



Rachel A. Meidl, LP.D., MEPM, M.Ed, CHMM

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PROFILE

Appointed to the U.S. Federal Government Senior Executive Service (SES) in July 2015.

Officially nominated by President Obama on November 18, 2016, as a Board Member of the U.S. Chemical Safety and Hazard Investigation Board, a position requiring Senate confirmation.¹

Member of the National Academies of Sciences, Engineering, and Medicine Roundtable on Plastics Committee.

Member of the National Academy of Sciences Environmental Health Matters Initiative Microplastics Planning Committee—Exploring Exposure and Related Health Effects.

Member of the National Academies of Sciences Committee for Circularity and Plastics.

Science and policy expert for the Ocean Plastic Leadership Network to guide the development of responsible production guidelines for advanced, chemical, and molecular recycling of plastics for the UN Global Plastics Treaty negotiations.

Member of the 2024 Brazil G20 Presidency T20 Taskforce on *Sustainable climate action and inclusive and fair energy transitions*.

Independent science and policy expert for the Open Hydrogen Initiative to develop an open-source carbon intensity toolkit that helps implement the Inflation Reduction Act 45V Hydrogen Production Tax Credit.

Steering committee member for an independent multisectoral US study on PET/polyester circularity (a companion study to the European Union).

Expert panel member and advisor to Enomia and Systemiq on the first systems-level report titled *A Prescription for Change: Advancing Circularity and Decarbonizing Plastics in Healthcare*.

Council member of the Recycling Science Council to provide expertise on environmental and technical performance aspects of advanced recycling technologies.

Thought leader, strategic advisor, expert witness, and strategist for environmental management, sustainability, equitable energy transitions, waste management, ESG, circular economy, climate resilience, and low carbon pathways.

Strategic and visionary senior executive with over 28 years of fair and balanced regulatory, legal, public policy, advocacy, and technical experience across industries and sectors.

¹ Due to late term nomination, the Senate did not act on the nomination in deference to the Trump Administration taking office January 2017.

Diverse portfolio of expertise in industry, finance, academia, government, and international relations, including senior executive positions with a U.S. Government agency, director of a major non-profit trade association, a distinguished fellow at the #1 globally ranked public policy institute, and leading U.S. delegations at the United Nations.

PROFESSIONAL EXPERIENCE

Morgan Stanley Capital International

New York, New York

April 2021-present

Strategist and Advisor, Circular Economy Thematic Index

- Serve as a subject matter expert in defining the scope, composition, and impact criteria for MSCI's Circular Economy Thematic Index, ensuring alignment with evolving market trends, sustainability frameworks, and investor priorities.
- Guide the integration of circular economy principles into financial instruments by identifying key industries, technologies, and companies that contribute to resource efficiency, waste reduction, and sustainable material use.
- Design and refine the methodology for index construction, incorporating quantitative and qualitative assessments to capture the investment potential of circular economy trends.
- Provide regular updates and insights to institutional investors, asset managers, and financial professionals on emerging trends, regulatory developments, and market opportunities within the circular economy landscape.
- Publish research, white papers, and presentations highlighting the financial relevance and long-term value creation potential of circular economy investments.

Baker Institute for Public Policy, Rice University

Houston, TX

July 2018-present

Deputy Director, Center for Energy Studies

Distinguished Fellow, Energy & Sustainability

- Drive strategy development and execution across all Center programs, ensuring alignment with organizational goals and interdisciplinary collaboration.
- Thought leader and strategic advisor for C-suite executives, investors, and policymakers on global and domestic issues of energy transitions, sustainability, circular economy, plastics, climate resiliency, alternative materials, low carbon pathways, life cycle management, supply chains, waste management, trade, and environmental justice.
- Engage with stakeholders to develop and communicate policy recommendations to domestic and international policymakers, including the G20, UN, U.S. Congress, White House, and foreign dignitaries.
- Steering Committee Member of Rice University's Sustainability Strategy.
- Governing board member of the Rice Sustainability Institute.
- Strategist of Rice University's Carbon Hub, a global partnership of industry, academia, governments, institutes, and non-profit organizations centered on science and technologies for reducing global emissions and accelerating a sustainable transition to alternative energy and materials.

- Co-founder of the Center of Excellence for Resilience of Industrial & Energy Infrastructure (CERISE), a globally collaborative research center at Rice University that focuses on the sustainability and resilience of energy industries and the effects of natural disasters and a changing climate.
- Lead the Center for Energy Studies Sustainability Initiative, a nonpartisan partner and central resource to understand the risks, tradeoffs, and opportunities of the global sustainability transition and to develop, implement, and evaluate sustainability strategies across life cycles and multiple geographies.
- [Authored over 50 publications](#) on sustainability, plastics, circularity, e-waste, waste management, carbon nanotubes, and hydrogen.
- Professor for Rice University's Master of Energy Transitions and Sustainability.

*U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration
Washington, D.C.*

July 2015-July 2018

Deputy Associate Administrator

- Provided executive oversight and strategic planning on all operations and resources of the agency with a budget of \$76M by leading multidisciplinary departments: (1) International and Domestic Policy and Rulemaking, (2) Field Operations and Enforcement, (3) Sciences, Engineering, and R&D, (4) Outreach, Training, and Grants, (5) Data Analysis, Statistics, and Risk Management, (6), Accident Investigations, and (7) Budget and Administrative Services.
- Diplomatically shaped, influenced, and negotiated U.S. and international policy interests to facilitate trade, create circular and sustainable supply chains for critical goods, ensure environmental protection, and improve responsible access to foreign markets that builds international continuity.
- Created and managed a data-driven, risk-based national enforcement and compliance program and provided executive direction to national field offices to ensure U.S. interests in national security, environmental protection, sustainability, and public safety.
- Advisor to Administrator and political teams on regulatory, legislative, and policy impacts and short and long-range planning and priorities.
- Advanced emotional intelligence, political acumen and awareness of sensitive issues to effectively communicate with diverse constituencies in a highly politicized, often polarized, transitioning environment.
- Interfaced with Congress, the White House, other executive agencies, nonprofit and private sector organizations, foreign governments, and international organizations to ensure the agency carried out a safe, responsible and sustainable program that supported domestic and international commerce of hazardous materials.

American Chemistry Council

Washington, D.C.

July 2012-July 2015

Director, Regulatory & Technical Affairs

- Offered unparalleled leadership in objective, science-driven policy direction and support for board-level committees and member companies regarding chemical safety, environmental management, environmental justice, resource conservation and recovery, process safety, corporate sustainability, hazardous materials and waste management, Superfund, and worker health and safety.

- Expert knowledge of federal legislative and budget processes with demonstrated level of experience managing high-profile projects, building alliances, and interfacing with state, federal, and international policy leaders.
- Developed multiyear strategic and budgetary plans that accounted for human, financial, and informational resources while supporting organizational vision and priorities within and outside the organization.

University of California San Diego (UCSD)

La Jolla, CA

May 2003-July 2012

Facility Manager, Environmental Management Facility, Operations & Logistics

- Independently managed the operations and logistics of the hazardous waste, remediation, recycling, and energy recovery facility, including budget, human capital, and financial planning; oversight, design, and implementation of policies; permit and licensing; and regulatory compliance.
- Served as the campus compliance expert to ensure adherence with environment, health, and safety programs for local, state, federal, and international requirements.
- Oversaw the development, design, and delivery of compliance training courses to diverse audiences across all levels of an organization that distilled technical information to assist the campus community in understanding regulatory obligations.
- Manager of the UCSD Hazardous Materials and Emergency Response Team, overseeing the maintenance of training, equipment, and readiness of emergency incidents.
- Incident commander for managing and responding to events involving chemical, biological, and radioactive materials spills or releases.
- Instituted quality management systems to improve university programs: community environmental stewardship, radioactive and hazardous waste management, green chemistry, energy recovery, and chemical recycling.
- Successfully introduced and implemented an employee mentorship program to foster a positive, inclusive, team-oriented environment, increase employee retention, and improve workforce productivity.

Clean Harbors Environmental Services, Inc.

San Diego, CA

August 1997-May 2003

Contract Manager/Senior Field Chemist

- Proficient in assessing, inspecting, and auditing petrochemical, chemical, and specialty chemical plant operations and processing facilities, ports of entry, transportation hubs, including evaluating the regulatory and operational obligations of new construction, reengineered equipment and processes.
- Resourcefully developed and directed strategies, policies, and procedures for effective hazard mitigation in response to chemical, biological, and radioactive emergencies.
- Managed and completed all phases of hazardous waste operations including field sampling/testing, characterization, packing, and preparing shipments for transportation, treatment, and disposal.

- Directed, coordinated, and fully supervised field service projects such as clandestine drug labs, reactive materials management, Superfund remediation, and laboratory decommissioning from conceptualization to closure, estimating time, materials, and resources required to complete a job.
- Performed environmental protection and hazardous waste remediation projects including controlled chemical destruction, detonation, and disposal of toxic, explosive, and shock-sensitive hazardous materials.

EDUCATION

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| Bachelors of Science: Conservation Biology; Zoology & Animal Physiology Minor: Chemistry, Physics | University of Wisconsin Madison, WI | August 1997 |
| Institute of Environmental Studies Certificate | University of Wisconsin Madison, WI | August 1997 |
| Master of Education: Certification in Physics & Chemistry | National University La Jolla, CA | July 2008 |
| Certified Hazardous Materials Manager, Master Level #15426 | Institute of Hazardous Materials Management | May 2010 |
| Master of Applied Science: Environmental Policy and Management | University of Denver Denver, Colorado | June 2012 |
| Doctorate: Law and Public Policy | Northeastern University Boston, MA | September 2016 |

Select Publications

- “Recycling Can Mean a Future for All Plastics,” published as part of “Chemical Recycling: More Pollution? Or a Sustainability Solution for Plastic?,” Environmental Law Institute, The Environmental Forum, May-June 2025.
- “Recalibrate Sustainability,” Energy and Resilience: Policy Briefs 2025, July 2025.
- Rachel A. Meidl, “Sustainability and Life Cycle Assessments: Occam’s Razor Does Not Apply,” Rice University’s Baker Institute for Public Policy, February 20, 2025, <https://doi.org/10.25613/ZA56-MG53>.
- Rachel A. Meidl, “Reimagining Sustainability: A Systems Approach for a Resilient Future” (Houston: Rice University’s Baker Institute for Public Policy, August 22, 2024), <https://doi.org/10.25613/VZZG-QA38>.
- Meidl RA., Medlock K. The Pride and Prejudice of Sustainability: Rethinking Sustainability from a Systems Perspective. Rice University's Baker Institute for Public Policy; 2023 November. Available from: <https://doi.org/10.25613/20CH-3Z48>
- Rachel A. Meidl, “Toward Sustainability: Understanding the Challenges” (Houston: Rice University's Baker Institute for Public Policy, June 18, 2024), <https://doi.org/10.25613/TZG1-WR63>.
- Meidl RA., Heller D, Goerzen D, Kim M. Human and environmental safety of carbon nanotubes across their life cycle. *Nature Reviews Materials*. 9(1), 63-81, 2024.

- Meidl R. Hierarchical biopolymer-based materials and composites. *Journal of Polymer Science*. 2023 April 11. Available from: <https://doi.org/10.1002/pol.20230126>
- Meidl RA. Schrödinger's Cat Paradox: Carbon Is the Enemy. *Carbon Is Not the Enemy*. Rice University's Baker Institute for Public Policy; 2023. Available from: <https://doi.org/10.25613/5ED9-S212>
- Meidl RA., Goerzen D, Heller D. *Balancing Safety and Innovation: Shaping Responsible Carbon Nanotube Policy*. Rice University's Baker Institute for Public Policy; 2024.
- Meidl RA.. *Closing the Loop on the World's Fastest-growing Waste Stream: Electronics*. Rice University's Baker Institute for Public Policy; 2023.
- Meidl RA, Foss M, Li J. *A Call to Action for Recycling and Waste Management Across the Alternative Energy Supply Chains*. Baker Institute Report no. 03.02.22. Rice University's Baker Institute for Public Policy; 2022.
- Meidl RA. *Transitioning to a Circular Economy: Opportunities for Growth and Societal Transformation*. MSCI, Inc.; 2023. Available from: <https://www.msci.com/documents/1296102/28401354/Thematic+Insight+Circular+Economy.pdf>
- Meidl RA. *The Future of Plastics Sustainability: Advanced Recycling*. Policy brief: Recommendations for the New Administration. Rice University's Baker Institute for Public Policy; 2021.
- "[Human and Environmental Safety of Carbon Nanotubes Across Their Life Cycle](#)," *Nature Reviews Materials*, November 23, 2023.
- "[Transitioning to a Circular Economy: Opportunities for Growth and Societal Transformation](#)," MSCI, 2023.
- "[Houston can be a leader in a circular plastics economy](#)," *Houston Chronicle*, May 7, 2021.
- Heller, D. A., Jena, P. V., Pasquali, M., Kostarelos, K., Delogu, L. G., Meidl, R. E., ... & Yudasaka, M. (2020). Banning carbon nanotubes would be scientifically unjustified and damaging to innovation. *Nature Nanotechnology*, 15(3), 164-166.
- "[Ban Plastic Straws and Bags? Then What?](#)," *Houston Chronicle*, December 13, 2018.