

## Frank N. Laird

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Denver, CO 80208-0280

### EDUCATION

1985 Ph.D., Political Science, Massachusetts Institute of Technology, Cambridge, MA  
1975-76 Graduate student in solid state physics, Edinburgh University, Scotland  
1975 BA (with Honors), Physics, Middlebury College, Middlebury, VT

### PROFESSIONAL EXPERIENCE

2004, July-December Acting Associate Dean, Josef Korbel School of International Studies ,  
University of Denver, Denver, CO  
1994-present Associate Professor (with tenure) of Technology and Public Policy, Josef Korbel  
School of International Studies , University of Denver, Denver, CO  
1987-94 Assistant Professor of Technology and Public Policy, Josef Korbel School of  
International Studies, University of Denver, Denver, CO  
1985-87 Research Fellow, Environmental Policy, Interdisciplinary Programs in Health, School of  
Public Health, Harvard University, Boston, MA  
1985 Consultant, Science Policy, to Sigma Xi, Society for Scientific Research, Research Triangle  
Park, NC (formerly located in New Haven, CT)

### GRANTS

2006-08 NSF, \$89,760, Comparison of US and German Renewable Energy Policy  
1998-00 NSF, \$98,102, Institutional Learning and Renewable Energy Policy  
1991-92 NSF, \$47,728, Value Conflicts and Technological Policies: The Case of Solar Energy  
1988-89 GTE Foundation, \$4000 to produce a lecture series on Technology and Values

### BOOK

*Solar Energy, Technology Policy, and Institutional Values*, Cambridge University Press, 2001.

(Finalist for the 2004 Don K. Price Award for the best book in science and technology policy or politics, awarded by the Science, Technology, and Environmental Politics section of the American Political Science Association.)

ARTICLES AND CHAPTERS

Laird, Frank N. and Christoph Stefes, "The diverging paths of German and U.S. policies for renewable energy: Sources of difference." *Energy Policy* 37 (7) (July 2009): 2619-2629.

Laird, Frank N. "A Full-Court Press for Renewable Energy." *Issues in Science and Technology* 25 (2)(Winter 2009): 53-56.

Laird, Frank N. "Learning Contested Lessons: Participation Equity and Electric Utility Regulation." *Review of Policy Research* 25 (5) (Fall 2008): 429-448.

Laird, Frank N. "Problems of governance of nanotechnology," *Nanotechnology: Societal Implications II: Individual Perspectives*, Mihail C. Roco and William Sims Bainbridge, eds. (Dordrecht, The Netherlands: Springer, 2007): 207-210.

Laird, Frank N. "Total Truth and the Ongoing Controversy Over the Teaching of Evolution," *Perspectives: Consortium on Science, Policy and Outcomes* (Fall 2006). Available from <http://www.cspo.org/home/perspectives/index.htm>

Laird, Frank N. Entries on "Alternative Energy" and "Democracy" in *Encyclopedia of Science, Technology, and Ethics*, edited by Carl Mitcham (Macmillan, 2005).

Laird, Frank N. Entry on "Energy Systems" (co-authored with Edward J. Woodhouse) in *Oxford Encyclopedia of Science, Technology, and Society* (Oxford University Press, forthcoming).

Laird, Frank N. "Constructing the Future: Advocating Energy Technologies in the Cold War," *Technology and Culture* 44 (1) (January 2003): 27-49.

Laird, Frank N. "Just Say No to Greenhouse Gas Emissions Targets," *Issues in Science and Technology* 17 (2) (Winter 2000-2001): 45-52.

Laird, Frank N. "Rethinking Learning," *Policy Currents* 9, No. 3-4 (November 1999):3-7.

Laird, Frank N. Entries on Farrington Daniels, Amory B. Lovins, Paley Commission, Soft Energy Paths, and the Solar Energy Research Institute, in Robert Paehlke, ed. *Encyclopedia of Conservation and Environmentalism* (New York: Garland Publishing, 1995).

Laird, Frank N. "Information and Disaster Prevention: Lessons from Bhopal," in Sheila Jasanoff, ed., *Learning From Disaster* (Philadelphia: University of Pennsylvania Press, 1994): 204-224.

Laird, Frank N. "Participatory Analysis, Democracy, and Technological Decision Making," *Science, Technology and Human Values* 18 (Summer, 1993): 341-361.

Laird, Frank N. "Participating in the Tension: A Response to Guston," *Social Epistemology* 7 (January 1993): 35-46

Laird, Frank N. "Persistent Issues Meet Perennial Questions: STS and the Disciplines," in Sheila Jasanoff, ed., *The Outlook for STS, Report on an STS Symposium*, Department of Science and Technology Studies, Cornell University, January 1992, pp. 115-124.

Laird, Frank N. "Political Science, Policy, and Technology," *The Weaver of Information and Perspectives on Technological Literacy* 8 (Spring 1990): 4-5.

Laird, Frank N. "Technocracy Revisited: Knowledge, Power, and the Crisis in Energy Decision Making," *Industrial Crisis Quarterly* 4 (January 1990): 49-61.

Laird, Frank N. "Risk Assessment and Occupational Health: Conceptual Problems," *Annals of the New York Academy of Science* vol. 572, Philip Landrigan and Irving J. Selikoff, Eds. (New York: New York Academy of Sciences, 1989).

Laird, Frank N. "The Decline of Deference: The Political Context of Risk Communication," *Risk Analysis* 9 (December 1989): 543-550.

Laird, Frank N. "Technology and the International System: Our Approaches and Our Classrooms," *Science, Technology, and Politics* 3 (1) (August 1988): 23-26.

Markert, T., Winkler, P.F., Laird, F.N., et al., "A Catalog of the Results of the OSO-7 MIT X-ray Experiment," *Astrophysical Journal* Supplement Series (March 1978).

Winkler, P.F., and Laird, F.N., "Detection of X-ray Emission From the Supernova 1006 A.D." *Astrophysical Journal (Letters)* 24 (15 March 1976): L111-L114.

#### OTHER PUBLISHING ACTIVITIES

Review of Bradford, Travis, *Solar Revolution: The Economic Transformation of the Global Energy Industry* (MIT Press, 2006) in *Environment* 49 (6) (July/August 2007): 44-45

"Apocalypse Soon: Climate Change, the End of Oil, and the Perils of Limiting Choices," *Ogmius* n. 18 (Winter/Spring 2007). Available at [http://sciencepolicy.colorado.edu/ogmius/archives/issue\\_18/apocalypse\\_soon.html](http://sciencepolicy.colorado.edu/ogmius/archives/issue_18/apocalypse_soon.html).

"The Society Whose Time Had Come," *Solar Today* 19 (4) (July/August 2005): 36-39.

Series of nine columns on renewable energy policy in *Solar Today*, 2002-04.

Report of the Workshop on the Societal Implications of NSET, National Science Foundation, Arlington, VA, December 3-5, 2003

“Institutionalizing Democratic Values in Research Policy,” Report of the NSF Workshop on Research Policy as an Agent of Change, Tucson, AZ, October 9-11, 2003.

“The Rhetoric of Corporate Welfare: A Debate with Robert Reich,” *The American Prospect* No. 40 (September/October 1998): 74-77.

Contributing Editor, *Science, Technology, & Human Values*, 1993-1996

Editorial Board, *Reviews of Policy Research*, 2006-present

### PRESENTATIONS

Frank N. Laird and Christoph Stefes, “Renewable energy in Germany and the United States: Policies and Path Dependency,” *Restructuring Choice: Energy and Social Demand*, Lady Margaret Hall, Oxford University, UK, April 7-9, 2009.

Christoph Stefes and Frank N. Laird, “Path Dependence and Renewable Energy Development in the United States and Germany,” International Studies Association 2009 Annual Meeting, New York City, February 16, 2009.

“State and Society Relations Involved in Shaping the Energy System,” North American Network on Energy and Society, Arizona State University, Tempe, AZ, January 26, 2009

“Power Shortage: Can U.S. Institutions do a Comprehensive Policy for Renewable Energy?” Case Western Reserve University, Cleveland, OH, January 22, 2009

“Changing Technological Systems: Comprehensive Policies for Renewable Energy,” Center for Science and Technology Policy Research, University of Colorado, Boulder, October 13, 2008.

Panelist, Climate Change and Energy Innovation, Corporate Climate Response conference, Chicago, IL, September 22-23, 2008.

“Policy Support of Energy Technology Innovation,” Clean Energy Group Workshop on renewable energy innovation, Washington, DC, May 28-29, 2008.

“U.S. Renewable Energy Policy,” Workshop on Public Values Mapping, Arizona State University, Tempe, AZ, April 11, 2008.

“Changing Big Systems: Barriers to Innovation in Energy Technology,” Gerald R. Ford School of Public Policy, University of Michigan, Ann Arbor, MI, March 31, 2008.

“Barriers to a Sustainable Energy System,” Regional Student Pugwash Conference, Purdue University, West Lafayette, IN, March 21, 2008

“Renewable Energy Advocacy in the 1970s,” Conference on Energy Policy in the 1970s, University of Houston, Houston, TX, November 9-10, 2007.

Frank N. Laird and Christoph Stefes, “Barriers to Transnational Policy Learning: German and US Policy for Renewable Energy,” Presented at the Atlanta Conference on Science, Technology, and Innovation Policy, Georgia Tech, Atlanta, GA, October 20, 2007.

“Competing Values, Institutionalizing Policies: U.S. Energy Policy Since World War II,” Keynote address at the 7th International Summer Academy on Technology Studies “Transforming the Energy System: The Role of Institutions, Interests & Ideas” Deutschlandsberg, Austria, 27 – 31 August 2007, sponsored by the Inter-University Research Centre for Technology, Work and Culture (IFZ) in Graz, Austria.

“Renewable Energy Innovation” and “Regulation and Renewable Energy: Wind Power in Colorado,” Economics, Energy, & the Law: A Program for Federal Judges & Law Professors, Foundation for Research on Economics & the Environment, Gallatin Gateway, MT, July 22-27, 2007.

Frank N. Laird and Christoph Stefes, “Learning From Others: Comparing US and German Renewable Energy Policy,” Presented at the Annual Meeting of the American Solar Energy Society, Cleveland, OH July 8-12, 2007.

“The Policy Complex: Transnational Learning for Renewable Energy,” Hennebach Public Policy Workshop, Colorado School of Mines, November, 17, 2006

“Fighting Evolution, Controlling Education: The Institutional Basis of the Controversy Over Intelligent Design,” Center for Science and Technology Policy Research, University of Colorado, Boulder, CO, September 18, 2006.

“Learning Complex Lessons: Participation and Electric Utility Regulation,” Lecture Series, Center for Science and Technology Policy Research, University of Colorado, Boulder, CO, April 4, 2005

“When Institutions Learn: Contested Knowledge and Energy Policy,” Hennebach Lecture Series, Colorado School of Mines, Golden, CO, March 1, 2005

“Democratic Governance of Science and Technology: Environmental Values at Work,” Science, Technology, and Society/History of Medicine Colloquium Series: Health, Environment, and Justice, University of Michigan, Ann Arbor, MI, January 12, 2004.

“Solar Energy, Technology Policy, and Institutional Values,” Environmental Studies Program, Oberlin College, Oberlin, OH, January 13, 2003.

“Boundary Organizations and Obstacles to Institutional Learning: Examples from Energy Policy,” Prepared for delivery at the Annual Meeting of the Society for Social Studies of Science, Cambridge, MA, November 1-3, 2001.

“Globalization and Environment,” presentation to workshop for environmental journalists, Center For Environmental Journalism, University of Colorado, Boulder, May 2001 and 2000.

“Institutional Learning and New Paradigms in Environmental Science,” Prepared for delivery at the Workshop on New Paradigms in Environmental Science, sponsored by Plurimondi, March 1-3, 2001, Villa Umbra, Pila, Perugia, Italy.

“Contested Knowledge and Institutional Learning: Applications to Renewable Energy Policy,” Prepared for delivery at the 1999 Annual Meeting of the Society for Social Studies of Science, October 28-30, 1999, San Diego, CA.

“Institutional Learning and Development: The Case of Renewable Energy,” Prepared for delivery at the 1999 Annual Meeting of the American Political Science Association, Atlanta, September 2-5, 1999.

“New Technologies, Changing Societies: Thinking About Alternative Resources,” Plenary Keynote Address, 19th symposium on Biotechnology for Fuels and Chemicals, Colorado Springs, CO, May 5, 1997.

“Solar Eclipsed: Technology, Values, and the Dynamics of Public Policy,” University of Colorado, Boulder, March 17, 1994.

“The Sun Also Sets: Political Vision and the Public Construction of Solar Energy Policy,” presented at the 1993 Annual Meeting of the American Political Science Association, September 2-5, Washington, D.C.

“International Organizations and the Environment in the 21st Century,” Meeting of the UN Association, Aurora, CO, June 27, 1992.

With Eduardo Saxe, “Policy, Personnel, and Technological Development in Central America,” Conference on Science and Technology for International Development, Myrtle Beach, SC, November 19-24, 1988.

“Technocracy Revisited: Knowledge and Power in Technical Decisions,” Annual Meeting, American Political Science Association, Washington, D.C. September 1-4, 1988

“Normative Choices in Risk Assessment,” Interdisciplinary Programs in Health Seminar Series, Harvard School of Public Health, Boston, MA, April 8, 1988

“Risk Assessment and the Politics of Analysis,” Science and Public Policy Lecture Series, New York Academy of Sciences, April 6, 1988.

“The Decline of Deference: The Political Context of Risk Communication,” Risk Management Seminar Series, National Research Council, Washington, D.C., March 14, 1988

“Risk Assessment and Occupational Health: Conceptual Problems,” Conference on Occupational Health and Safety, sponsored by the New York Academy of Sciences, Washington, D.C., January 22, 1988

“Technology and the International System: A Symposium,” Annual Meeting, American Political Science Association, Chicago, IL, 1987

### POLICY ACTIVITIES

Consortium on Science Policy and Outcomes, series of workshops on energy policy, Washington, DC, March and April, 2009.

National Commission on Energy Policy, Workshop on renewable energy, Denver, CO, October 2-3, 2008.

Clean Energy Group, Workshop on policy for energy innovation, Washington, DC, May 28-29, 2008.

Senior Fellow, blogger, and consultant, The Breakthrough Institute, Oakland, CA, 2008.

Public Policy Committee, American Solar Energy Society, 1999-present, Chair of Committee, 2002-04.

Board of Directors, American Solar Energy Society, 2002-2004

As a member of the Board, I helped the organization to define its policy direction and approach.

Expert Meeting on Global Accords: Interlinkages between Multilateral Environmental Agreements, sponsored by UN University, 2-3 November 2000, MIT, Cambridge, MA  
Meeting aided in developing position papers by the UN University for upcoming negotiations on interlinkages between MEAs.

### NSF ACTIVITIES

Review Panel, Human and Social Dynamics Program, June 2004.

Review Panel, Societal Implications of Nanotechnology, March 3, 2004.

Invited Participant, NSF Workshop on Societal Implications of Nanotechnology, December 2-5, 2003

Workshop helped to develop the research agenda for the NSF program in societal implications of nanotechnology.

Invited Participant, NSF Workshop on Research Policy as an Agent of Change, hosted by the University of Arizona, Tucson, AZ, October 9-11, 2003.

Workshop aided NSF in developing research agenda for the Agents of Change component of the Human and Social Dynamics program.

Review Panel, Ethics and Values in Science Program, 1993-1996

#### AFFILIATIONS WITH SCIENCE AND TECHNOLOGY POLICY CENTERS

Senior Fellow, Breakthrough Institute, Oakland, CA, 2008

Consultant, Center for Nanotechnology and Society, Arizona State University, 2005-present

Faculty Affiliate, Center for Science and Technology Policy Research, University of Colorado, Boulder, CO, 2001-present

Academic Advisory Board and Senior Faculty Associate, Center for Science, Policy, and Outcomes, Arizona State University, 1998-2003.

#### OTHER WORKSHOPS

Invited Participant, Science and Democracy Network, John F. Kennedy School of Government, Harvard University, 2003 - present.

Invited Participant, Workshop on Science, Democracy, and Globalization, Lisbon, Portugal, February 2003.

Invited Participant, Workshop on New Paradigms in Environmental Science, Perugia, Italy, February 2001.

NATO Advanced Study Institute on Science Policy, Il Ciocco, Italy, October 1989.

#### OTHER PROFESSIONAL ACTIVITIES

Society for Social Studies of Science Representative to the American Association for the Advancement of Science, February 2004-present.

1998 Award for Excellence in Education, University of Denver, for exceptional work with disabled students

Steering Committee, Science, Technology, and Environmental Politics (STEP) Section, American Political Science Association

Program Chair, Science, Technology, Environment and Politics (STEP) Section, American Political Science Association, 1995 Annual Meeting. Assistant Chair, 1994 Annual Meeting

Peer Reviewer:       National Science Foundation  
                          Office of Technology Assessment, U.S. Congress  
                          *Industrial Crisis Quarterly*  
                          *Knowledge*  
                          *Science, Technology, and Human Values*  
                          *Environmental Science and Technology*  
                          *Policy Sciences*  
                          *Science and Public Policy*  
                          Cambridge University Press  
                          MIT Press

ASSOCIATIONS

American Association for the Advancement of Science  
American Political Science Association  
American Solar Energy Society  
Association for Public Policy Analysis and Management  
Colorado Renewable Energy Society  
Society for the Social Studies of Science