DEBORAH D. STINE, Ph.D.

ADDRESS

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LinkedIn : https://www.linkedin.com/in/deborahstine/

EDUCATION

Ph.D.
PUBLIC ADMINISTRATION/ POLICY ANALYSIS

Public Administration, American University, 1992
Specialization: Science & Technology Policy with emphasis on Policy Analysis, Public Administration, and American Politics
Dissertation Topic: International Environmental Decisionmaking

M.B.A.
MANAGEMENT

Business Administration, Corpus Christ State University (now Texas A&M at Corpus Christi), 1988

B.S.
ENGINEERING

Mechanical and Environmental Engineering (Double Major), University of California, Irvine, 1982

EXPERIENCE

PRESIDENT, DEBORAH D. STINE, PHD LLC CONSULTING

10/18 to present

- Freelance consultant, policy analyst, writer, video producer, professor, teacher, trainer, and study director focused on translating science and technology to policymakers, the public, students, and investors AND translating policymakers, the public, students, and investors to the science and technology community.
- Illustrative Work
  - ◊ Conducted study to identify the perception of manufacturing and workplace issues by collecting information via focus groups of non-degreed potential workers to identify barriers to them seeking employment in the manufacturing sector for a non-profit organization.
  - ◊ Analysis of interagency programs to identify best practices for the establishment, management, and assessment of these programs for a potential carbon dioxide removal research and development program for a non-profit organization.
  - ◊ Development of an interdisciplinary research and education strategy for a state university.
  - ◊ Review of draft policies for shale gas development for a state government agency.
  - ◊ Analysis of science, technology, and innovation programs at federal agencies for a nongovernmental organization.
  - ◊ Synthesis of white papers and recommendations to an incoming U.S. President's transition team for a nongovernmental organization.
  - ◊ Descriptive analysis of history of U.S. federal science and technology agencies and their economic impact.
  - ◊ Workshops for students on communicating their research to the public and policymakers, and in how to conduct public policy analysis and advocacy for non-governmental organizations, student clubs, colleges and universities.

CLIENTS INCLUDE:

ENERGY FUTURES INITIATIVE

CATALYST CONNECTION

ENERGY INNOVATION CENTER

UNIVERSITY OF TEXAS, TYLER

CENTER FOR THE STUDY OF CONGRESS AND THE PRESIDENCY

STATE OF ILLINOIS

PROFESSOR OF THE PRACTICE, ENGINEERING AND PUBLIC POLICY

ASSOCIATE DIRECTOR FOR POLICY OUTREACH, SCOTT INSTITUTE FOR ENERGY INNOVATION

CARNEGIE MELLON UNIVERSITY

9/12 to 10/18

- **Teaching Activities:** Energy Innovation and Entrepreneurship; Emerging Technology Non-Market Factor Analysis; Innovation Policy and Processes; Science and Technology Policy, Analysis, and Processes; Shale Gas Policy; Environmental Policy and Politics; Engineering and Public Policy Project Course (Natural Gas Vehicles – Spring 2013); Policy Analysis for Engineers (online educational module with engineering and energy case studies)
- **Research Interests:** Non-market analysis; Energy innovation and entrepreneurship; Science, technology, and innovation policy advice for policy makers; Energy and environmental policy. Received NSF grant.
- **Scott Institute for Energy Innovation:** Develop policymaker guides and policymaker and public education videos; Develop and host roundtables, workshops, and major events related to energy and environmental policy. Illustrative Activities:
    - Managing Variable Energy Resources to Increase Renewable Electricity's Contribution to the Grid (co-authored policymaker guide and book)
    - Advancing the Next Generation of Environmental Practices for Shale Development: Workshop Deliberations and Recommendations (jointly with the Nature Conservancy)
    - Energy Bite – a one-minute radio show/podcast
    - Policymaker/public videos on energy and environmental issues based on peer-reviewed research.
        - Are you REALLY saving the environment investing in a wind farm or solar power plant?
        - Are You REALLY Saving the Environment with Your Hybrid or Plug-in Car?
        - Energy Storage and Conversion: The Next Generation
        - Chemistry in a New Light: Solar Fuels
        - What do YOU need to know about Climate Change?
    - Capitol Hill seminars on the topics of the policymaker guides, videos, and other media such as Pipelines, Trucks, Buses and Automobiles: Where, When, Which?.

EXECUTIVE OFFICE OF THE PRESIDENT, WHITE HOUSE OFFICE OF SCIENCE AND TECHNOLOGY POLICY

EXECUTIVE DIRECTOR, PRESIDENT'S COUNCIL OF ADVISORS ON SCIENCE AND TECHNOLOGY (PCAST)

7/09 to 9/12

- Lead, coordinate, and advise groups of highly trained scientists and engineers to develop reliable, comprehensive, effective, objective, and authoritative science and technology policy analyses for the President of the United States
- Established Obama Administration PCAST study and report development process and public "face" including webpage design and video webcasting
- Apply scientific, engineering, economic, and policy analysis techniques
- Provide advice and respond to questions from White House and Congressional staff regarding PCAST reports, study process, and administrative procedures
- Supervise professional and support staff.
- PCAST Reports & Activities:

Energy and Environmental Policy: *Report to the President on Accelerating the Pace of Change in Energy Technologies Through an Integrated Federal Energy Policy; Agricultural Preparedness and the Agriculture Research Enterprise; Sustaining Environmental Capital: Protecting Society and the Economy*

Innovation Policy: *Report to the President on Ensuring American Leadership in Advanced Manufacturing: Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth;* "Golden Triangle" workshop on the intersection of nanotechnology, biotechnology, and information technology; *Immediate Opportunities for Strengthening the Nation's Cybersecurity (early stages)*

Research Policy: *Report to the President and Congress on the Third Assessment of the National Nanotechnology Initiative; Designing a Digital Future: Federally Funded Research and Development Networking and Information Technology; Report to the President Report to the President - Transformation and Opportunity: The Future of the U.S. Research Enterprise.*

Science, Technology, Engineering, and Mathematics (STEM) Education Policy: *Prepare and Inspire: K-12 Education in Science, Technology, Engineering, and Math (STEM) for America's Future; Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics*

Health Policy: *Realizing the Full Potential of Health Information Technology to Improve Healthcare for Americans; Report to the President on Reengineering the Influenza Vaccine Production Enterprise to Meet the Challenges of Pandemic Influenza; Report to the President on U.S. Preparations for 2009-H1N1 Influenza.*

CONGRESSIONAL RESEARCH SERVICE (CRS)

SPECIALIST, SCIENCE AND TECHNOLOGY POLICY

8/07 to 7/09

- Develop reliable, comprehensive, effective, objective, and authoritative reports and policy analysis on science & technology policy for members of Congress and their staff.
- Respond to questions from and provide guidance to members of Congress and their staff.
- Apply scientific, engineering, economic, and policy analysis techniques.

Reports & Activities completed: *President's Office of Science and Technology Policy; America COMPETES Act (overview and budget perspectives); Advanced Research Projects Agency – Energy (ARPA-E); U.S. Science And Technology Workforce; Science, Technology, And American Diplomacy; The Manhattan Project, The Apollo Program, And Federal Energy Technology R&D Programs; U.S. Civilian Space Policy Priorities: Reflections 50 Years After Sputnik; Science and Technology Policy Primer; Capturing CO2 from Coal-Fired Power Plants: Challenges for a Comprehensive Strategy (co-authored); Federal Science and Engineering Workforce; Federally-Funded Innovation Inducement Prizes; Hiring and Pay Authorities for Federal Scientific and Technical (S&T) Personnel*

NATIONAL ACADEMY OF SCIENCES, ENGINEERING, AND MEDICINE (NASEM)

ASSOCIATE DIRECTOR, COMMITTEE ON SCIENCE, ENGINEERING, AND PUBLIC POLICY

DIRECTOR, OFFICE OF SPECIAL PROJECTS

DIRECTOR, MIRZAYAN SCIENCE AND TECHNOLOGY POLICY GRADUATE FELLOWSHIP PROGRAM

8/89 to 8/07

- Develop reliable, comprehensive, effective, objective, and authoritative studies and reports in the area of science & technology and environmental & energy policy.
- Apply scientific, engineering, economic, and policy analysis techniques
- Lead, coordinate, and advise a group of highly trained scientists and engineers to develop consensus positions on policy issues.
- Direct dissemination activities including press conferences, testimony to Congress, and respond to questions from congressional staff and national press.
- Supervise professional and support staff.

- Reports & Activities:

Science and Technology Policy*: Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future; Ensuring the Best Presidential and Federal Advisory Committee Science and Technology Appointments; Setting Priorities Research Facility Projects supported by the National Science Foundation; Facilitating Interdisciplinary Research; Science and Security in an Age of Terrorism; Scientific and Medical Aspects of Human Reproductive Cloning; Issues for Science and Engineering Researchers in a Digital Age; Observations on the Federal Science and Technology Budget; Science and Technology in the National Interest: The Presidential Appointments Process; On Being a Scientist: Responsible Conduct in Research; The Management and Cost of Laboratory Waste Associated with the Conduct of Research; Forces Shaping the U.S. Academic Engineering Research Enterprise; Advanced Research Instrumentation.*

Evaluation of Research: *Implementing the Government Performance and Results Act for Research: A Status Report; Research and the Government Performance and Results Act; Experiments in International Benchmarking of US Research Fields—Mathematics, Materials Science and Engineering Research, and Immunology*; *An Evaluation of NSF's Science and Technology Centers Program.*

Human Resources: *Enhancing the Postdoctoral Experience for Scientists and Engineers: Advisor, Teacher, Role Model, Friend: Mentoring Students in Science and Engineering; Careers in Science and Engineering: A Student Guide to Grad School and Beyond; Reshaping the Graduate Education of Scientists and Engineers;* Convocations on Postdoctoral and Doctoral Science and Engineering Education.

Special Projects: *Preparing for the 21st Century* (Presidential transition white papers for G.H.W. Bush and Clinton Administrations*)*; Christine Mirzayan National Academies Science and Technology Fellowship Program.

Environmental and Energy Policy: *Linking Science and Technology to Society's Environmental Goals*; *Science and Judgment in Risk Assessment; Improving the Environment: An Evaluation of DOE's*

Environmental Management Program; A Review of the Biomonitoring of Environmental Status and Trends Program at the Dept. of Interior; Building Consensus through Risk Assessment and Management of the Department of Energy's Environmental Remediation Program; Corporate Environmental Practices: Climbing the Learning Curve; A Biological Survey for the Nation; Policy Implications of Greenhouse Warming: Report of the Mitigation Panel; *Applied Environmental Research and Development*

CHEMICAL MANUFACTURERS ASSOCIATION (NOW AMERICAN CHEMISTRY COUNCIL)

AIR ISSUES MANAGER

4/88 to 8/89

- Directed and coordinated the development of scientific and technically based studies, reports, testimony, software, and videotapes that focused on methods of preventing pollution of hazardous air pollutants.
- Negotiated consensus positions on environmental policy issues.
- Initiated development of a regulatory negotiation.
- Developed an in-depth understanding of the legislative and regulatory process.
- Provided technical assistance to congressional, federal, and industrial facility staff.
- Report completed: *Guidance for Estimating Fugitive Emissions.*

TEXAS AIR CONTROL BOARD (NOW TX COMMISSION ON ENVIRONMENTAL QUALITY)

AIR POLLUTION ENGINEER

12/83 to 4/88

- Investigated a variety of manufacturing environments to determine compliance with federal and state environmental regulations.
- Evaluated permit applications before construction and after start-up.
- Specialized in inspections of facilities emitting hazardous air pollutants.
- Investigated citizen complaints and provided public information.
- Communicated with congressional and state legislative staffs.
- Wrote effective, objective, and comprehensive technical reports.

BROOKS AIR FORCE BASE

MATHEMATICIAN

3/83 to 12/83

- Member of scientific team that studied the impact of Agent Orange (dioxin) on Vietnam veterans.
- Conducted statistical analysis of epidemiology data using SAS software.
- Applied and evaluated quantitative techniques in the area of environmental policy.
- Developed the data layout for a complex datafile and a validation procedure.
- Wrote computer programs to derive variables, perform data validation, manipulate data into proper format for analyses.

ADDITIONAL EXPERIENCE

ADJUNCT PROFESSOR UNIV. OF MARYLAND AMERICAN UNIV.

9/91 to 5/93

- Taught global environmental policy class to graduate students in executive program at the U.S. Environmental Protection Agency for University of Maryland.
- Taught environmental politics and policy to undergraduate and graduate students at American University.
- Designed and developed classes to cover technical, political, and policy aspects of domestic, global, and international environmental issues

DIRECTOR
LEAGUE OF WOMEN VOTERS

3/85 to 3/88

- Served as member of board of directors of League of Women Voters of Texas.
- As President of a local League managed 150 members.
- Lobbied on environmental and national security issues at all levels of government.
- Spoke at press conferences, public meetings, and public hearings.
- Hosted a televised public service program and a mayoral debate.
- Analyzed, interpreted, and evaluated governmental policy.

ENERGY CONSULTANT
SOUTHERN CALIFORNIA GAS COMPANY

6/81 to 9/81

- Conducted energy efficiency inspections of commercial and industrial facilities.
- Wrote technical reports computing savings and communicated information to utility customer.

PROFESSIONAL CERTIFICATIONS, AWARDS, AND ACTIVITIES

VentureWell Faculty Scholar, 2017
Women in Energy Leadership Award, 2017
Member At Large Representative, American Association for the Advancement of Science Section on Societal Aspects of Science and Engineering, 2017-2018
Most Innovative Paper, American Society of Engineering Education, Innovation and Entrepreneurship Division, 2016
Carnegie Science Center Science Communicator Award, 2016
National Academies President's Award—Highest Staff Award given by National Academy of Sciences/National Academy of Engineering, 2007.
Staff Achievement Award for Career Contributions to National Academy of Sciences/National Academy of Engineering, 2006.
Testimony to Canadian House of Commons on Mitigation of Greenhouse Gas Emissions, 1992.
Mitchell International Prize for Sustainable Development—Young Scholar' s Award for research on international environmental issues,1991.
National Academy of Sciences Staff Achievement Award for report on Policy Implications of Greenhouse Warming, 1991.
Professional Engineering License, State of Texas, 1990.
Pardoen Award for outstanding contributions as a mechanical engineering student to students, engineering school, and community, 1982.
Member: American Association for the Advancement of Science, Association for Public Policy Analysis and Management
Clearance: Top Secret (TS)/Sensitive Compartmentalized Information (SCI). 2010

PUBLICATIONS, VIDEOS, AND PRESENTATIONS

Articles

Realistic Mitigation Options for Global Warming (with Rubin et al.), Science, July 10, 1994.

Stine, D. (2014). The Roles and Influence of Congressionally-Chartered Honorific Organizations on Science, Technology, and Innovation Policy Decision-making in the United States. *IGCC Dialogue on Comparing U.S. and Chinese Approaches to Science, Technology, and Innovation (STI) Policy Decision-making*. San Diego: University of California, San Diego.

Stine, D., Apt, J., & Jaramillo, P. (2013). *Managing Variable Energy Resources to Increase Renewable Electricity's Contribution to the Grid*.

Stine, D., VanBriesen, J. M., & Casman, E. A. (2013). *Shale Gas and the Environment: Critical Need for a Government–University–Industry Research Initiative*.

Books

Apt, J., Jaramillo, P., Dowds, J. D., Dworkin, M., Fertig, E., Handschy, M., Hines, P., Hittinger, E., Katzenstein, W., Kirby, E., Lueken, C., Lueken, R., Mauch, B., Moore, J., Morgan, M. G., Nordhaus, R. R., Oates, D. L., Peterson, S., Rose, S., Stine, D., Weis, A., & Yaffe, D. (2014). *Variable Renewable Energy and the Electricity Grid* (pp. 368).

Videos

Stine, D., & Whitacre, J. *Energy Storage and Conversion: The Next Generation*.

Stine, D., & Michalek, J. J. (2015). *Are You REALLY Saving the Environment with Your Hybrid or Plug-in Car?*.

Stine, D., Lima De Azevedo, I. M., Fuchs, E. R. H., & Michalek, J. J. (2015). *Is Manufacturing in China a Wise Decision for a Small, Innovative US Company?*. YouTube.

Stine, D., & Bernhard, S. (2015). *Chemistry in a New Light: Solar Fuels*. YouTube.

Stine, D., & Lima De Azevedo, I. M. (2015). *Are you REALLY saving the environment investing in a wind farm or solar power plant?*. YouTube.

Stine, D., & Lima De Azevedo, I. M. (2014). *Comparing the Magnitude of Simulated Residential Rebound Effect Abstract*. YouTube.

Editorial Contributions to *The Hill*

Stine, D., & Cohon, J. (2016). *When it comes to shale and the environment, a focus on infrastructure, not just fracking*. Washington, DC: The Hill.

Stine, D., Zhai, H., Fischbeck, P., & Anderson, J. (2015). *How can states respond to EPA's power plant carbon reduction goals?*. Washington, DC: The Hill.

Stine, D., & Zhai, H. (2015). *Which coal-fired plants can use carbon capture to meet EPA goals?*. Washington, DC: The Hill.

Stine, D. (2015). *Are we doing better today than on the first Earth Day?*. Washington, DC: The Hill.

Stine, D. (2015). *Proposed next steps for the House Republican energy framework*. Washington, DC: The Hill.

Stine, D., & Gellman, A. J. (2014). *Think nationally, act regionally to advance potential of shale gas*. Washington, DC: The Hill.

Stine, D. (2014). *Public opinion on climate change: Is the glass half-full or half-empty for policymakers?*. Washington, DC: The Hill.

Stine, D. (2014). *Why Congress should fund social science*. Washington, DC: The Hill.

Presentations Given

Stine, D., Society of Women Engineers National Meeting - Minneapolis, "Public Policy Analysis and Advocacy for Engineers," Pittsburgh, PA.

Stine, D., Energy Innovation and Entrepreneurship: Is it Different?, Austin, TX; VentureWell Open, (March 13, 2018).

Stine, D., Engaging Scientists and Engineers in Public Policy, Keynote Address, Washington, DC (March 2, 2018)

Stine, D., Facilitating Interdisciplinary Research, University of Texas-Tyler, Tyler, TX (February 15, 2018).

Stine, D., Society of Women Engineers WE Local Conference - Pittsburgh, "Public Policy Analysis and Advocacy for Engineers," Pittsburgh, PA. (February 17, 2017).

Stine, D., Washington University St Louis, "What happens to the influence of science once it leaves the bench? What are the ethics of incorporating research into science policy?," St Louis, MO. (February 10, 2017).

Stine, D., American Society of Engineering Education, "Public Policy Analysis for Engineers," New Orleans, LA. (June 27, 2016).

Stine, D., American Society of Engineering Education, "New Technology Commercialization: Public Policy Strategies," New Orleans, LA. (June 26, 2016).

Stine, D., National Academy of Engineering (NAE) Frontiers of Engineering Education, "Public Policy Analysis for Engineers," Irvine, CA. (October 25, 2015).

Stine, D., Gordon Research Conference Science and Technology Policy, "Systems Analysis," New Hampshire. (August 10, 2014).

Stine, D., IGCC Dialogue on Comparing U.S. and Chinese Approaches to Science, Technology, and Innovation (STI) Policy Decision-making, "The Roles and Influence of Congressionally-Chartered Honorific Organizations on Science, Technology, and Innovation Policy Decision-making in the United States," San Diego, CA. (August 2013).

SERVICE

Major Activities in Professional Societies/Journals

- Governing Board, **The Journal of Science Policy and Governance (JSPG)**, 2019-2020
- AAAS, Member, Nominating Committee, Societal Impacts of Science and Engineering (Section X), 2017-2020
- Member, Women in Academia Committee, Society of Women Engineers

Review Activities: Fellowship and Scholarship Programs

- National Defense Science and Engineering Graduate Fellowship Program
- National Science Foundation Graduate Research Fellowship Program
- Association of Women in Science Scholarship Program
- AAAS Congressional and Executive Branch Fellowship Programs
- American Society of Engineering Education

Review Activities: Journal Articles

- Science and Public Policy
- Space Policy

Review Activities: Book Manuscripts

- MIT Press
- University of Pittsburgh Press
- Cambridge Press
- Congressional Quarterly Press

Review Activities: Committee Reports

- South African Shale Gas Scientific Assessment

Review Activities: Published Book Opinion Pieces

- Chemistry World.
- Science and Public Policy.

Department Service

- Graduate Education Committee, Engineering and Public Policy

University Service

- Project Olympus Startup Company Advisor
- Faculty Senate Representative, Engineering and Public Policy

Government Committees, Civic Appointments, Board Memberships

- Science of Science Policy, National Science Foundation.
- Science Communicator Award Selection Committee, Carnegie Science Center.

Symposium, Workshop, and other Outreach Activities Organizer

- Energy Week 2016
- Energy Week 2017
- Nature Conservancy Partnered Event: Advancing the Next Generation of Environmental Practices for Shale Development
- National Academy of Engineering Partnered Event: Shale Gas Development

GRANTS

National Science Foundation, Science of Science Policy Videos for Policymakers (2018)

Wells Fargo Foundation, Establishment of a Center for Cleantech Entrepreneurial Excellence (C2E2) (2018)

VentureWell, Establishment of an Energy Hackathon for First Year Students at Carnegie Mellon (2018)

VentureWell, Research and Development of a new Class on Energy Innovation and Entrepreneurship (2017)

Numerous grants while at the National Academies of Sciences, Engineering, and Medicine for 18 years.