forthcoming 2024-25) (with Alexandra Klass)

Self-Regulation in Emerging and Innovative Industries, 62 HOUSTON L. REV. __ (forthcoming 2024-25) (with Daniel Walters)

Grid Reliability in the Electric Era, 41 YALE J. ON REG. 164 (2024) (with Joshua Macey and Shelley Welton)

Farming Solar on the Margins, 103 B.U. L. REV. 525 (2023) (with Chris Wright and Samuel R. Wiseman)

Synthesizing Energy Transitions, 39 GA. ST. L. REV. 1087 (2023, symposium contribution) (with Nadia Ahmad, Danielle Stokes, and Uma Outka)

Grid Reliability Through Clean Energy, 74 STAN. L. REV. 969 (2022) (with Alexandra Klass, Joshua Macey, and Shelley Welton)

Regional Cooperative Federalism and the U.S. Electric Grid, 90 GEO. WASH. L. REV. 147 (2021-2022)

Taxing Local Energy Externalities, 96 NOTRE DAME L. REV. 563 (2020)

Coequal Federalism and Federal-State Agencies, 55 GA. L. REV. 287 (2020) (with Dave Owen)

Federalism for the Worst Case, 105 IOWA L. REV. 101 (2020) (with David Landau and Samuel R. Wiseman)

Rethinking Municipal Corporate Rights, 61 B.C. L. REV. 591 (2020)

Fracking as a Test of the Demsetz Property Rights Thesis, 71 HASTINGS L.J. 845 (2020) (with David Dana)

Food Labeling and the Environment, 34 J. ENVTL. L. & LITIGATION 1 (2019) (with Samuel R. Wiseman)

Federal Laboratories of Democracy, 52 U.C. DAVIS L. REV. 1119 (2018) (with Dave Owen)

Constrained Regulatory Exit in Energy Law, 67 DUKE L.J. 1687 (2018, symposium contribution) (with Jim Rossi)

Delegation and Dysfunction, 35 YALE J. ON REG. 233 (2018)

Expanding the Boundaries of Administrative Constitutionalism: Understanding and Assessing Agencies' Experimentation with Procedures, 32 J. LAND USE & ENVTL. L. 543 (2017, invited symposium contribution)

Negotiated Rulemaking and New Risks: A Rail Safety Case Study, 7 WAKE FOREST J. L. & POL. 207 (2017, invited symposium contribution)

Disaggregating Preemption in Energy Law, 40 HARV. ENVTL. L. REV. 293 (2016)

Regional Energy Governance and U.S. Carbon Emissions, 43 *ECOLOGY L.Q.* 143 (2016) (with Hari M. Osofsky)

The Fracking Revolution: Shale Gas As A Case Study in Innovation Policy, 64 *EMORY L.J.* 955 (2015) (with John M. Golden)

Coordinating the Oil and Gas Commons, 2014 *B.Y.U. L. REV.* 1543 (invited symposium contribution)

Regulatory Islands, 89 *N.Y.U. L. REV.* 1661 (2014)

A Market Approach to Regulating the Energy Revolution: Assurance Bonds, Insurance, and the Certain and Uncertain Risks of Hydraulic Fracturing, 99 *IOWA L. REV.* 1523 (2014) (with David A. Dana)

Remedying Regulatory Diseconomies of Scale, 94 *B.U. L. REV.* 235 (2014)

Hybrid Energy Governance, 2014 *U. ILL. L. REV.* 1 (with Hari M. Osofsky)

Urban Energy, 40 *FORDHAM URB. L. J.* 1793 (2013, invited symposium contribution)

Dynamic Energy Federalism, 72 *MD. L. REV.* 773 (2013) (with Hari M. Osofsky)

Risk and Response in Fracturing Policy, 84 *U. COLO. L. REV.* 729 (2013)

Community-Scale Renewable Energy, 4 *SAN DIEGO J. CLIMATE & ENERGY LAW* 165 (2012-13, invited symposium contribution) (with Sara C. Bronin)

The Renter/Owner Divide in Private Governance, 2012 *UTAH L. REV.* 2067 (2012)

Fracturing Regulation Applied, 22 *DUKE ENVTL. LAW & POLICY FORUM* 361 (2012, invited symposium contribution)

Expanding Regional Renewable Governance, 35 *HARV. ENVTL. L. REV.* 477 (2011)

Formulating a Law of Sustainable Energy: The Renewables Component, 28 *PACE ENVTL. L. REV.* 827 (2011) (invited symposium contribution, with E. Nichole Saunders & Lindsay Grisamer)

Local Energy, 60 *EMORY L.J.* 877 (2011) (with Garrick Pursley)

Regulatory Adaptation in Fractured Appalachia, 21 *VILL. ENVTL. L.J.* 229 (2010, invited symposium contribution)

Public Communities, Private Rules, 98 *GEO. L.J.* 697 (2010)

Untested Waters: The Rise of Hydraulic Fracturing in Oil and Gas Production and the Need to Revisit Regulation, 20 *FORDHAM ENVTL. L. REV.* 115 (2009)

Pro Bono Publico: The Growing Need for Expert Aid, 60 *S.C. L. REV.* 493 (2008) (award-winning Warren E. Burger essay)

Notice and Expectation Under Bounded Uncertainty: Defining Evolving Property Rights Boundaries

Through the Public Trust and Takings, 21 TULANE ENVTL. L.J. 233 (2008)

Note, *Searching for Balance in the Aftermath of the 2006 Takings Initiatives*, 116 YALE L.J. 1518 (2007) (reprinted in THOMSON WEST, ZONING AND PLANNING LAW HANDBOOK (2008))

ONLINE SCHOLARLY PUBLICATIONS

Localizing the Green Energy Revolution, 70 EMORY L.J. ONLINE 59 (2021)

Federalism, Democracy, and the 2020 Election, 99 TEX. L. REV. ONLINE 96 (2021) (with David Landau and Samuel R. Wiseman)

The New Oil and Gas Governance, 129 YALE L.J. FORUM 51 (2020) (with Tara Righetti and James Coleman)

Hydraulic Fracturing and Legal Frameworks, OXFORD HANDBOOKS ONLINE (Apr. 2017), <http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199935352.001.0001/oxfordhb-9780199935352-e-32>

Regulatory Triage in a Volatile Political Era, 117 COLUM. L. REV. ONLINE 240 (2017)

Clean Energy Incentives: Risk, Capture, and Federalism, 67 FLA. L. REV. FORUM 161 (2016) (invited online article response)

Moving Past Dual Federalism to Achieve Electric Grid Neutrality, 100 IOWA L. REV. BULL. 97 (2015) (invited online article response)

Governing Fracking from the Ground Up, 93 TEX. L. REV. SEE ALSO 29 (2015) (invited online article response)

Hydraulic Fracturing and Information Forcing, 74 OHIO ST. L. J. FURTHERMORE 86 (2013)

The Private Role in Public Fracturing Disclosure and Regulation, 3 HARV. BUSINESS L. REV. ONLINE 49 (2013) (invited contribution to “The Expansion of Shale and Fracking in the U.S. Energy Market and Current Developments in Business Law”)

Trade Secrets, Disclosure, and Dissent in a Fracturing Energy Revolution, 111 COLUM. L. REV. SIDEBAR 1 (2011)

Partial Regulatory Takings: Stifling Community Participation Under the Guise of Kelo Reform, 117 YALE L.J. POCKET PART 61 (2007)

BOOKS AND TEXTBOOKS

CASES AND TEXT ON PROPERTY, Eighth Edition (Aspen, 2024) (with Susan French, Gerald Korngold, and Nadav Shoked)

ENERGY, ECONOMICS, AND THE ENVIRONMENT: CASES AND MATERIALS, Sixth Edition (Foundation Press, 2024) (with Joel B. Eisen, Emily Hammond, Josh Macey, Jim Rossi, and David B. Spence)

HANDBOOK OF ENERGY LAW IN THE LOW-CARBON TRANSITION (2023) (editor with Giuseppe

Bellantuano, Lee Godden, Hanri Mostert, and Hao Zhang)

HYDRAULIC FRACTURING: A GUIDE TO ENVIRONMENTAL AND REAL PROPERTY LEGAL ISSUES (American Bar Association 2016) (with Keith Hall)

ENERGY LAW CONCEPTS & INSIGHTS (Foundation Press 2016) (with Alexandra B. Klass)

BOOK CHAPTERS

US Hydraulic Fracturing: A Case Study in Evolving Environmental Governance, in RESEARCH HANDBOOK ON ENVIRONMENTAL REGULATION (David Williamson, ed.) (forthcoming 2024-25)

Electricity Regulation, Markets, and Governance, in GLOBAL CLIMATE CHANGE AND U.S. LAW (Michael B. Gerrard, Jody Freeman, and Michael Burger, eds) (2023) (with Jim Rossi)

The Shale Gas Revolution—The U.S. Perspective, in RESEARCH HANDBOOK OF OIL AND GAS LAW (Tina Hunter, ed.) (2022)

Shale Gas Development, Economic Impacts, and Regulation, in THE ROUTLEDGE HANDBOOK OF ENERGY LAW (Tina Hunter et al., eds.) (2020)

Stationary Sources, Movable Rules: Intransigence and Innovation under the Clean Air Act, in LESSONS FROM THE CLEAN AIR ACT: BUILDING DURABILITY AND FLEXIBILITY INTO LONG-TERM ENERGY POLICY (Dallas Burtraw & Ann Carlson, eds.) (Cambridge University Press 2019)

Evolving Energy Federalism: Current Authority Allocations and the Need for Inclusive Governance, in THE LAW AND POLICY OF ENVIRONMENTAL FEDERALISM: A COMPARATIVE ANALYSIS (Kalyani Robbins, ed.) (Edward Elgar Publishing 2015)

The Environmental Risks of Shale Gas Development and Emerging Regulatory Responses: A U.S. Perspective, in HANDBOOK OF SHALE GAS LAW AND POLICY (Tina Hunter, ed.) (Intersentia 2016)

PEER REVIEWED PUBLICATIONS

Anne Menefee, **Hannah Wiseman**, Seth Blumsack, and Michael Helbing, *Op-Ed: Spatial Planning for U.S. Geologic Carbon Sequestration*, __ PROC. NATL. ACAD. SCI. __ (forthcoming 2024)

Carla Campos Morales, Emily L. Pakhtigian, Joel R. Landry, **Hannah Wiseman**, An T. Pham, and Wei Peng, *Designing retirement strategies for coal-fired power plants to mitigate air pollution and health impacts*, 58 ENVTL. SCI. & TECH. 15371 (2024)

Lauren A. Patterson, Katherine E. Konschnik, **Hannah Wiseman**, Joseph Fargione, Kelly O. Maloney, Joseph Kiesecker, Jean-Philippe Nicot, Sharon Baruch-Mordo, Sally Entrekin, Anne Trainor, and James E. Saiers, *Unconventional Oil and Gas Spills: Risks, Mitigation Priorities, and State Reporting Requirements*, 51 ENVTL. SCI. & TECH. 2563 (2017)

Kelly O. Maloney, Sharon Baruch-Mordo, Lauren A. Patterson, Jean-Philippe Nicot, Sally A. Entrekin, Joseph E. Fargione, Joseph M. Kiesecker, Kate E. Konschnik, Joseph N. Ryan, Anne M. Trainor, James E. Saiers, and **Hannah J. Wiseman**, *Unconventional Oil and Gas spills: Materials, Volumes, and Risks to Surface Waters in Four States of the U.S.*, 581-582 SCI. TOTAL ENV'T 369 (2017)

Hannah Wiseman, *The Capacity of States to Govern Shale Gas Development Risks*, 48 ENVTL. SCI. & TECH. 8376, issue 15 (2014)

Hanna L. Breetz, Karen Fisher-Vanden, **Hannah Jacobs**, and Claire Schary, *Trust and Communications: Mechanisms for Increasing Farmers' Participation in Water Quality Trading*, 81 LAND ECON. 170 (May 2005)

OTHER PUBLICATIONS

Pipelines, Communities, and the Environment: The Growing Complexities of Siting, TRENDS (May/June 2020)

Hydraulic Fracturing: Contracts, Courts, and Compromise, GPSOLO (May/June 2016)

BLM Regulation of Hydraulic Fracturing on Federal Lands, TRENDS (September/October 2015)

Regulatory Risks in Tight Oil and Gas Development, NATURAL GAS & ELECTRICITY 29/5 (2013), Wiley Periodicals

Beyond Coastal Oil v. Garza: Nuisance and Trespass in Hydraulic Fracturing Litigation, 57 THE ADVOCATE 1, 8 (2011) (State Bar of Texas Litigation Section Report, Energy Law Litigation)

Evolving Regulation in the New Energy "Boomstates," ADMIN. & REG. L. NEWS (2010) (invited short version of *Regulatory Adaptation in Fractured Appalachia*)

Public Communities, Private Rules, LEGAL WORKSHOP (2010), <http://legalworkshop.org/2010/03/24/public-communities-private-rules> (short essay version)

Getting From Here to There: Push to Increase Renewable Energy Capacity and Transmit Power Means Work for Lawyers, TEXAS LAWYER, Nov. 23, 2009

REPORTS AND WHITE PAPERS

THE KEY TO ELECTRIC GRID RELIABILITY: MODERNIZING GOVERNANCE (2024) (with Alexandra Klass, Joshua Macey, and Shelley Welton) (2024), <https://kleinmanenergy.upenn.edu/wp-content/uploads/2024/03/KCEP-Paper-15-Key-to-Electric-Grid-Reliability.pdf>

COORDINATING AND ACCESSING LOW-INCOME ENERGY EFFICIENCY PROGRAMS (November 2023) (with Rahman Azari, Seth Blumsack, Jingyu Guo, Michael D. Helbing, Lisa D. Iulo, Daniel J. Mallinson, Selena E. Ortiz, Tasneem Tariq, and Megan Wright), https://celp.psu.edu/wp-content/uploads/2023/11/Energy-Efficiency-White-Paper-Final-11-2023.pdf#new_tab

THE LOCAL SOCIAL AND ECONOMIC CONTEXT OF ENERGY TRANSITIONS (2022) (with Jennifer Baka, Seth Blumsack, and Caden Vitti), https://celp.psu.edu/wp-content/uploads/2023/12/Local-Social-and-Econ-Context-of-EnergyTransitions_Apr2022-New-Cover-Page.pdf#new_tab

BALANCING RENEWABLE ENERGY GOALS WITH COMMUNITY INTERESTS, Kleinman Center for Energy Policy, Policy Digest (May 2020), <https://kleinmanenergy.upenn.edu/sites/default/files/policydigest/KCEP-Balancing-Renewable-Energy-Singles.pdf>

TRANSITIONING TO A LOWER-CARBON ENERGY FUTURE: CHALLENGES AND OPPORTUNITIES FOR MUNICIPAL UTILITIES AND ELECTRIC COOPERATIVES (2018) (with Heather Payne, Jonas Monast, and Nicolas Eason)

THE STATE OF STATE SHALE GAS REGULATION (2013), http://www.rff.org/rff/documents/RFF-Rpt-StateofStateRegs_Report.pdf (Resources for the Future report, with Nathan Richardson, Madeline Gottlieb, and Alan Krupnick)

U.S. Regulation of Unconventional Oil and Gas Development: Progress and Challenges, *in* A NEW GOLDEN ERA? UNCONVENTIONAL OIL AND GAS REGULATION IN THE U.S.: IMPLICATIONS FOR KOREA (J. James Kim, ed., The Asan Institute for Policy Studies, 2013)

AWARDS AND RECOGNITION

Arizona State University, Sandra Day O'Connor College of Law, 2023 Morrison Prize for *Grid Reliability Through Clean Energy* (with Alexandra Klass, Joshua Macey, and Shelley Welton)

Penn Regulatory Review, *Farming Solar on the Margins* named one of the top pieces of regulatory scholarship of 2022, <https://www.theregreview.org/2022/12/30/top-regulatory-news-of-2022/>

Penn State Law, LL.M. Teaching Award, 2022

Land Use and Environment Law Review, *Regulatory Islands* and *The Fracking Revolution: Shale Gas As A Case Study in Innovation Policy* (with John M. Golden) each selected as one of the strongest pieces of environmental law scholarship published in the period covered by the 2016 volume and selected for republication in the review

IUCN Academy of Environmental Law, 2015 Scholarship Award in the Emerging Scholar Category

Land Use and Environment Law Review, *Remedying Regulatory Diseconomies of Scale* selected as one of the strongest pieces of environmental law scholarship published in the period covered by the 2015 volume and selected for republication in the review

Environmental Law and Policy Annual Review, Vanderbilt Law School and Environmental Law Institute, *A Market Approach to Regulating the Energy Revolution: Assurance Bonds, Insurance, and the Certain and Uncertain Risks of Hydraulic Fracturing* (with David A. Dana) recognized as a top piece and selected for republication in the review

American Inns of Court, Washington, D.C., Warren E. Burger Prize for writing, 2008

The Burton Foundation, Washington, D.C., The Burton Awards for Legal Achievement, law student winner, 2008

COURSES TAUGHT

Energy Law & Policy; Land Use Regulation; Property Law; Oil & Gas Law; Emerging Issues in Energy Law: Renewables and Fossil Fuels; Environmental Law; The Law of Electricity; The Law of Shale Gas; Renewable Energy Law and Energy Justice; The Great Energy Transition: Law, Economics, and New Frontiers (co-taught with Andrew Kleit)

SELECTED PRESENTATIONS DELIVERED

University of Texas School of Law, Austin, Texas, Faculty Presentation, *Grid Reliability in the Electric Era*, invited speaker, November 2023

Boston College Law School, Newton, MA, Faculty Presentation, *Zoning the Subsurface*, invited speaker, March 2023

Yale Center for Business and the Environment, New Haven, Connecticut, Guest Lecture, Financing and Deploying Clean Energy Certificate Program, *Natural Gas and Hydrogen*, invited lecturer, September 2022

Temple University Beasley School of Law, Philadelphia, PA, Colloquium, *Grid Reliability Through Clean Energy*, invited presenter, October 2021

Minnesota State Bar Association, Public Utilities Section, Virtual Keynote Presentation, *Enhancing Distributive Justice in the Energy Transition*, invited keynote presenter, April 2021

Kleinman Center for Energy Policy, University of Pennsylvania, Philadelphia, PA, Webinar, *Combating Climate Change Through Regulatory Relief*, invited speaker, April 2020

University of Colorado Law School, Boulder, CO, Twelfth Annual Schultz Lecture in Energy, *Energy as a Locally Desirable Land Use*, invited lecturer, October 2019

Duke University School of Law, Durham, NC, *Duke Law Journal* Administrative Law Symposium, acceptor paper presenter with Jim Rossi, February 2018

University of Virginia School of Law, Charlottesville, VA, Virginia Environmental Law Journal Symposium, invited keynote panel presenter, October 2017

University of Georgia School of Law, Athens, GA, faculty workshop, *Delegation and Dysfunction*, invited presenter, April 2017

University of California, Berkeley, School of Law, Berkeley, CA, Public Policy Workshop, *Dysfunctional Delegation*, invited presenter, March 2017

Georgetown Law School, Washington, D.C., Environmental Research Workshop, *Rethinking Agency Delegation*, invited presenter, January 2017

Society for Environmental Law and Economics, University of Texas School of Law, Austin, Texas, *Regional Energy Governance and U.S. Carbon Emissions*, accepted paper presenter, May 2016

Northwestern Pritzker School of Law, Chicago, IL, Environmental Law Colloquium, *Disaggregating Preemption*, invited colloquium presenter, February 2016

Nicholas Institute for Environmental Policy Solutions, Duke University, Orlando, FL, Navigating the EPA's Clean Power Plan: Charting a Course for Southeast Energy, *Balkanizing the Grid? Implications if States Make Different Choices*, invited panelist, January 2016

Tel Aviv University Buchmann Faculty of Law, Tel Aviv, Israel, Law, Environment, and Energy Workshop, *Disaggregating Preemption in Energy Law*, invited workshop presenter, December 2015

Energy and Mineral Resources Subcommittee of the House Natural Resources Committee, U.S. House of Representatives, Washington, D.C., invited provider of written and oral testimony, July 2015, resources.edgeboss.net/wmedia/resources/113/2015_07_15_emr.wvx

University of California, Berkeley, Boalt Hall School of Law, Berkeley, CA, Environmental Law Colloquium, *Informal Federalism*, invited colloquium presenter, February 2015

UCLA School of Law, Los Angeles, CA, Climate and Energy Law Workshop, *Informal Federalism*, invited workshop presenter, February 2015

Penn Program on Regulation, University of Pennsylvania Law School, Philadelphia, PA, The Risks and Regulatory Challenges of Unconventional Oil and Gas Development, *Good Governance in Unconventional Oil and Gas Extraction: Harnessing the Bird's-Eye View of Agencies*, invited panelist, February 2015

National Governors Association, Salt Lake City, UT, Second Annual Governors' Policy Forum on Responsible Shale Development, *Market-Based Mechanisms in Shale Gas Governance*, invited panelist, December 2014

Northwestern University Law School, Chicago, IL, Third Annual Searle Center Conference on Federalism and Energy, *The Heydinger Gap and Informal Federalism Solutions*, invited panelist, November 2014

Association for Law, Property, and Society, Vancouver, Canada, Energy and Property, *Allocating Energy Governance*, panelist; *Evolving Geographies of Energy Transition*, moderator, May 2014

American Planning Association, Atlanta, GA, Advanced Environmental Planning Workshop, Environmental Planning Practices, *Natural Resource Extraction Planning and Law*, invited presenter, April 2014

University of Texas School of Law, Austin, TX, Faculty Colloquium, *The Fracking Revolution: A Case Study in Policy Levers to Promote Innovation*, invited co-presenter with John M. Golden, April 2014

Yale Law School Information Society Project, New Haven, CT, Innovation Law Beyond IP, *The Fracking Revolution: A Case Study in Policy Levers to Promote Innovation*, co-presenter with John M. Golden, March 2014

Yale Center for Environmental Law and Policy & Land Use Law Center, Pace Law School, Yale Law School, New Haven, CT, Controlling the Local Impacts of Hydrofracking, *Addressing Shale Gas Governance Gaps*, invited featured speaker, March 2014

Louisiana State University, Paul M. Hebert Law Center, Baton Rouge, LA, Liskow & Lewis Visiting Professorship in Energy Law Inaugural Lecture, *Enhancing Sub-Federal Renewable and Fossil Energy Governance*, invited inaugural lecturer and visiting professor, October 2013

National Research Council – The National Academies, Morgantown, WV, Workshop on the Development of Unconventional Hydrocarbon Resources in the Appalachian Basin, *State Shale Gas Regulation in the Appalachian Basin: Recent Enhancements, Remaining Gaps, and Opportunities for Change*, invited presenter, September 2013

National Research Council – The National Academies, Washington, D.C., Committee on Risk Management and Governance Issues in Shale Gas Development, Shale Gas Workshop #2, *Evaluating and Enhancing the Capacity of the States to Govern Unconventional Oil and Gas Development and Risks*, invited paper author and presenter, August 2013

Rocky Mountain Mineral Law Foundation, Flagstaff, AZ, Sixteenth Institute for Natural Resources Law Teachers, *Teaching Unconventional Gas and Oil Issues*, invited panel organizer and moderator, May 2013

Columbia Law School and Columbia Business School, New York, NY, How Should Hydraulic Fracturing Be Regulated?, *Federal Approaches to Shale Gas Development: Statutes, Standards, and Studies*, invited panelist, April 2013

Vanderbilt Law School, Nashville, TN, *Remedying Regulatory Diseconomies of Scale*, invited faculty workshop presenter, March 2013

Vanderbilt Law School, Nashville, TN, Energy, Environment, and Land Use Program, *The Evolving Landscape of U.S. Unconventional Energy: Fracturing, Federalism Debates, and the Regulatory Divide*, invited lecturer, March 2013

Harvard Law School, Cambridge, MA, Environmental Law Society Panel, *Fracking and the Law: The Legal and Environmental Implications of the Hydraulic Fracturing Boom*, invited panelist, March 2013

Yale Climate & Energy Institute and the Society of Petroleum Engineers, New Haven, CT, Research Frontiers in the Science of Unconventional Energy Resources, *Regulations and Best Practices in the Development of Unconventional Resources*, invited panelist, March 2013

Asan Institute for Policy Studies, Seoul, Korea, Non-Market Factors in Shale Gas Development, *An Introduction to U.S. Regulation of Oil and Gas Drilling and Hydraulic Fracturing*, invited workshop speaker, January 2013

Yale Center for Environmental Law and Policy, monthly Webinar Series in Emerging Issues in Shale Gas Development, *Understanding and Improving Regulation of Shale Gas Development*, invited webinar presenter, December 2012

American Bar Association Section of Environment, Energy, and Resources 20th Section Fall Meeting, Austin, TX, Environmental Impacts of Oil and Gas Production in Shale Formations: Policy, Perception, and Reality, *The New and Broader Risks of Shale Gas and Oil Development: Identifying Environmental Impacts Through Regulatory Violations and States' Policy Priorities*, invited panelist, Oct. 2012

Presentation to congressional staff in Washington, D.C. with Dr. Rob Jackson, Nicholas Chair of Global Environmental Change at the Nicholas School of the Environment, *State Regulation of Shale Gas Development: Variation, Innovation, and Challenges*, March 2012

Northwestern University Law School, Chicago, IL, Searle Center Conference on Federalism and Energy in the United States, *State and Local Regulation of Shale Oil and Gas Development: Adaptation, Experimentation, or Chaos?*, invited panelist, March 2012

Duke Nicholas School of the Environment, Durham, NC, Hydrofracking Workshop, The Legal and Socioeconomic Setting, *Fracturing Regulation Applied*, invited panelist, January 2012

Rocky Mountain Mineral Law Foundation, Columbia River Gorge, 2011 Natural Resources Law Teachers Institute, *Siting Issues for Utility-Scale Renewables*, panelist, May 2011

American Planning Association, Boston, MA, 2011 National Planning Conference, *Land, Covenants, and Law*, invited panelist, April 2011

The University of Texas School of Law, Austin, TX, 2010 Carbon and Climate Change, *Smart Grids: Key Developments, Economics, and Legal Issues*, invited panelist, February 2010

Villanova Law School, Villanova, PA, Villanova Environmental Law Journal Symposium, “*Shale*” *We Drill? The Legal and Environmental Impacts of Extracting Natural Gas from Marcellus Shale*, invited panelist, January 2010

The University of Texas School of Law, Austin, TX, Texas Journal of Oil, Gas, and Energy Law, Energy Law Symposium, *Hydraulic Fracturing and the States*, invited panelist, January 2010

SELECTED MEDIA QUOTATIONS, PODCASTS, and OP-EDS

Op-ed: Grid reliability’s core challenge is governance, not a changing resource mix, UTILITY DIVE, Apr. 5, 2024, <https://www.utilitydive.com/news/grid-reliability-core-challenge-governance-not-changing-resource-mix/712239/> (with Alexandra Klass, Josh Macey, and Shelley Welton)

Podcast: Solar-powered water treatment, GROWING IMPACT, Oct. 1, 2023, <https://iee.psu.edu/news/podcast/growing-impact-solar-powered-water-treatment>. Associated article at <https://www.psu.edu/news/research/story/growing-impact-podcast-explores-solar-energy-wastewater-treatment-plants/> (with Christine Kirchhoff and Kimberly Van Meter)

Shelby Bradford, *Pa. group pitches farms on solar model that keeps farmland usable, takes up less space*, STATE IMPACT PENNSYLVANIA, July 31, 2023, <https://stateimpact.npr.org/pennsylvania/2023/07/31/pa-group-pitches-farms-on-solar-model-that-keeps-farmland-usable-takes-up-less-space/>

Clean Energy is Grid Reliability’s Best Hope, Not Enemy, BLOOMBERG LAW, Mar. 17, 2022, <https://news.bloomberglaw.com/environment-and-energy/clean-energy-is-grid-reliabilitys-best-hope-not-enemy>

Alex Brown, *Some Cities, States Say Big Oil Should Pay for Climate Damage*, STATELINE, Apr. 13, 2022, <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2022/04/13/some-cities-states-say-big-oil-should-pay-for-climate-damage>

Op-ed: Localizing the Green Energy Revolution, THE HILL, Feb. 2, 2021, <https://thehill.com/opinion/energy-environment/536941-localizing-the-green-energy-revolution>

Kleinman Center for Energy Policy, University of Pennsylvania, *The Struggle for Local Control over Energy Development*, Apr. 3, 2020, <https://kleinmanenergy.upenn.edu/energy-policy-now/struggle-local-control-over-energy-development>

Andrew Shi, *Negotiated Rulemaking and the Borrower Defense Regulation*, THE REGULATORY REVIEW, Aug. 3, 2018, <https://www.theregreview.org/2018/08/03/shi-negotiated-rulemaking-borrower-defense/>

The Pull of Energy Markets—and Legal Challenges—Will Blunt Plans to Roll Back EPA Carbon Rules, THE CONVERSATION (with Hari Osofsky) (Oct. 2017), <https://theconversation.com/the-pull-of-energy-markets-and-legal-challenges-will-blunt-plans-to-roll-back-epa-carbon-rules-85561>

National Public Radio, Marketplace, *The Federal Government's Limits on Regulating Fracking*, July 5, 2016, <http://www.marketplace.org/2016/07/05/sustainability/federal-governments-limits-regulating-fracking>

National Public Radio, Marketplace, *Colorado Court Takes up Local Laws Limiting Fracking*, Sept. 23, 2015, <http://www.marketplace.org/topics/sustainability/colorado-court-takes-local-laws-limiting-fracking>

National Public Radio, The Diane Rehm Show, *New State Laws Aimed at Preventing Local Bans on Fracking*, May 27, 2015, <http://thedianerehmshow.org/shows/2015-05-27/new-state-laws-aimed-at-preventing-local-bans-on-fracking>

National Public Radio, Marketplace, *Pipeline Spill Exposes a Fracking Cost*, Jan. 22, 2015, <http://www.marketplace.org/topics/economy/pipeline-spill-exposes-fracking-cost>

National Public Radio, Marketplace, *A Fracking Story Too Good to be True*, Aug. 27, 2014, <http://www.marketplace.org/topics/sustainability/fracking-story-too-good-be-true>

Russell Gold, *The Fracking Fight's New Front Line*, WALL STREET JOURNAL, June 4, 2014, <http://www.wsj.com/articles/fracking-meets-new-resistance-from-communities-1401905185>

National Public Radio, Living on Earth, May 9, 2014, *Texas Family Wins Fracking Suit*, <http://www.loe.org/shows/shows.html?programID=14-P13-00019#feature2>

National Public Radio, Morning Edition, *Texas Family's Nuisance Complaint Seen as Win Against Fracking*, May 2, 2014, <http://www.npr.org/2014/05/02/308796539/texas-familys-nuisance-complaint-seen-as-win-against-fracking>

Ana Campoy & Stephanie Simon, *Wind Fuels Fight in Oil Patch*, WALL STREET JOURNAL, Nov. 26, 2011, <http://www.wsj.com/articles/SB10001424052970203710704577052831852364286>

Ben Casselman & Russell Gold, *Drilling Tactic Unleashes a Trove of Natural Gas—And a Backlash*, WALL STREET JOURNAL, Jan. 21, 2010, <http://www.wsj.com/articles/SB10001424052748703837004575012952816154746>

PROFESSIONAL EXPERIENCE

Hyde Park Neighborhood Association, Austin, TX *Of Counsel (pro bono)*, Apr. 2008–June 2010

United States Court of Appeals for the Fifth Circuit, Austin, TX *Law Clerk to Judge Patrick Higginbotham*, Aug. 2007–Aug. 2008

ICF Consulting, Washington, D.C. *Research Assistant* 2002–2004; promoted to *Analyst* 2004

SELECTED SERVICE AND PROJECTS

Selected outside service

Periodic grant application reviewer, National Science Foundation and Sloan Foundation, 2011-present

Periodic peer reviewer, *Science*, *Environmental Science & Technology*, *Energy Policy*, *Journal of Environmental Law*, and *Environmental Research Letters*, among other journals

Member of Editorial Board, ABA Section of Environment, Energy, and Resources TRENDS, Sept. 2015-Aug. 2019

Member Scholar, Center for Progressive Reform, Sept. 2015-present

Working Group team member, Science for Nature and People, The Nature Conservancy and National Center for Ecological Assessment and Synthesis, *Hydraulic Fracturing: Impacts on Water Quality and Quantity*, Feb. 2014-2016

Member of the University of Michigan Graham Sustainability Institute Hydraulic Fracturing Integrated Assessment Review Panel, 2014-2015

Co-organizer, University of Pittsburgh 2013 Energy Law & Policy Institute, summer 2013

Editor, Environmental Law Prof Blog, January–December 2011

Selected service to law school and university

Penn State

Vice-Chair of Faculty, September 2023-present

Member of three Ph.D. dissertation committees; director of Policy Lab for Geography Ph.D. student; thesis advisor to undergraduate honors student; independent study advisor

Member of Environmental Engineering Faculty Search Committee, Spring 2024

Member of Climate Policy and Environmental Justice, School of Public Policy Faculty Search Committee, Fall 2022

Member of Department of Energy and Mineral Engineering Department Head Search Committee, Fall 2022

Member of Law School/School of International Affairs Dean Search Committee, 2021-2022

Minority Mentor, 2022-2024

Florida State

Appointments Committee Chair, Florida State University College of Law, August 2017-May 2018

Member of Dean Search Committee, December 2015-June 2016

On-campus coach for Energy Law moot court team, August 2012–March 2013

GRANTS

Co-Principal Investigator, RAISE: CET: SH₂INE: Sustainable, Holistic Hydrogen INtegration Evaluation: models and analyses of human, environmental and policy dimensions, National Science Foundation, 2024-2026 (\$999,628), with Chiara Lo Prete, Kimberly Marion Suseeya, Jennifer Dunn, and Zhaomiao Guo

Contributing Investigator, IUCRC Phase I Pennsylvania State University: Center for CO₂ Storage Modeling, Analytics, and Risk Reduction Technologies (CO₂-SMART), National Science Foundation, 2025-2028 (\$101,435 obligated, \$502,026 intended), with Sanjay Srinivasan, Seth Blumsack, Tieyuan Zhu, Eugene Morgan, and Anne Menefee (Principal Investigators)

Investigator, Just Energy Transitions and Place, Alfred P. Sloan Foundation, 2022-2025 (\$500,000), with Nadia Ahmad, Jennifer Baka, Elise Harrington, Ward Lyles, and Uma Outka

Project Director, Understanding and Addressing the Impact of Solar Development on Pennsylvania Farmland, Center for Rural Pennsylvania, 2023-2024 (\$50,000), with Mohamed Badissy, Seth Blumsack, Thomas Daniels, Brook Duer, Zachary Goldberg, David Kay, and Ross Pifer

Co-Principal Investigator, Understanding the scope, drivers, and energy justice implications of solar adoption in the United States wastewater sector, Penn State Institutes of Energy and the Environment Seed Grant Program, 2023-2024 (\$30,000), with Christine Kirchhoff and Kimberly Van Meter

Principal Investigator, Expanding the Policy Foundation for Electricity Prosumers: Lessons from New York and California, Penn State Institutes for Energy and the Environment Seed Grant Program, 2021-2022 (\$19,671), with Andrew Kleit and Gregory Pavlak

Co-Principal Investigator, Assessing distributional effects of coal-fired power plant operations on pollution and health, Penn State Institutes for Energy and the Environment Seed Grant Program, 2021-2022 (\$30,000), with Wei Peng and Emily Pakhtigian

BAR ADMISSIONS

Texas (inactive)