

## APPENDIX H

### References

---

- "A Good Budget for Science, But Troubles Lie Ahead," *Science & Government Report*, vol. 20, No. 18, Nov. 15, 1990, pp. 1,4.
- "AAU Says Talks Continue at High Level in OMB To Reopen OMB Circular A-21," *Washington Fax*, Dec. 13, 1990.
- Abelson Philip, "Federal Impediments to Scientific Research" *Science*, vol. 251, Feb. 8, 1991, p. 605.
- Abelson Philip, "Future of the U.S. Space Program," *Science*, vol. 251, Feb. 25, 1991, p. 357.
- Abir-Am, Pnina G. and Dorinda Outram (eds.), *Uneasy Careers and Intimate Lives: Women in Science, 1789-1979* (New Brunswick, NJ: Rutgers University Press, 1987).
- Abu-Laban Baha (cd.), *University Research and the Future of Canada* (Ottawa Canada: University of Ottawa Press, 1988).
- Adams, James D., "Fundamental Stocks of Knowledge and Productivity Growth" *Journal of Political Economy*, vol. 98, No. 4, 1990, pp. 673-702.
- Adamsak Phil, "A Super Year in Science," *Visions*, fall 1987, pp. 19-22.
- Agres, Ted, "DARPA Bets on High-Risk R&D," *Research & Development*, November 1989, pp. 39-42.
- Aldhous, Peter, "University Funding Plan Collapses in Chaos," *Nature*, vol. 348, Nov. 1, 1990, p. 3.
- Aldhous, Peter, "UK Nuclear Physicists Fear SERC's Cuts," *Nature*, vol. 349, Jan. 31, 1991, p. 357.
- Alliance for Undergraduate Education *The Freshman Year in Science and Engineering: Old Problems, New Perspectives for Research Universities* (University Park PA: 1990).
- American Chemical Society, Department of Government Relations and Science Policy, *Federal Funding of Academic Chemistry Research, FY 1980-FY 1988* (Washington DC: November 1990).
- Anderson Christopher, "DOE Rallies to Save U.S. Fusion Research Programmed," *Nature*, vol. 349, Jan. 24, 1991, p. 269.
- Anderson Philip W. et al., "NSF Magnet lab," letter, *The Scientist*, vol. 4, No. 23, Nov. 26, 1990, p. 14.
- "Anthropologists Opt for SEPS Doctorate," *COSSA Washington Update*, Feb. 10, 1991, p. 2.
- Association of American Universities, *Indirect Costs Associated With Federal Support of Research on University Campuses: Some Suggestions for Change* (Washington, DC: December 1988).
- Association of American Universities, *Institutional Policies To Improve Doctoral Education* (Washington, DC: November 1990).
- Association of American Universities, *The PhD. Shortage: The Federal Role* (Washington DC: Jan. 11, 1990).
- Atkinson, Richard C., "Supply and Demand for Scientists and Engineers: A National Crisis in the Making," *Science*, vol. 248, Apr. 27, 1990, pp. 425-432.
- Atkinson, Richard C. and William A. Blanpied, "Peer Review and the Public Interest," *Issues in Science & Technology*, vol. 2, summer 1985, pp. 101-114.
- Atkinson, Richard C. and William A. Blanpied (eds.), *Science, Technology, and Government: A Crisis of Purpose*, proceedings of a symposium, University of California San Diego, March 1988 (La Jolla CA: 1989).
- Australian Science and Technology Council, *Setting Directions for Australian Research* (Canberra, Australia: Australian Government Publishing Service, June 1990).
- Averch Harvey, "New Foundations for Science and Technology Policy Analysis," paper presented at the Conference on the Mutual Relevance of Science Studies and Science Policy, Blacksburg, VA, May 12, 1989.
- Averch Harvey, "Policy Uses of 'Evaluation of Research' Literature," OTA contractor report July 1990.
- Averch Harvey, "Analyzing the Costs of Federal Research" OTA contractor report August 1990.
- Averch Harvey, "The Political Economy of R&D Taxonomies," *Research Policy*, forthcoming 1991.
- Bahcall, John "Prioritizing Scientific Initiatives," *Science*, vol. 251, Mar. 22, 1991, pp. 1412-1413.
- Baldwin Elizabeth and Christopher T. Hill, "The Budget Process and Large-Scale Science Funding," *CRS Review*, vol. 9, February 1988, pp. 13-16.
- Baltimore, David, "The Worsening Climate for Biological Research" *Technology Review*, vol. 92, No. 4, May-June 1989, pp. 22,24.
- Barber, Elinor et al., *Choosing Futures: U.S. and Foreign Student Views of Graduate Engineering Education* (New York NY: Institute of International Education 1990).
- Barinaga Marcia, "Howard Schachman Fights Retirement" *Science*, vol. 249, Sept. 14, 1990, pp. 1235, 1237.
- Barinaga, Marcia "Stanford Sails Into a Storm," *Science*, vol. 250, Dec. 21, 1990, p. 1651.
- Barinaga, Marcia "Was Paul Biddle Too Tough on Stanford," *Science*, vol. 251, Jan. 11, 1991, p. 157.
- Barinaga, Marcia "Indirect Costs: How Does Stanford Compare With Its Peers," *Science*, vol. 251, Feb. 15, 1991, pp. 734-735.
- Barinaga, Marcia "John Dingell Takes On Stanford," *Science*, vol. 251, Feb. 15, 1991, pp. 734-737.
- Barinaga, Marcia, "The SSC Gets Its (Official) Price Tag: \$8.3 Billion," *Science*, vol. 251, Feb. 15, 1991, pp. 741-742.
- Barre, Remi, "Strategic Processes and S&T Indicators: Toward a Key Role in R&D Management Systems," *The Research System in Transition*, S.E. Cozzens et al. (eds.) (Dordrecht Holland: Kluwer, 1990), pp. 227-239.
- Bartlett R. V., *Policy Through Impact Assessment: Institutionalized Analysis as a Policy Strategy* (New York NY: Greenwood Press, 1989).
- Baughman G.W., "Impact of Inflation on Research Expenditures of Selected Academic Disciplines: 1967-1983," report to the National Science Foundation and the National Center for Educational Statistics, NSF/PLN 8017815, Nov. 8, 1985.
- "BBS Task Force Meets: Separate Directorate Issue on the Table," *COSSA Washington Update*, Sept. 21, 1990, pp. 1-3.
- "Behavioral Directorate for NSF Proposed in Congress," *APS Observer*, vol. 3, September 1990, p. 7.
- Bernthal, Frederick M., National Science Foundation, testimony at hearings before the House Subcommittee on Science, Committee on Science, Space, and Technology, Feb. 20, 1991.
- Biedenweg, Rick and Dana Shelley, *1986-87 Decadal Indirect Cost Study* (Stanford, CA: Stanford University Press, February 1988).
- "Big Science: Is It Worth the Price?" *New York Times*, May 27, 1990, p. 11, and June 5, 1990, p. C1.
- Birdsell, David and Herbert Simons, "Basic Research Goals: A Comparison of Political Ideologies," OTA contractor report June 1990.
- Bjerklie, David, "Fast-Track Grants," *Technology Review*, vol. 93, No. 6, August-September 1990, pp. 19-20.
- Block Erich "Education and Human Resources at the National Science Foundation" *Science*, vol. 249, Aug. 24, 1990, pp. 839-840.
- Blum Debra, "Younger Scientists Feel Big Pressure in Battle for Grants," *The Chronicle of Higher Education*, vol. 37, No. 4, Sept. 26, 1990, p. A16.
- Blum Debra "Many Studies of Future Academic Job Market Are Said To Be of Little Use to Policymakers," *The Chronicle of Higher Education*, vol. 37, No. 23, Feb. 20, 1991, pp. A15, A19.
- Blumenstyk, Goldie, "Science Agency Picks Florida State Over MTT as Site for \$60-Million Magnet-Study Lab," *The Chronicle of Higher Education*, vol. 37, No. 1, Sept. 5, 1990, pp. A21-A22.
- Blumenthal, David et rd., "University-Industry Research Relationships in Biotechnology: Implications for the University," *Science*, vol.

- 232, June 13, 1986, pp. 1361-1366.
- Bodkin, Dinah, "Young Scientists and the Future," letter, *Science*, vol. 249, Sept. 28, 1990, pp. 1485-1486.
- Boesman William C., "Historical Perspective on Large U.S. Science Facilities," *CRS Review*, February 1988, pp. 8-10.
- Boesmaa William C. and Christine Matthews Rose, "Equity, Excellence and the Distribution of Federal Research and Development Funds," *CRS Report for Congress* (Washington, DC: Apr. 25, 1989).
- Boffey, Phillip, *The Brain Bank of America* (New York, NY: McGraw-Hill, 1975).
- Boorstin Daniel J., *The Americans: The Democratic Experience* (New York NY: Vintage Books, 1974).
- Booth William "Hubble Report Faults Builder, NASA," *The Washington Post*, Nov. 28, 1990, p. A8.
- Booth William, "Does Earth Need a Government Institute?" *The Washington Post*, Dec. 10, 1990, p. A13.
- Boren, Susan H., "Appropriations Enacted for Specific Colleges and Universities by the 96th Through 99th Congresses," *CRS Report for Congress*, CRS 89-82 EPW (Washington, DC: Feb. 6, 1989).
- Borman Stu, "Human Genome Project Moving on Many Fronts," *Chemical & Engineering News*, vol. 68, No. 50, Dec. 10, 1990, pp. 6-7.
- Bouchard, Constance B., "The 'Lost Generation' of Scholars Can Help Colleges Avoid the Looming Faculty Shortage," *The Chronicle of Higher Education*, vol. 37, No. 12, Nov. 21, 1990, pp. B1-B2.
- Bowen, William G. and Julie Ann Sosa, *Prospects for Faculty in the Arts and Sciences* (Princeton, NJ: Princeton University Press, 1989).
- Bozeman, Barry and Michael Crow, "The Environments of U.S. R&D Laboratories: Political and Market Influences," *Policy Sciences*, vol. 23, No. 1, 1990, pp. 25-56.
- Bradburn, Norman M., "The Ranking of Universities in the United States and Its Effect on Their Achievement," *Minerva*, vol. 26, No. 1, spring 1988, pp. 91-100.
- Brakenridge, G. Robert "Evaluating Scientific Initiatives," letter, *American Scientist*, vol. 77, No. 3, May-June 1989, pp. 212-213.
- Breneman David W. and Ted I.K. Youn (eds.), *Academic Labor Markets and Careers* (Philadelphia, PA: The Falmer Press, 1988).
- Breslow, Ronald, "Funding Science Research" letter, *Chemical & Engineering News*, vol. 68, No. 51, Dec. 17, 1990, p. 2.
- "British Science Indicators," *Outlook on Science Policy*, vol. 11, November 1989, pp. 112-113.
- Bromley, D. Allan "Keynote Address," *Science and Technology and the Changing World Order*, S.D. Sauer (ed.) (Washington DC: American Association for the Advancement of Science, 1990), pp. 7-16.
- Brooks, Harvey, "The Future Growth of Academic Research: Criteria and Needs," *Science Policy and the University*, Harold Orlans (ed.) (Washington, DC: The Brookings Institution 1968), pp. 53-76.
- Brooks, Harvey, "Models for Science Planning," *Public Administration Review*, vol. 31, May/June 1971, pp. 364-374.
- Brooks, Harvey, "Can Science Survive in the Modern Age?" *Science*, vol. 174, Oct. 1, 1971, pp. 21-30.
- Brooks, Harvey, "Knowledge and Action: The Dilemma of Science Policy in the '70s," *Daedalus*, vol. 102, No. 2, spring 1973, pp. 125-143.
- Brooks, Harvey, "Are Scientists Obsolete?" *Science*, vol. 186, Nov. 8, 1974, pp. 501-508.
- Brooks, Harvey, "The Problem of Research Priorities," *Daedalus*, vol. 107, No. 2, spring 1978, pp. 171-190.
- Brooks, Harvey, "Can Science Survive in the Modern Age? A Revisit After Twenty Years," *National Forum*, vol. 71, No. 4, fall 1990, pp. 31-33.
- Burek Deborah M. et al. (eds.), *Encyclopedia of Associations* (Detroit, MI: Gale Research, Inc., 1989).
- Busch Lawrence and William B. Lacy, *Science, Agriculture and the Politics of Research* (Boulder, CO: Westview Press, 1983).
- Bylinsky, Gene, "America's Hot Young Scientists," *Fortune*, vol. 122, No. 9, Oct. 8, 1990, pp. 56-69.
- Carey, William D., "Scientists and Sandboxes: Regions of the Mind," *American Scientist*, vol. 76, March-April 1988, pp. 143-145.
- Carey, William D., "R&D in the Federal Budget: 1976-1990," *Science and Technology and the Changing World Order*, S.D. Sauer (ed.) (Washington, DC: American Association for the Advancement of Science, 1990), pp. 43-51.
- Carpenter, M.P. et al., "Bibliometric Profiles for British Academic Institutions: An Experiment To Develop Research Output Indicators," *Scientometrics*, vol. 14, Nos. 3-4, 1988, pp. 213-233.
- Carter, Grace M., *What We Know and Do Not Know About the Peer Review System, N-1878-RC/NIH* (Santa Monica, CA: RAND Corp., June 1982).
- Cassman Marvin "Issues Behind the Drop in the NIH Award Rate," *ASM News*, vol. 56, September 1990, pp. 465-469.
- Chait, Richard, "The Pro-Teaching Movement Should Try Economic Pressures," *The Chronicle of Higher Education*, vol. 36, No. 43, July 11, 1990, p. A36.
- Chalk Rosemary and Patricia Woolf, "Regulating a 'Knowledge Business,'" *Issues in Science & Technology*, vol. 5, No. 2, winter 1988-89, pp. 33-37.
- Chalmers, Johnson *MITI and the Japanese Miracle* (Stanford, CA: Stanford University Press, 1982).
- Chelimsky, Eleanor, "Expanding GAO's Capabilities in Program Evaluation" *The GAO Journal*, winter/spring 1990, pp. 43-52.
- Cherfas, Jeremy, "University Restructuring Based on False premise?" *Science*, vol. 247, Jan. 19, 1990, p. 278.
- Cherfas, Jeremy, "Peer Review: Software for Hard Choices," *Science*, vol. 250, Oct. 19, 1990, pp. 367-368.
- Cherfas, Jeremy, "Deficits Trip U.K. Science Funding Agencies," *Science*, vol. 250, Dec. 14, 1990, pp. 1504-1505.
- Chubin, Daryl E., "Designing Research Program Evaluations: A Science Studies Approach" *Science and Public Policy*, vol. 14, April 1987, pp. 82-90.
- Chubin, Daryl E., "Progress, Culture, and the Cleavage of Science From Society," *Science, Technology and Social Progress*, S.L. Goldman (ed.) (Bethlehem PA: Lehigh University Press, 1989), pp. 177-195.
- Chubin, Daryl E., "Scientific Malpractice and the Contemporary Politics of Knowledge," *Theories of Science in Society*, S.E. Cozzens and T.F. Gieryn (eds.) (Bloomington IN: Indiana University Press, 1990), pp. 149-167.
- Chubin, Daryl E., "Misinformation and the Recruitment of Students to Science," *Bioscience*, vol. 40, No. 7, July/August 1990, pp. 524-526.
- Chubin, D.E. and T Connolly, "Research Trails and Science Policies: Local and Extralocal Negotiations of Scientific Work," *Scientific Establishments and Hierarchies*, Sociology of the Sciences Yearbook vol. 6, N. Elias (ed.) (Dordrecht, Holland: D. Reidel, 1982), pp. 293-311.
- Chubin D.E. and E.J. Hackett *Peerless Science: Peer Review and U.S. Science Policy* (Albany, NY: SUNY Press, 1990).
- Ciba Foundation *The Evaluation of Scientific Research* (New York NY: John Wiley & Sons, 1989).
- Clark David L., "Departmental Responses to Fluctuation in Research Resources," *Research Management Review*, vol. 4, spring 1990, pp. 19-34.
- Clement John R.B., "Computer Science and Engineering Support in the FY 1988 Budget," *AAAS Report XII, Research & Development FY 1988*, AAAS Committee on Science, Engineering, and Public Policy, Intersociety Working Group (ed.) (Washington DC: American Association for the Advancement of Science, 1987), pp. 251-261.
- Clement John R.B. and Dianne Edgar, "Computer Science and Engineering Support in the FY 1989 Budget," *AAAS Report XIII, Research & Development FY 1989*, AAAS Committee on Science, Engineering, and Public Policy, Intersociety Working Group (ed.) (Washington, DC: American Association for the Advancement of Science, 1988), pp. 260-271.
- Clemmit, Marcia, "Livermore's Purchase of Japanese Supercomputer Is Blocked," *The Scientist*, vol. 4, No. 23, Nov. 26, 1990, p. 3.

- Cole, Jonathan R. and Stephen Cole, "The Ortega Hypothesis," *Science*, vol. 178, Oct. 27, 1972, pp. 368-372.
- Cole, Jonathan R. and Stephen Cole, *Peer Review in the National Science Foundation: Phase II of a Study* (Washington DC: National Academy of Sciences, 1981).
- Cole, Stephen et al., *Peer Review in the National Science Foundation: Phase I of a Study* (Washington DC: National Academy of Sciences, 1978).
- Commission on Professionals in Science and Technology, *Measuring National Needs for Scientists to the Year 2000*, report of a workshop, Nov. 30-Dec. 1, 1988 (Washington, DC: July 1989).
- Computer Horizons, Inc., "An Assessment of the Factors Affecting Critical Cancer Research Findings," executive summary, NIH Evaluation Project No. 93-304, Sept. 30, 1987.
- Comroe, Julius H., Jr., *RetroSpectroScope: Insights Into Medical Discovery* (Menlo Park CA: Von Gehr Press, 1977).
- Comroe, Julius H., Jr., "The Road From Research to New Diagnosis and Therapy," *Science*, vol. 200, May 26, 1978, pp. 931-937.
- "Congress Hungry for NAS Advice," *Science*, vol. 250, Dec. 7, 1990, p. 1334.
- Congressional Budget Office, "Federal Investment in Intangible Assets: Research and Development," unpublished document, February 1991.
- Congressional Research Service, *Interagency Coordination of Federal Scientific Research and Development: The Federal Council for Science and Technology, report to House Committee on Science and Technology, Subcommittee on Domestic and International Scientific Planning and Analysis, 94th Cong.* (Washington DC: U.S. Government Printing Office, July 1976).
- Congressional Research Service, Science Policy Research Division *Statutory Provisions Related to Federal Research and Development*, prepared for the House Committee on Science and Technology, Subcommittee on Domestic and International Scientific Planning and Analysis (Washington DC: U.S. Government Printing Office, 1976).
- "Consistency Versus Relevance: EMC Changes a Statistic," *Engineering Manpower Bulletin*, June 1990, p. 1.
- Cooper, Kenneth J., "Administration Revises Race-Based Grant Rule," *The Washington Post*, Dec. 19, 1990, pp. A1, A8.
- Cooper, Kenneth J., "Stanford President Sets Initiative on Teaching," *The Washington Post*, Mar. 3, 1991, p. A12.
- Cooper, Kenneth J., "Stanford Will Try to Explain Price of Knowledge," *The Washington Post*, Mar. 13, 1991, p. A15.
- Cooper, Kenneth J., "Panel Looks for Liability in Stanford Billings Case," *The Washington Post*, Mar. 15, 1991, p. A21.
- Cooper, Kenneth J., "Five Major Universities Face GAO Audit of Research Bills," *The Washington Post*, Mar. 16, 1991, p. A2.
- Cooperative State Research Service, "Budget Submission," hearing on Rural Development Agriculture and Related Agencies Appropriations for 1990, before the House Subcommittee of the Committee on Appropriations, Part 2, 1989.
- Cordes, Colleen "Calls for Setting Science-Spending Priorities Are Renewed as Supercollider Gets Go-Ahead, NSF Faces Pinch" *The Chronicle of Higher Education*, vol. 35, No. 46, July 26, 1989, pp. A19, A23.
- Cordes, Colleen "Congressional Practice of Earmarking Federal Funds for Universities Offers Both Promise and Peril," *The Chronicle of Higher Education*, vol. 36, No. 17, Jan. 10, 1990, pp. A19, A24-A25.
- Cordes, Colleen, "Tiny NSF Program Hailed as Model for Broader Distribution of U.S. Funds," *The Chronicle of Higher Education*, vol. 36, No. 45, July 25, 1990, pp. A1, A17.
- Cordes, Colleen "Big Science and Technology projects Near Important Milestones in Face of Federal Budget Crunch and Mounting Criticism," *The Chronicle of Higher Education*, vol. 37, No. 2, Sept. 12, 1990, pp. A23, A28.
- Cordes, Colleen, "Policy Experts Ask a Heretical Question: Has Academic Science Grown Too Big?" *The Chronicle of Higher Education*, vol. 37, No. 3, Nov. 21, 1990, pp. A1, A22.
- Cordes, Colleen, "Universities Fear That U.S. Will Limit Payments for Overhead Costs Incurred by Researchers," *The Chronicle of Higher Education*, vol. 37, No. 12, Nov. 21, 1990, pp. A19, A21.
- Cordray, David S. et al., "Sharing Research Data: With Whom, When and How Much?" paper presented at the Public Health Workshop on Data Management in Biomedical Research Chevy Chase, MD, Apr. 25-26, 1990.
- Council for Science and Technology, Policy Committee, Prime Minister's Office, and Committee on Guidelines for Research Evaluation *Basic View on Research Evaluation* (Tokyo, Japan: 1986).
- Council on Competitiveness, "National Labs Meet With DOE," *Legislative and Policy Update*, vol. 3, No. 2, Jan. 28, 1991, p. 1.
- Cozzens, Susan E., "Taking the Measure of Science: A Review of Citation Theories," *ISSK Newsletter*, No. 7, 1981, pp. 16-21.
- Cozzens, Susan E., "Derek Price and the Paradigm of Science Policy," *Science, Technology, & Human Values*, vol. 13, Nos. 3 and 4, summer-autumn 1988, pp. 361-372.
- Cozzens, Susan E., "Literature-Based Data in Research Evaluation: A Manager's Guide to Bibliometrics," final report to the National Science Foundation Sept. 18, 1989.
- Cozzens, Susan E., "Science Indicators: Description or Prescription?" OTA contractor report July 1990.
- Cozzens, S.E. and T.F. Gieryn (eds.), *Theories of Science in Society*, Bloomington IN: Indiana University Press, 1990).
- Cozzens, Susan E. et al. (eds.), *The Research System in Transition*, proceedings of a NATO Advanced Study Institute, 11 Ciocco, Italy, Oct. 1-13, 1989 (Dordrecht, Holland: Kluwer, 1990).
- Crawford, Mark "Domenici Bill To Broaden Labs' Missions," *The Energy Daily*, vol. 19, No. 14, Jan. 22, 1991, pp. 1-2.
- Crawford, Mark "U.S. Backing for Fusion Project Seen" *Science*, vol. 251, Jan. 25, 1991, p. 371.
- Crawford, Mark "Researchers Protest User Fees at National Labs," *Science*, vol. 251, Mar. 1, 1991, p. 1016.
- Crease, Robert P. and Nicholas P. Samios, "Managing the Unmanageable," *The Atlantic Monthly*, January 1991, pp. 80-88.
- Culliton Barbara J., "NIH Readies Plan for Cost Containment" *Science*, vol. 250, Nov. 30, 1990, pp. 1198-1199.
- Culliton Barbara J., "FASEB 'Rejects' IOM Study," *Science*, vol. 250, Nov. 30, 1990, p. 1199.
- Culliton, Barbara J., "Biomedical Funding: The Eternal 'Crisis,'" *Science*, vol. 250, Dec. 21, 1990, pp. 1652-1653.
- Czujko, Roman et al., "Their Most Productive Years: Young Physics Faculty in 1990," *Physics Today*, February 1991, pp. 37-42.
- Davey, Michael, Congressional Research Service, *Bricks and Mortar: A Summary and Analysis of Proposals to Meet Research Facilities Needs on College Campuses*, report to the House Committee on Science, Space, and Technology, Subcommittee on Science, Research and Technology, 100th Cong. (Washington DC: U.S. Government Printing Office, September 1987).
- Davey, Michael, Congressional Research Service, "Research and Development Funding: FY 1991," issue brief IB90048, Nov. 13, 1990.
- Davis, Bernard D., "Human Genome Project: Is 'Big Science' Bad for Biology?-Yes: It Bureaucratizes, Politicizes Research," *The Scientist*, vol. 4, No. 22, Nov. 12, 1990, pp. 13, 15.
- Davis, Bob, "Federal Budget Pinch May Cut Amount of 'Pork' to Colleges Living Off the Fat of the Land," *Wall Street Journal*, May 2, 1990, p. A18.
- Davis, Bob, "NASA Management Flaws Led Agency To Overlook Hubble Defect, Panel Finds," *Wall Street Journal*, Nov. 27, 1990, p. B4.
- DeLoughry, Thomas J., "Deficit-Reduction Plan Could Tighten Budgets for Student Aid and Research" *The Chronicle of Higher Education*, vol. 37, No. 10, Nov. 7, 1990, pp. A18, A28.
- DeLoughry, Thomas J., "Colleges Welcome News That Rep. Ford Will Chair House Postsecondary Education Subcommittee," *The Chronicle of Higher Education*, vol. 37, No. 12, Nov. 21, 1990, pp. A19, A23.

- DeLoughry, Thomas J., "U.S. Asked to Set Student-Aid Goals for Poor and Minority Students," *The Chronicle of Higher Education*, vol. 37, No. 20, Jan. 30, 1991, p. A20.
- Denhardt David T., "Too Much for AIDS Research," *The Washington Post*, Oct. 2, 1990, p. A19.
- Department of Trade and Industry, *Evaluation of R&D-A Policymaker's Perspective* (London England: Her Majesty's Stationery Office, 1988).
- Dickson David, *The New Politics of Science* (New York, NY: Pantheon, 1984).
- "Dingell Asks Defense Contract Audit Agency To Brief Staff on Stanford Overhead Expenses," *Washington Fax*, Dec. 10, 1990.
- Dodgson M., "National Policies-Research and Technology Policy in Australia: Legitimacy in Intervention" *Science and Public Policy*, vol. 16, No. 3, June 1989, pp. 159-166.
- Doniach Sebastian "Condensed Matter Theory's Fragile Funding," letter, *Physics Today*, November 1990, pp. 13, 117.
- Donnelly, John P., "Researchers Must Join Forces To Bolster Public Confidence and Funding Support" *The Scientist*, vol. 4, No. 20, Oct. 15, 1990, p. 16.
- Drew, David E., *Science Development: An Evaluation Study*, a technical report presented to the National Board on Graduate Education (Washington, DC: National Academy of Sciences, June 1975).
- Dutton John A. and Lawson Crowe, "Setting Priorities Among Scientific Initiatives," *Amen-can Scientist*, vol. 76, November-December 1988, pp. 599-603.
- Economic Report of the President Washington, DC: U.S. Government Printing Office, 1990*.
- Edge, D.O., "Quantitative Measures of Communication in Science: A Critical Review," *History of Science*, vol. 17, 1979, pp. 102-134.
- "Education Finance," *Stanford Observer*, November-December 1990, p. 14.
- Elias, N. et al. (eds.), *Scientific Establishments and Hierarchies* (Dordrecht, Holland: D. Reidel, 1982).
- El-Khawas, Elaine, *Campus Trends-1988* (Washington DC: American Council on Education, 1988).
- Elkana, Y. et al., *Toward a Metric of Science* (New York NY: Wiley, 1977).
- Ember, Lois, "Bush's Science Advisor Discusses Declining Value of R&D Dollars," *Chemical & Engineering News*, vol. 68, No. 17, Apr. 23, 1990, pp. 16-17.
- England, J. Merton, *A Patron for Pure Science: The National Science Foundations's Formative Years, 1945-57* (Washington, DC: National Science Foundation, 1982).
- "Enhancing Research and Expanding the Human Frontier," *Budget of the United States Government, Fiscal Year 1992*, part II (Washington DC: U.S. Government Printing Office, 1991), pp. 35-76.
- Etzkowitz, Henry, "Entrepreneurial Scientists and Entrepreneurial Universities in Academic Science," *Minerva*, vol. 21, Nos. 2-3, summer-autumn 1983, pp. 198-233.
- Etzkowitz, Henry, "The Second Academic Revolution: The Role of the Research University in Economic Development" *The Research System in Transition*, S.E. Cozzens et al. (eds.) (Dordrecht, Holland: Kluwer, 1990), pp. 109-124.
- Executive Office of the President Office of Science and Technology Policy, "A Research and Development Strategy for High Performance Computing," unpublished document Nov. 20, 1987.
- Executive Office of the President Office of Science and Technology Policy, "U.S. Technology Policy," unpublished document Sept. 26, 1990.
- "Faculty Pay and the Cost of Living," chart, *The Chronicle of Higher Education*, vol. 37, No. 17, Jan. 9, 1991, p. A15.
- "FAST Guide to French Government R&D," *French Advances in S&T*, vol. 4, No. 1, winter 1990-1991, pp. 3-6.
- Fechter, Alan "Engineering Shortages and Shortfalls: Myths and Realities," *The Bridge*, vol. 20, fall 1990, pp. 16-20.
- Ferejohn, John A., *Pork Barrel Politics* (Stanford CA: Stanford University Press, 1974).
- Feme, George, *Science and Technology in Scandinavia* (London, England: Longman 1989).
- Finn, Michael G., "Personnel Shortage in Your Future?" *Research-Technology Management*, vol. 34, No. 1, January-February 1991, pp. 24-27.
- Fiorina, Morns P., *Congress: Keystone of the Washington Establishment*, 2d ed. (New Haven, CT: Yale University Press, 1989).
- Flamm, Kenneth *Targeting the Computer* (Washington, DC: The Brookings Institution, 1987).
- Ford, J., "Australia Tilts Its R&D Towards Industry," *New Scientist*, vol. 116, No. 1580, 1987, p. 19.
- Franklin J. Jeffrey, "Selectivity in Funding: Evaluation of Research in Australia" *Prometheus*, vol. 6, June 1988, pp. 34-60.
- Friedman, Robert S. and Renee C. Friedman, "Science American Style: Three Cases in Academe," *Policy Studies Journal*, vol. 17, No. 1, fall 1989, pp. 43-61.
- Fulbright J.W., "Is the project Apollo Program To Land Astronauts on the Moon By 1970 a Sound National Objective?" *Congressional Digest*, vol. 44, February 1985, pp. 47,49,51,53.
- Fuqua, Don "Science Policy: The Evolution of Anticipation" *Technology in Society*, vol. 2, 1980, pp. 365-373.
- "FY 1992 Budgets for Social and Behavioral Science Research" *COSSA Washington Update*, vol. 10, Mar. 4, 1991, pp. 10-11.
- Garfield, Eugene, *Citation Indexing: Its Theory and Application in Science, Technology and Humanities* (New York, NY: John Wiley & sons, 1979).
- Garfield, Eugene, "Fast Science vs. Slow Science, Or Slow and Steady Wins the Race," *The Scientist*, vol. 4, No. 18, Sept. 17, 1990, p. 14.
- Garfield, Eugene, "Assessing the Benefits of Science in Terms of Dollars and Sense," *The Scientist*, vol. 4, No. 22, Nov. 12, 1990, p. 14.
- Gassman, Paul, "Future Supply and Demand In Academic Institutions," *Human Resources in Science and Technology: Improving U.S. Competitiveness*, proceedings of a Policy Symposium for Government, Academia and Industry, March 15-16, 1990, Betty Vetter and Eleanor Babco (eds.) (Washington DC: Commission on professionals in Science and Technology, July 1990), pp. 29-36.
- Gassman, Paul, "Shortening the Time to a Ph.D.," *Chemical & Engineering News*, vol. 68, No. 52, Dec. 24, 1990, pp. 25-26.
- Gaston, Jerry, "The Benefits of Black Participation in Science," *Blacks, Science and American Education*, Willie Pearson, Jr. and H. Kenneth Bechtel (eds.) (New Brunswick, NJ: Rutgers University Press, 1989), pp. 123-152.
- Geiger, Roger L., "Milking the Sacred Cow: Research and the Quest for Useful Knowledge in the American University Since 1920," *Science, Technology, & Human Values*, vol. 13, Nos. 3-4, summer & autumn 1988, pp. 332-348.
- Geiger, Roger L., "The American University and Research" *The Academic Research Enterprise Within the Industrialized Nations: Comparative Perspectives*, Government-University-Industry Research Roundtable (ed.) (Washington DC: National Academy Press, 1990), pp. 15-35.
- Geller, N.L. et al., "Lifetime Citation Rates to Compare Scientists' Work," *Social Science Research*, vol. 7, 1978, pp. 345-365.
- Gerstein Dean R. et al. (eds.), *The Behavioral and Social Sciences: Achievements and Opportunities* (Washington, DC: National Academy Press, 1988).
- Gibbons, Ann "The Salk Institute at a Crossroads," *Science*, vol. 249, July 27, 1990, pp. 360-362.
- Gibbons, Michael, Organisation for Economic Cooperation and Development, *Evaluation of Research in Sweden* (Manchester, England: University of Manchester Press, 1984).
- Gibbons, M. and L. Georghiou, *Evaluation of Research: A Selection of Current Practices* (Paris, France: Organisation for Economic Cooperation and Development, 1987).
- Gibbons, M. and A. Udgaonkar (eds.), *Science and Technology Policy in the 1980s* (Manchester, England: Manchester University Press, 1985).

- Gilbert, Walter, "Towards a Paradigm Shift in Biology," *Nature*, vol. 349, Jan. 10, 1991, p. 99.
- Ginzberg, Eli, "Scientific and Engineering Personnel: Lessons and Policy Directions," *The Impact of Defense Spending in Nondefense Engineering Labor Markets*, National Research Council, Office of Scientific and Engineering Personnel (ed.) (Washington, DC: National Academy Press, 1986), pp. 25-42.
- Gladwell, Malcolm, "Are Nobel Prizes for U.S. Vestiges of 'Golden Age'?" *The Washington Post*, Nov. 16, 1990, p. A6.
- Golden, William, *Science and Technology Advice to the President, Congress, and Judiciary* (New York, NY: Pergamon Press, 1988).
- Goldenberg, E.N., "The Three Faces of Evaluation" *Journal of Policy Analysis and Management*, vol. 2, summer 1983, pp. 515-525.
- Goldsmith, Maurice, *The Science Critic* (London England: Routledge & Kegan Paul, 1986).
- Goldwater, Barry M., "Is the Project Apollo Program To Land Astronauts on the Moon by 1970 a Sound National Objective?" *Congressional Digest*, vol. 44, February 1985, pp. 53,55.
- Gornick, Vivian *Women in Science: 100 Journeys Into the Territory*, rev. ed. (New York, NY: Simon & Schuster/Touchstone, 1990).
- Gosselin, Peter G., "A Clash of Scientific Titans: Key Groups Battle Over Funds for Medical Projects," *The Washington Post*, Dec. 18/25, 1990, health section, p. 6.
- "Government Inquiry," *Stanford Observer*, November-December 1990, pp. 1, 13.
- Government-University-Industry Research Roundtable, *Science and Technology in the Academic Enterprise: Status, Trends and Issues* (Washington, DC: National Academy Press, September 1989).
- Government-University-Industry Research Roundtable, *The Academic Research Enterprise Within the Industrialized Nations: Comparative Perspectives*, report of a symposium (Washington DC: National Academy Press, March 1990).
- "The Government's Guiding Hand: An Interview With Ex-DARPA Director Craig Fields," *Technology Review*, vol. 94, February-March 1991, pp. 3340.
- Grady, Robert E., Office of Management and Budget, "Terms of Reference Memorandum on the FY 1992 U.S. Global Change Research Program," unpublished document June 18, 1990.
- Grassmuck, Karen, "Some Research Universities Contemplate Sweeping Changes Ranging From Management and Tenure to Teaching Methods," *The Chronicle of Higher Education*, vol. 37, No. 2, Sept. 12, 1990, pp. A1, A29-A31.
- Grassmuck, Karen "Colleges Scramble for Money to Reduce Huge Maintenance Backlog, Estimated to Exceed \$70 Billion; New Federal Help Seen Unlikely," *The Chronicle of Higher Education*, vol. 37, No. 6, Oct. 10, 1990, pp. A1, A34.
- Gray, Paul E., "Advantageous Liaisons," *Issues in Science & Technology*, vol. 6, No. 3, spring 1990, pp. 40-46.
- Griffith, B.C. and N.C. Mullins, "Coherent Social Groups in Scientific Change," *Science*, vol. 177, Sept. 15, 1972, pp. 959-964.
- Griliches, Zvi. "Patent Statistics as Economic Indicators: A Survey," *Journal of Economic Literature*, vol. 28, No. 4, December 1990, pp. 1661-1707.
- Guy, K. and L. Georgioui, "Real-Time Evaluation and the Management of Mission-Oriented Research: The Evaluation of the Alvey Program: Aims, Achievements and Lessons," paper presented at the ECE Seminar on Evaluation in the Management of R&D, Mar. 3-7, 1989.
- Haas, Lawrence J., "New Rules of the Game," *National Journal*, vol. 22, No. 46, Nov. 17, 1990, pp. 2793-2797.
- Hackett, Edward J., "Science in the Steady State: The Changing Research University," OTA contractor report, 1987.
- Hackett, Edward J., "Science as a Vocation in the 1990s," *Journal of Higher Education*, vol. 61, May/June 1990, pp. 241-279.
- Hamilton, David P., "The SSC Takes on a Life of Its Own," *Science*, vol. 249, Aug. 17, 1990, pp. 731-732.
- Hamilton, David P., "Publishing By—and For—the Numbers," *Science*, vol. 250, Dec. 7, 1990, pp. 1331-1332.
- Hamilton, David P., "Research Papers: Who's Uncited Now?" *Science*, vol. 251, Jan. 4, 1991, p. 25.
- Hamilton, David P., "NSF Off the Hook," *Science*, vol. 251, Feb. 15, 1991, p. 733.
- Hamilton, David P., "Space Station Shrinkage to Affect Scientific Mission," *Science*, vol. 251, Mar. 8, 1991, p. 1167.
- Hamlett, Patrick "Task Force on Science Policy: A Window on the Federal Funding and Management of Research" OTA contractor report, October 1990.
- Harr, Karl G. and Virginia C. Lopez, "The National Aeronautics and Space Administration: Its Social Genesis, Development and Impact" *Managing Innovation: The Social Dimensions of Creativity, Innovation and Technology*, S.B. Lundstedt and E.W. Colglazier (eds.) (New York, NY: Pergamon Press, 1982), pp. 170-189.
- Hileman, Bette, "Facts and Figures for Chemical R&D," *Chemical & Engineering News*, vol. 68, Aug. 20, 1990, pp. 28-30.
- Hoaglin David C. et al., *Data for Decisions: Information Strategies for Policymakers* (Cambridge, MA: Abt Books, 1982).
- Holden, Constance, "A Preemptive Strike for Animal Research," *Science*, vol. 244, Apr. 28, 1989, pp. 415416.
- Holden, Constance, "Facilities Awards," *Science*, vol. 251, Feb. 8, 1991, p. 622.
- Holden, Constance, "Do We Need More Ph.D.s, or Is Fewer Really Better?" *Science*, vol. 251, Mar. 1, 1991, pp. 1017-1018.
- Holt, Don, "Recapturing the Vision: The Case for Formula Funds," in proceedings of the 1989 Annual Meetings of the Agricultural Research Institute, Bethesda, MD, May 1990.
- Holt, Don Illinois Agricultural Experiment Station, "Mechanisms for Federal Funding of Agricultural Research and Development," mimeo, August 1988.
- Hood, Leroy E., "Human Genome Project: Is 'Big Science' Bad for Biology?—No: And Anyway, the HGP Isn't 'Big Science'" *The Scientist*, vol. 4, No. 22, Nov. 12, 1990, pp. 13, 15.
- "How Iowa State University Wins Millions in Earmarked Funds," *The Chronicle of Higher Education*, vol. 37, No. 24, Feb. 27, 1991, p. A21.
- Howe, Henry F. and Stephen P. Hubbell, "Progress Report on Proposed National Institutes for the Environment" *Bioscience*, vol. 40, No. 8, September 1990, p. 567.
- "Indirect Cost Prime Source of Increase in Dollars for RO1 Grants," Dec. 7, 1990, *Washington Fax*, p. 1.
- Inman, B.R. and Daniel F. Burton, Jr., "Technology and Competitiveness: The New Policy Frontier," *Foreign Affairs*, vol. 69, spring 1990, pp. 116-134.
- Institute of Medicine, *Funding Health Sciences Research: A Strategy to Restore Balance* (Washington, DC: National Academy Press, Nov. 9, 1990).
- Intersociety Working Group, *AAAS Report IX-XVI: Research & Development, FY 1985-92* (Washington, DC: American Association for the Advancement of Science, 1984-91).
- Irvine, John and Ben\_ *Foresight in Science: Picking the Winners* (London, England: Frances Pinter, 1984).
- Irvine, John et al., *Investing in the Future* (Worcester, England: Billings & Sons Ltd., 1990).
- Irvine, John et al., "Investing in the Future: How Much Governments Pay for Academic Research" *Physics Today*, September 1990, pp. 31-38.
- "Is Knowledge a Dangerous Thing?" *The Economist*, vol. 318, Feb. 16, 1991, pp. 21-22.
- Jaschik, Scott "Scholarships Set Up for Minority Students are Called Illegal," *The Chronicle of Higher Education*, vol. 37, No. 15, Dec. 12, 1990, pp. A1, A20.
- Johnson, Bruce D., *National Party Platforms: Volume II, 1960-76* (Urbana, IL: University of Illinois Press, 1978).
- Johnston, Ron, University of Wollongong, Australia "Project Selection Mechanisms: International Comparisons," OTA contractor report, July 1990.
- Kaner, Richard B. and Alan G. MacDiarmid, "Plastics That Conduct Electricity," *Scientific American*, vol. 258, February 1988, pp.

- 106-111.
- Kash Don E., "Crossing the Boundaries of Disciplines," *Engineering Education*, vol. 78, No. 10, November 1988, pp. 93-98.
- Katauskas, Ted, "Shuttle Science: Is it Paying Off," *R&D Magazine*, August 1990, pp. 43-52.
- Kennedy, Donald, "Government Policies and the Costs of Doing Research," *Science*, vol. 227, Feb. 1, 1985, pp. 480-484.
- Klein, Julie Thompson *Interdisciplinarity: History, Theory, and Practice* (Detroit, MI: Wayne State University Press, 1990).
- Knezo, Genevieve J., "White House Office of Science and Technology Policy: An Analysis," *CRS Report for Congress*, 89-689 SPR (Washington, DC: Congressional Research Service, Nov. 20, 1989).
- Knezo, Genevieve J., "Japanese Basic Research Policies," *CRS Report for Congress* (Washington, DC: Congressional Research Service, Aug. 1, 1990).
- Knezo, Genevieve J., "Defense Basic Research Priorities: Funding and Policy Issues," *CRS Report for Congress* (Washington, DC: Congressional Research Service, Oct. 24, 1990).
- Knezo, Genevieve J., "Science Megaprojects: Status and Funding, February 1991," *CRS Report for Congress*, 91-258 SPR (Washington DC: Congressional Research Service, Mar. 12, 1991).
- Knezo, Genevieve J. and Richard E. Rowberg, "Big and Little Science," *CRS Review*, February 1988, pp. 6-8.
- Kohlstedt, S.G. and M.W. Rossiter (eds.), *Historical Writing on American Science: Perspectives and Prospects* (Baltimore, MD: Johns Hopkins University Press, 1986).
- Kolata, Gina, "Who's No. 1 in Science? Footnotes Say U.S.," *The New York Times*, Feb. 12, 1991, pp. C1, C9.
- Koprowski, Gene, "OMB to Join Summit on Space Report," *Washington Technology*, vol. 5, Dec. 20, 1990, p. 1.
- Koshland, Daniel E., Jr., "To See Ourselves as Others See Us," *Science*, vol. 247, Jan. 5, 1990, p. 9.
- Koshland, Daniel E., Jr., "The Underside of Overhead," *Science*, vol. 248, May 11, 1990, p. 645.
- Kostoff, R.N., "Evaluation of Proposed and Existing Accelerated Research Programs of the Office of Naval Research," *IEEE Transactions on Engineering Management*, vol. 35, November 1988, pp. 271-279.
- Kraut Alan G., "Statement of the American Psychological Society to the National Science Foundation's BBS Task Force on looking to the 21st Century," unpublished document Nov. 29, 1990.
- Kruytbosch, Carlos and Lawrence Burton "The Search for Impact Indicators," *Knowledge: Creation, Diffusion, Utilization*, vol. 9, December 1987, pp. 168-172.
- Kuntz, Phil, "Pie in the Sky: Big Science Is Ready for Blastoff," *Congressional Quarterly Weekly Report*, vol. 48, Apr. 28, 1990, pp. 1254-1260.
- LaFollette, Marcel C., "Scientists and the Media: In Search of a Healthier Symbiosis," *The Scientist*, vol. 4, No. 14, July 9, 1990, pp. 13-15.
- LaFollette, Marcel C., "Congressional Oversight of Science and Technology Programs," paper prepared for the Committee on Science, Technology, and Congress, Carnegie Commission on Science, Technology, and Government New York, NY, September 1990.
- LaFollette, Marcel C., *Making Science Our Own: Public Images of Science 1910-1955* (Chicago, IL: University of Chicago Press, 1990).
- Lane, Neal, "Educational Challenges and Opportunities," *Human Resources in Science and Technology: Improving U.S. Competitiveness*, proceedings of a Policy Symposium for Government, Academia, and Industry, Mar. 15-16, 1990, Betty Vetter and Eleanor Babco (eds.) (Washington, DC: Commission on Professionals in Science and Technology, July 1990), pp. 92-99.
- Latour, Bruno, *Science in Action: How to Follow Scientists and Engineers Through Society* (Cambridge, MA: Harvard University Press, 1987).
- Latour, Bruno and Steve Woolgar, *Laboratory Life: The Social Construction of Scientific Facts* (Beverly Hills, CA: Sage, 1979).
- Lavakare, P.J. and J.G. Waardenburg (eds.), *Science Policies in International Perspective: The Experience of India and the Netherlands* (London England: Frances Pinter, 1989).
- Layzell, Daniel T., "Most Research on Higher Education is Stale, Irrelevant and of Little Use to Policymakers," *The Chronicle of Higher Education*, vol. 37, No. 8, Oct. 24, 1990, pp. B1, B3.
- Weatherman, Courtney, "Definition of Faculty Scholarship Must be Expanded to Include Teaching, Carnegie Foundation Says," *The Chronicle of Higher Education*, vol. 37, No. 14, Dec. 5, 1990, pp. A1, A16-A17.
- Weatherman, Courtney, "End of Mandatory-Retirement Policies Seen Having Little Effect on Professors," *The Chronicle of Higher Education*, vol. 37, No. 17, Jan. 9, 1991, pp. A13-A14.
- Lederberg, Joshua, "Does Scientific Progress Come From Projects or People?" *Current Contents*, vol. 29, No. 48, Nov. 27, 1989, pp. 4-12.
- Lederman, Leonard L., "Science and Technology Policies and Priorities: A Comparative Analysis," *Science*, vol. 237, Sept. 4, 1987, pp. 1125-1133.
- Lederman, L.L. et al., "Research Policies and Strategies in Six Countries: A Comparative Analysis," *Science and Public Policy*, vol. 13, No. 2, April 1986, pp. 67-76.
- Leeper, Pepper, "NIH Intramural Program: No Radical Changes Needed," *NewsReport of the National Research Council*, December 1988-January 1989, pp. 2-5.
- Lemonick, Michael D., "Superconductors!," *Time*, May 11, 1987, pp. 64-70, 75.
- Lepkowski, Wil, "Hugh Loweth Key Science Policy Official, Retires," *Chemical & Engineering News*, vol. 64, No. 29, July 21, 1986, pp. 16-18.
- Levin, Sharon and Paula E. Stephan "Research Productivity Over the Life Cycle: Evidence for Academic Scientists," *American Economic Review*, vol. 81, March 1991, pp. 114-132.
- Lievrouw, Leah A., "Four Research Programs in Scientific Communication" *Knowledge in Society*, vol. 1, summer 1988, pp. 6-22.
- Lindblom, Charles E. and David K. Cohen, *Usable Knowledge: Social Science and Social Problem Solving* (New Haven, CT: Yale University Press, 1979).
- Littlejohn Marilyn J. and Christine M. Matthews, "Scientific Misconduct in Academia: Efforts to Address the Issue," *CRS Report for Congress*, 89-392 SPR (Washington DC: Congressional Research Service, June 30, 1989).
- Lollar, Cynthia, "Access to Engineering: New Project for Students and Faculty With Disabilities," *Science*, vol. 251, Feb. 22, 1991, p. 952.
- Long, Janice, "Bush's Science Advisor Discusses Declining Value of R&D Dollars," *Chemical & Engineering News*, vol. 68, No. 17, Apr. 23, 1990, pp. 16-17.
- Long, Janice, "changes in Immigration Law Eyed to Avert Shortage of U.S. Scientists," *Chemical & Engineering News*, vol. 68, No. 34, Aug. 20, 1990, pp. 19-20.
- Long, Janice, "Agencies Compete Well in Science Job Market," *Chemical & Engineering News*, vol. 68, No. 39, Sept. 24, 1990, p. 23.
- Long, Janice, "U.S. Immigration Eased for Professionals," *Chemical & Engineering News*, vol. 68, No. 47, Nov. 19, 1990, p. 13.
- Louis, Karen Seashore et al., "Entrepreneurs in Academe: An Exploration of Behaviors Among Life Scientists," *Administrative Science Quarterly*, vol. 34, March 1989, pp. 110-131.
- Loweth, Hugh "Science Advising and OMB," *The Presidency and Science Advising*, vol. 3, Kenneth W. Thompson (ed.) (Lanham, MD: University Press of America, 1987).
- Lubchenco, Jane et al., Ecological Society of America, "The Sustainable Biosphere Initiative: An Ecological Research Agenda" draft document, Oct. 30, 1990.
- Lundstedt, S.B. and E.W. Colglazier (eds.), *Managing Innovation: The Social Dimensions of Creativity, Innovation and Technology* (New York NY: Pergamon Press, 1982).
- Lynn, L.E. (ed.), *Knowledge and Policy: The Uncertain Connection* (Washington, DC: National Academy of Sciences, 1978).

- Maddox, Anthony B. and Renee P. Smith-Maddox, "Developing Graduate School Awareness for Engineering and Science: A Model," *Journal of Negro Education*, vol. 59, 1990, pp. 479-490.
- "Man-in-Space: The Self-Inflicted Curse of NASA," *Science & Government Report*, vol. 20, No. 13, Aug. 1, 1990, p. 4.
- Mansfield, Edwin, "The Social Rate of Return From Academic Research," *Research Policy*, forthcoming 1991.
- Mansfield, Edwin et al., "Social and Private Rates of Return From Industrial Innovations," *Review of Economics and Statistics*, vol. 61, 1979, pp. 49-52.
- Marcus, Ruth, "New Scholarship Ruling Caught in Legal Cross-Fire," *The Washington Post*, Dec. 18, 1990, p. A8.
- Marsa, Linda, "Howard Hughes Medical Institute Enriches Undergrad Science Studies," *The Scientist*, vol. 5, No. 1, Jan. 7, 1991, pp. 28-29.
- Marshall, Eliot "Data Sharing: A Declining Ethic?" *Science*, vol. 248, May 25, 1990, pp. 952,954-955,957.
- Marshall, Eliot "Two Thumbs Down for Space Station," *Science*, vol. 251, Mar. 22, 1991, p. 1421.
- Marshall, Eliot and David P. Hamilton, "A Glut of Academic Pork" *Science*, vol. 250, Nov. 23, 1990, pp. 1072-1073.
- Martello, Angela, "Governments Led in Funding 1989-90 'Hot Papers' Research," *The Scientist*, vol. 4, No. 16, Aug. 20, 1990, pp. 20,23.
- Martin, B.R. and J. Irvine, *Research Foresight: Creating the Future* (London England: Frances Pinter, 1989).
- Massy, William F., "Capital Investment for the Future of Biomedical Research: A University Chief Financial Officer's View," *Academic Medicine*, vol. 64, August 1989, pp. 433-437.
- McCullough James, "First Comprehensive Survey of NSF Applicants Focuses on Their Concerns About Proposal Review," *Science, Technology, & Human Values*, vol. 14, No. 1, winter 1989, pp. 78-88.
- McCullough, James, Program Evaluation Staff, National Science Foundation "Responses to Bulletin Board Message About Quick-Response, Non-Reviewed Grants," mimeo, Mar. 10, 1990.
- McDonald, Kim A., "Panel Urges Increased Support for Superconductivity, Recommends Specific Goals for Research in Field," *The Chronicle of Higher Education*, vol. 36, No. 48, Aug. 15, 1990, pp. A5, A7.
- McDonald, Kim A., "Researchers Increasingly Worried About the Unreliability of Big Science Projects," *The Chronicle of Higher Education*, vol. 36, No. 48, Aug. 15, 1990, pp. A1, A8-A9.
- McDowell, George R., "Land-Grant Colleges of Agriculture: Renegotiating or Abandoning a Social Contract," *Choices*, 2d quarter 1988, pp. 18-21.
- McMillen, Liz, "Hughes Institute Awards \$61 Million for Science Education," *The Chronicle of Higher Education*, vol. 36, No. 38, May 31, 1990, pp. A19-A20.
- McMillen, Liz, "A Study to Determine the Cost of Raising a Dollar Finds That Average College Spends Just 16 Cents," *The Chronicle of Higher Education*, vol. 37, No. 1, Sept. 5, 1990, pp. A31-A32.
- Merton, Robert K., "The Matthew Effect in Science, II: Cumulative Advantage and the Symbolism of Intellectual Property," *Isis*, vol. 79, No. 299, 1988, pp. 606-623.
- Mervis, Jeffrey, "New Science Advisor Sees Strong Ties to Bush, Public Support As Keys To Job," *The Scientist*, vol. 3, No. 11, May 29, 1989, pp. 2-3.
- Mervis, Jeffrey, "Institutions Respond in Large Numbers to Tiny Facilities Program at NIH, NSF," *The Scientist*, vol. 4, No. 8, Apr. 16, 1990, p. 2.
- Mervis, Jeffrey, "When There's Not Enough Money To Go Around," *The Scientist*, vol. 4, No. 8, Apr. 16, 1990, pp. 1, 8.
- Mervis, Jeffrey, "PCAST Members Ready to Speak President Seems Ready to Listen," *The Scientist*, vol. 4, No. 10, May 14, 1990, pp. 1, 14-15.
- Mervis, Jeffrey, "Science Budget: A Zero-Sum Game," *The Scientist*, vol. 4, No. 24, Dec. 10, 1990, pp. 1, 6.
- Mervis, Jeffrey, "Panel Weighs Overhaul of NSF's Grant System," *The Scientist*, vol. 5, No. 1, Jan. 7, 1991, pp. 1,6-7, 12.
- Mervis, Jeffrey, "NIH Debates Merit of Setting Grant Minimum," *The Scientist*, vol. 5, No. 2, Jan. 21, 1991, pp. 1,4-5.
- Mervis, Jeffrey, "NSF Cuts Back on Faltering Science, Technology Centers," *The Scientist*, vol. 5, No. 3, Feb. 4, 1991, pp. 1,4,24.
- Mervis, Jeffrey, "Bush's Science Budget: Will It Hold?" *The Scientist*, vol. 5, No. 5, Mar. 4, 1991, pp. 1, 6-7.
- Mervis, Jeffrey, "Scientific Conflict of Interest Regulations Offer Loophole to Small Business Program," *The Scientist*, vol. 5, No. 6, Mar. 18, 1991, pp. 1,8-9.
- Miguel, Jean-Francois, "Indicators to Measure Internationalization of Science," unpublished paper, 1989.
- Miller, Julie A., "Alexander Vows to Rescind Policy on Scholarships," *Education Week*, Feb. 13, 1991, pp. 25,28.
- Miller, Neal E., *The Scientist's Responsibility for Public Information* (New York, NY: Scientists' Institute for Public Information Media Resource Service, 1990).
- Miller, Roberta Balstad, National Science Foundation, "The Contribution of Social Research," John Madge Memorial Lecture, London School of Economics, November 1986.
- Monaghan, Peter, "Historians Seek More Detailed Study of Big Science Projects to Inform Debate Among Researchers and Policy Makers," *The Chronicle of Higher Education*, vol. 37, No. 14, Dec. 5, 1990, pp. A5, A8.
- "Money for the Boffins," *The Economist*, vol. 318, Feb. 16, 1991, pp. 15-16.
- Mooney, Carolyn J., "The Dissertation Is Still a Valuable Requirement Survey Finds, But Graduate Students Say They Need Better Faculty Advising," *The Chronicle of Higher Education*, vol. 37, No. 18, Jan. 16, 1991, pp. A15, A22.
- Morgan, Dan, "Nunn Says He'll Investigate Some Defense Bill Projects," *The Washington Post*, Oct. 10, 1990, p. A4.
- Morone, Joseph G., "Federal R&D Structure: The Need for Change," *The Bridge*, vol. 19, fall 1989, pp. 3-13.
- Morns, P.W.G. and G.H. Hough, *The Anatomy of Major Projects: A Study of the Reality of Project Management* (New York, NY: John Wiley & Sons, 1987).
- Morrison, David C., "Hill to NASA: Come Down," *National Journal*, vol. 22, No. 18, May 5, 1990, pp. 1077-1081.
- Morrison, David C., "Pinching the Research Budget," *National Journal*, vol. 22, No. 49, Dec. 8, 1990, p. 2996.
- Moses, Phyllis B. and Charles E. Hess, "Getting Biotech Into the Field," *Issues in Science & Technology*, vol. 4, No. 1, fall 1987, pp. 35-41.
- Mullins, Nicholas C., "The Structure of an Elite: The Advising Structure of the U.S. Public Health Service," *Science Studies*, vol. 2, 1972, pp. 3-29.
- Narin, Francis, *Evaluative Bibliometrics: The Use of Citation Analysis in the Evaluation of Scientific Activity* (Cherry Hill, NJ: Computer Horizons, Inc., 1976).
- Narin, Francis and Edith S. Whitlow, *Measurement of Scientific Cooperation and Coauthorship in CEC-Related Areas of Science*, vol. 1 (Luxembourg: Commission of the European Communities, May 1990).
- Narin, Francis et al., "Patents as Indicators of Corporate Technological Strength," *Research Policy*, vol. 16, August 1987, pp. 143-155.
- "NAS Annual Meeting: Kudos From George Bush, Challenges From Frank Press," *NewsReport of the National Research Council*, vol. 40, June 1990, p. 8.
- "NASA's Citation Impact Dims in 1980s, But Voyager Missions and JPL Shine," *Science Watch*, vol. 1, No. 9, October 1990, pp. 1-2,7-8.
- National Academy of Sciences, *Astronomy and Astrophysics for the 1980s*, report of the Astronomy Survey Committee (Washington DC: National Academy Press, 1982).
- National Academy of Sciences, *The Quality of Research in Science: Methods for Postperformance Evaluation in the National Science Foundation* (Washington, DC: National Academy Press, 1982).
- National Academy of Sciences, *Federal Science and Technology Budget Priorities: New Perspectives and Procedures*, a report in response to the Conference Report on the Concurrent Resolution on the Budget

- for Fiscal Year 1989 (H. Con. Res. 268) (Washington, DC: National Academy Press, 1988).
- National Academy of Sciences, *The National Research Council: A Unique Institution* (Washington DC: National Academy Press, 1990).
- National Academy of Sciences, *A Decade of Discovery in Astronomy and Astrophysics* (Washington, DC: National Academy Press, 1991).
- National Academy of Sciences, Committee on Science and Public Policy, *Basic Research and National Goals*, a report to the House Committee on Science and Astronautics (Washington DC: March 1965).
- National Academy of Sciences, Committee on the Conduct of Science, *On Being a Scientist* (Washington DC: National Academy Press, 1989).
- National Advisory General Medical Sciences Council, "January 1990 Motion and Guidelines Regarding Funding Decisions," unpublished document, Feb. 8, 1990.
- National Institute of General Medical Science, "Minority Biomedical Research Support Program," unpublished document, April 1990.
- National Institutes of Health, *Extramural Trends: FY 1979-1988* (Washington, DC: June 1989)
- National Institutes of Health, *Academic Research Equipment and Equipment Needs in the Biological Sciences: 1984-1987* (Washington, DC: June 1989).
- National Institutes of Health, *NIH Data Book: 1989* (Washington, DC: December 1989).
- National Institutes of Health, Division of Research Grants, "Briefing on NIH FIRST Activity," unpublished document spring 1989.
- National Institutes of Health, Grants Peer Review Study Team *Grants Peer Review: Report to the Director, NIH Phase I* (Washington, DC: December 1976).
- "National Medals Are Pinned on 30 Scientists," *The Washington Post*, Nov. 15, 1990, p. A23.
- National Research Council, *Postdoctoral Appointments and Disappointments* (Washington DC: National Academy Press, 1981).
- National Research Council, *The Engineering Research Centers: Leaders in Change* (Washington, DC: National Academy Press, 1987).
- National Research Council, *Minorities: Their Underrepresentation and Career Differentials in Science and Engineering* (Washington DC: National Academy Press, 1987).
- National Research Council, *Engineering Personnel Data Needs for the 1990s* (Washington DC: National Academy Press, 1988).
- National Research Council, *Biomedical and Behavioral Research Scientists: Their Training and Supply* (Washington DC: National Academy Press, 1989).
- National Research Council, *Investing in Research: A Proposal To Strengthen the Agricultural, Food, and Environmental System* (Washington, DC: National Academy Press, 1989).
- National Research Council, *On Time to the Doctorate: A Study of the Increased Time To Complete Doctorates in Science and Engineering* (Washington, DC: National Academy Press, 1990).
- National Research Council, *Surveying the Nation's Scientists and Engineers: A Data System for the 1990s* (Washington, DC: National Academy Press, 1990).
- National Research Council, *Recruitment, Retention and Utilization of Federal Scientists and Engineers* (Washington, DC: National Academy Press, 1990).
- National Research Council, Computer Science and Technology Board, *The National Challenge in Computer Science and Technology* (Washington, DC: National Academy Press, 1988).
- National Research Council, Office of Scientific and Engineering Personnel, *The Impact of Defense Spending on Nondefense Engineering Labor Markets* (Washington, DC: National Academy Press, 1986).
- National Research Council, Office of Scientific and Engineering Personnel, *Fostering Flexibility in the Engineering Work Force* (Washington, DC: National Academy Press, 1990).
- National Science Board, *Science & Engineering Indicators-1987*, NSB 87-1 (Washington, DC: U.S. Government Printing Office, 1987).
- National Science Board, *Science & Engineering Indicators-1989*, NSB 89-1 (Washington DC: U.S. Government Printing Office, 1989).
- National Science Foundation *Categories of Scientific Research* (Washington, DC: 1979).
- National Science Foundation, *Academic Research Equipment in Selected Science/Engineering Fields: 1982-83 to 1985* \$6, SRS 88-D1 (Washington, DC: June 1988).
- National Science Foundation *Scientific and Engineering Research Facilities at Universities and Colleges: 1988*, NSF 88-320 (Washington DC: September 1988).
- National Science Foundation *Report on Funding Trends and Balance of Activities: National Science Foundation 1951-1988*, special report NSF 88-3 (Washington DC: 1988).
- National Science Foundation, *Profiles-Biological Sciences: Human Resources and Funding* (Washington, DC: 1989).
- National Science Foundation, "Planning and Priority-Setting in the National Science Foundation%" a report to the Committee on Science, Space, and Technology of the U.S. House of Representatives, Feb. 28, 1990.
- National Science Foundation, *FY 1988 Research Proposal and Award Activities by Predominantly Undergraduate Institutions*, NSF 90-36 (Washington, DC: March 1990).
- National Science Foundation, *National Patterns of R&D Resources: 1990*, NSF 90-316 (Washington DC: May 1990).
- National Science Foundation, "Background Material for Long-Range Planning: 1992-1996," NSB-90-81, prepared for a meeting of the National Science Board, June 14-15, 1990.
- National Science Foundation, *Report of the Merit Review Task Force*, NSF 90-113 (Washington DC: Aug. 23, 1990).
- National Science Foundation *Scientific and Engineering Research Facilities at Universities and Colleges: 1990*, NSF 90-318 (Washington DC: September 1990).
- National Science Foundation, *Selected Data on Academic Science/Engineering R&D Expenditures, FY 1989*, NSF 90-321 (Washington DC: October 1990).
- National Science Foundation, "NSF Vital Signs: Trends in Research Support Fiscal Years 1980-89," Nov. 13, 1990, draft document.
- National Science Foundation, *Selected Data on Federal Funds for Research and Development: Fiscal Years 1989, 1990, and 1991* (Washington, DC: December 1990).
- National Science Foundation *Academic Science and Engineering: R&D Funds--Fiscal Year 1988*, NSF 89-326 (Washington, DC: 1990).
- National Science Foundation *Federal Funds for Research and Development: Detailed Historical Tables, Fiscal Years 1955-1990* (Washington DC: 1990).
- National Science Foundation, *Science and Engineering Degrees: 1966-1988 Source Book*, NSF 90-312 (Washington DC: 1990).
- National Science Foundation, *Science and Engineering Doctorates: 1960-89*, NSF 90-320 (Washington, DC: 1990).
- National Science Foundation *Science and Engineering Personnel: A National Overview*, special report (Washington DC: 1990).
- National Science Foundation, *The State of Academic Science and Engineering* (Washington DC: 1990).
- National Science Foundation *Electronic Proposal Review Panels: An Option for NSF Program Officers*, (Washington, DC: forthcoming 1991).
- National Science Foundation, Advisory Committee on Merit Review, *Final Report*, NSF 86-93 (Washington, DC: 1986).
- National Science Foundation, Committee on Physical, Mathematics and Engineering Sciences, *Grand Challenges: High Performance Computing and Communications* (Washington, DC: February 1991).
- National Science Foundation, Office of Inspector General *Semiannual Report to the Congress, No. 2* (Washington DC: Mar. 31, 1990).
- National Science Foundation Program Evaluation Staff, *Proposed Review at NSF: Perceptions of Principal Investigators*, NSF 88-4 (Washington, DC: February 1988).

- Nederhof, A.J. and A.F.J. van Raan, "An International Interview Round on the Use and Development of Science and Technology Indicators," report to the Netherlands Ministry of Education and Sciences, Directorate-General for Science Policy, June 1988.
- Nelkin, Dorothy, "Selling Science," *Physics Today*, November 1990, p. 45.
- Nelkin, Dorothy and Richard Nelson, "Commentary: University-Industry Alliances," *Science, Technology, & Human Values*, vol. 12, winter 1987, pp. 65-74.
- Nelson, C. and D. Pollock (eds.), *Communication Among Scientists and Engineers* (Lexington, MA D.C. Heath, 1970).
- Nelson, Richard T., "Institutions Supporting Technical Advance in Industry," *American Economic Review*, vol. 76, May 1986, pp. 186-189.
- "New Human Genome Centers Established," *Chemical & Engineering News*, vol. 69, No. 6, Feb. 11, 1991, p. 16.
- "Newspaper Science Sections Still on the Rise," *SIP Scope*, vol. 18, spring 1990, p. 1.
- Nichols, Rodney W., "Mae West at Olympus: Five Puzzles for R&D," *Science and Technology and the Changing World Order*, S.D. Sauer (ed.) (Washington, DC: American Association for the Advancement of Science, 1990), pp. 53-69.
- "ND-I Answers Congress With Six-Point Plan," *Washington Fax*, Dec. 18, 1990, p. 1.
- "NIH Crowd Seeks New Ways Out of Money Crunch," *Science & Government Report*, vol. 20, No. 13, Aug. 1, 1990, pp. 2,3.
- "NIH Policy Change Could Shake Up Distribution of NIH Extramural Funding, Official Says," *Washington Fax*, Nov. 23, 1990.
- "NIH To Focus on Quality Over Numbers," *Washington Fax*, Dec. 19, 1990, p. 1.
- Norman, Colin, "Science Budget: Growth Amid Red Ink," *Science*, vol. 251, Feb. 8, 1991, pp. 616-618.
- "NSF Announces Multi-Million Dollar Grants to Form Engineering Education Coalitions," *NSF News*, Oct. 9, 1990.
- "NSF Back to Normal After Budget Pause," *Chemical & Engineering News*, vol. 68, No. 48, Nov. 26, 1990, p. 12.
- "NSF Task Force Discusses Upcoming Report, Agrees to Support SEPS Directorate," *COSSA Washington Update*, Jan. 28, 1991, pp. 1-2.
- "NSF Task Force To Recommend New Directorate for Social and Behavioral Sciences," *COSSA Washington Update*, Dec. 7, 1990, pp. 1-2.
- "NSF, Universities Plan for Women, Minorities," *The Chronicle of Higher Education*, vol. 37, No. 1, Sept. 5, 1990, p. A2.
- Oderman, Mark R., "A Viewpoint on Commercial Space Activities: Realities and Options for the 1990s," *Science and Technology and the Changing World Order*, S.D. Sauer (ed.) (Washington, DC: American Association for the Advancement of Science, 1990), pp. 253-264.
- Office of Management and Budget, Issues '78 (Washington DC: U.S. Government Printing Office, January 1977).
- Ogul, Morris S. and Bert A. Rockman, "Overseeing Oversight: New Departures and Old Problems," *Legislative Studies Quarterly*, vol. 15, February 1990, pp. 5-24.
- "OMB Unlikely To Open Circular A-21 for Amendment According to Indirect Cost Observers," *Washington Fax*, Dec. 13, 1990.
- Orlans, Harold (ed.), *Science Policy and the University* (Washington, DC: The Brookings Institution 1968).
- Orlans, Harold, "Neutrality and Advocacy in Policy Research," *Policy Sciences*, vol. 6, 1975, pp. 107-119.
- "The Outlook in Congress for 7 Major Big Science Projects," *The Chronicle of Higher Education*, vol. 37, No. 2, Sept. 12, 1990, p. A28.
- "The Overhead Question" letters, *Science*, vol. 249, July 6, 1990, pp. 10-13.
- Palca, Joseph "Grants Squeeze Stirs Up Lobbyists," *Science*, vol. 248, May 18, 1990, pp. 803-804.
- Palca, Joseph "NSF, NIH Apply Band-Aids," *Science*, vol. 249, July 27, 1990, p. 352.
- Palca, Joseph "Young Investigators at Risk" *Science*, vol. 249, July 27, 1990, p. 353.
- Palca, Joseph, "NSF Centers Rise Above the Storm," *Science*, vol. 251, Jan. 4, 1991, pp. 19-22.
- Palca, Joseph and Eliot Marshall, "Bloch Leaves NSF in Mainstream," *Science*, vol. 249, Aug. 24, 1990, p. 850.
- Park, Robert L., "The Next Leader of the National Science Foundation Must Press for a Greater U.S. Investment in Science," *The Chronicle of Higher Education*, vol. 36, No. 48, Aug. 15, 1990, p. B3.
- Parker, Linda E. and David L. Clark, "Research at Liberal Arts Colleges: Is More Really Better?" *Research Management Review*, vol. 3, spring 1990, pp. 43-55.
- "Peer Review and Public Policy," *Science, Technology, & Human Values*, vol. 10, No. 3, summer 1985, pp. 3-86.
- Pelz, Donald and Frank D. Andrews, *Scientists in Organizations: Productive Climates for Research and Development*, rev. ed. (Ann Arbor, MI: University of Michigan, Institute for Social Research 1976).
- Pendlebury, David, "Science Leaders: Researchers lb Watch in the Next Decade," *The Scientist*, vol. 4, May 28, 1990, pp. 18-19,22-24.
- Pennisi, Elizabeth, "Ecology Society Reaches Rare Consensus on Research Agenda," *The Scientist*, vol. 4, No. 17, Sept. 3, 1990, pp. 3,9,20.
- Pennisi, Elizabeth, "New Policies at Three Federal Agencies Lend More Support to Outside Research," *The Scientist*, vol. 5, No. 2, Jan. 21, 1991, pp. 3,5.
- Pennisi, Elizabeth and Diana Morgan " 'Brain Decade' Neuroscientist Court Support" *The Scientist*, vol. 4, No. 21, Oct. 29, 1990, pp. 1, 8.
- Perkowitz, Sidney, "Larger Machines Are Breeding Larger Research Teams," *The Scientist*, vol. 3, Oct. 16, 1989, pp. 13, 15.
- Perkowitz, Sidney, "The War Science Waged," *The Washington Post*, Mar. 3, 1991, p. C2.
- Phillips, Don I. and Benjamin S.P. Shen (eds.), *Research in the Age of the Steady-State University* (Boulder CO: Westview Press, 1982).
- "Physics Panel Sets Priorities for 1990s," *Science*, vol. 248, May 11, 1990, p. 681.
- Pollock, Mark, "Basic Research Goals: Perceptions of Key Political Figures," OTA contractor report, June 1990.
- Porter, A.L. and D.E. Chubin, "An Indicator of Cross-Disciplinary Research" *Scientometrics*, vol. 8, 1985, pp. 161-176.
- Porter, Alan L. and Frederick A. Rossini, "Peer Review of Interdisciplinary Research Proposals," *Science, Technology, & Human Values*, vol. 10, No. 3, summer 1985, pp. 33-38.
- Porter, A.L. et al., "Citations and Scientific Progress: Comparing Bibliometric Measures With Scientist Judgments," *Scientometrics*, vol. 13, 1988, pp. 103-124.
- Powell, Corey S., "Universities Reach Into Pork Barrel With Help From Friends in Congress," *Physics Today*, vol. 42, No. 4, April 1990, pp. 43-45.
- Press, Frank, "The Dilemma of the Golden Age," *Congressional Record*, May 26, 1988, pp. E1738-E1740.
- Prewitt, Kenneth "The Public and Science Policy," *Science, Technology, & Human Values*, vol. 7, No. 39, spring 1982, pp. 5-14.
- Price, Derek de Solla, *Science Since Babylon* (New Haven CT: Yale University Press, 1961).
- Price, Derek de Solla, *Little Science, Big Science* (New York, NY: Columbia University Press, 1963).
- Price, Derek de Solla, "Citation Measures of Hard Science, Soft Science, Technology and Conscience," *Communication Among Scientists and Engineers*, C. Nelson and D. Pollock (eds.) (Lexington MA: D.C. Heath 1970), pp. 3-22.
- Rabino, Isaac, "The Impact of Activist Pressures on Recombinant DNA Research," *Science, Technology, & Human Values*, vol. 16, No. 1, winter 1991, pp. 70-87.
- Report of the Advisory Committee on the Future of the U.S. Space Program* (Washington DC: U.S. Government Printing Office, December 1990).

- Rescher, Nicholas, *Scientific Progress: A Philosophical Essay in the Economics of Research in Natural Science* (Pittsburg, PA: University of Pittsburgh Press, 1978).
- Research Associates of Washington *Higher Education Price Indexes: 1990* (Washington, DC: 1990).
- Rettig, Richard A., *Cancer Crusade: The Story of the National Cancer Act of 1971* (Princeton, NJ: Princeton University Press, 1977).
- Ries, Richard R. and Henry Hertzfeld, "Taxonomy of Research: Test of Proposed Definitions on the NSF Budget," unpublished document, n.d.
- Roberts, Leslie, "A Meeting of the Minds on the Genome Project?" *Science*, vol. 250, Nov. 9, 1990, pp. 756-757.
- Roberts, Leslie, "Large-Scale Sequencing Trials Begin," *Science*, vol. 250, Dec. 7, 1990, pp. 1336-1338.
- Robyn, Dorothy et al., "Bringing Superconductivity to Market," *Issues in Science & Technology*, vol. 5, No. 2, winter 1988-1989, pp. 38-45.
- Rosenberg, Nathan and David C. Mowery, *Technology and the Pursuit of Economic Growth* (New York NY: Cambridge University Press, 1989).
- Rosenberg, Nathan and L.E. Birdzell, Jr., "Science, Technology and the Western Miracle," *Scientific American*, vol. 263, No. 5, November 1990, p. 54.
- Rosenzweig, Robert M., president, Association of American Universities, "Address to the President's Opening Session, The Gerontological Society of America," 43rd annual meeting, Boston, MA, Nov. 16, 1990.
- Rosenzweig, Robert M., "The Debate Over Indirect Costs Raises Fundamental Policy Issues," *The Chronicle of Higher Education*, vol. 37, Mar. 6, 1991, p. A40.
- Rossiter, Margaret W., *Women Scientists in America: Struggles and Strategies to 1940* (Baltimore, MD: Johns Hopkins University Press, 1982).
- Rossiter, Margaret W., "Science and Public Policy Since World War II," *Historical Writing on American Science: Perspectives and Prospects*, S.G. Kohlstedt and M.W. Rossiter (eds.) (Baltimore, MD: Johns Hopkins University Press, 1986), pp. 273-294.
- Rotberg, Iris, "I Never Promised You First Place," *Delta Kappan*, vol. 72, December 1990, pp. 296-303.
- "Roundtable: New Challenges for the National Labs," *Physics Today*, February 1991, pp. 24-35.
- Roush, Wade, "Science and Technology in the 101st Congress," *Technology Review*, vol. 93, No. 8, November-December 1990, pp. 59-69.
- Rowell, John M., "Superconductivity Research: A Different View," *Physics Today*, November 1988, pp. 38-46.
- Rush Sean C. and Sandra L. Johnson, *The Decaying American Campus: A Ticking Time Bomb*, joint report of the Association of Physical Plant Administrators of Universities and Colleges and the National Association of College and University Business Officers in cooperation with Coopers and Lybrand (Alexandria VA: 1989).
- Sanders, Ralph and Fred R. Brown (eds.), *Science and Technology: Vital National Assets* (Washington, DC: Industrial College of the Armed Forces, 1966).
- Sapolsky, Harvey, *The Polaris System Development: Bureaucratic Success in Government* (Cambridge, MA: Harvard University Press, 1972).
- Sauer, S.D. (cd.), *Science and Technology and the Changing World Order*, colloquium proceedings, Apr. 12-13, 1990 (Washington, DC: American Association for the Advancement of Science, 1990).
- Savage, James, Office of the President, University of California, "The Distribution of Academic Earmarks in the Federal Government's Appropriations Bills, FY 1980-89," mimeo, Mar. 7, 1989.
- Savage, James, Office of the President University of California, "Apparent Academic Earmarks in the FY 1990 Appropriations Bills," mimeo, Dec. 19, 1989.
- Savage, James, University of Virginia, "Academic Earmarks and the Distribution of Federal Research Funds: A Policy Interpretation," OTA contractor report, July 1990.
- Sawyer, Kathy, "Truly: NASA Needs More Flexibility," *The Washington Post*, Sept. 14, 1990, p. A17.
- Sawyer, Kathy, "NASA: Mission Implausible," *The Washington Post*, Nov. 4, 1990, p. C3.
- Schenet, Margot A., Education and Public Welfare Division, Congressional Research Service, "Higher Education: Reauthorization of the Higher Education Act" issue brief IB90028, May 15, 1990.
- Schlossberg, Ken, "Earmarking by Congress Can Help Rebuild the Country's Research Infrastructure," *The Chronicle of Higher Education*, vol. 36, No. 19, Jan. 24, 1990, p. A48.
- Schneider, Judy (updated by Carol Hardy), *The Congressional Standing Committee System-An Introductory Guide* (Washington DC: Congressional Research Service, May 1989).
- Schrage, Michael, "Blurring the Line Between Funding Science and Funding Economic Growth," *The Washington Post*, Oct. 5, 1990, p. F3.
- Schriesheim, Alan, "Toward a Golden Age for Technology Transfer," *Issues in Science & Technology*, vol. 7, winter 1990-91, pp. 53-58.
- Science: The End of the Frontier?* a report by Leon M. Lederman, President-Elect, to the Board of Directors of the American Association for the Advancement of Science, January 1991.
- Scolnick, Edward M., "Basic Research and Its Impact on Industrial R&D," *Research-Technology Management*, November-December 1990, pp. 21-26.
- "Secrecy in University-Based Research: Who Controls? Who Tells?" *Science, Technology, & Human Values*, vol. 10, spring 1985, pp. 3-114.
- Shapley, Deborah and Rustum Roy, *Lost at the Frontier: U.S. Science and Technology Policy Adrift* (Philadelphia PA: ISI Press, 1985).
- Shapley, Willis H. et al. (eds.), *Research & Development: AAAS Reports I-VIII* (Washington DC: American Association for the Advancement of Science, 1976-83).
- Shinn, Teny, "Scientific Disciplines and Organizational Specificity: The Social and Cognitive Configuration of Laboratory Activities," *Scientific Establishments and Hierarchies*, N. Elias et al. (eds.) (Dordrecht, Holland: D. Reidel, 1982), pp. 239-264.
- Shipman, Pat, "We Need to Give a Chance to Small, Unfashionable Science," *The Chronicle of Higher Education*, vol. 37, Sept. 26, 1990, p. A60.
- Shoop, Tom, "Biology's Moon Shot," *Government Executive*, vol. 23, February 1991, pp. 10-11, 14, 16-17.
- Sigel, J.E. et al., "Allocating Resources Among Aids Research Strategies," *Policy Sciences*, vol. 23, No. 1, February 1990, pp. 1-23.
- Simen, Rolf H., "Research Landscape Requires Careful Gardeners: Science in Unified Germany-Expert's Opinions During Villahugel Talks," *German Research Service Special Science Reports*, vol. 7, January 1991, pp. 11-13.
- Simon, Herbert, "Testimony at Hearings Before the U.S. Congress, Senate Committee on Commerce, Science, and Transportation Subcommittee on Science, Technology, and Space," *National Science and Technology Policy*, Sept. 28-29, 1989, 101st Cong. (Washington, DC: U.S. Government Printing Office, 1989), pp. 264-269.
- Simon, Lisa, "Despite Scientist Shortage, Future Ph.D.s Fear Joblessness," *The Scientist*, vol. 5, No. 1, Jan. 7, 1991, pp. 24, 32.
- Simonton, Dean Keith *Scientific Genius: A Psychology of Science* (Cambridge, England: Cambridge University Press, 1988).
- Small, Henry, "Bibliometrics of Basic Research" OTA contractor report, July 1990.
- Small, Henry and B.C. Griffith, "The Structure of Scientific Literatures I: Identifying and Graphing Specialties," *Science Studies*, vol. 4, 1974, pp. 17-40.
- Small, Henry and David Pendlebury, "Federal Support of Leading Edge Research: Report on a Method for Identifying Innovative Areas of Scientific Research and Their Extent of Federal Support," OTA contractor report, February 1989.
- Small, Henry and Eugene Garfield, "The Geography of Science: Disciplinary and National Mappings," *Journal of Information Science*, vol. 11, December 1985, pp. 147-159.

- Smith, Bruce L. R., *American Science Policy Since World War II* (Washington, DC: The Brookings Institution 1990).
- "Social, Behavioral Sciences Seek Upgrade at NSF," *Science & Government Report*, vol. 20, No. 15, Oct. 1, 1990, p. 6.
- Sommer, John W., Political Economy Research Institute, "Researcher Perspectives on the Federal Research System," OTA contractor report, July 1990.
- Stent, Gunther S., "Prematurity and Uniqueness in Scientific Discovery," *Scientific American*, vol. 227, December 1972, pp. 84-93.
- Stout, Robert L., "Evaluating Scientific Initiatives," letter, *American Scientist*, vol. 77, No. 3, May-June 1989, pp. 211-213.
- Strickland, Stephen P., *Politics, Science, and Dread Disease* (Cambridge, MA: Harvard University Press, 1972).
- Strickland, Stephen P., *Research and the Health of Americans Lexington, MA: Lexington Books, 1978*.
- Strickland, Stephen P., *The Story of the NIH Grants Programs MD: University Press of America, 1989*.
- "Strife Erupts Over Shares of Biomedical Funding," *Science & Government Report*, vol. 20, No. 19, Dec. 1, 1990, pp. 1-4.
- Studer, K.E. and D.E. Chubin, *The Cancer Mission: Social Contexts of Biomedical Research* (Beverly Hills, CA: Sage, 1980).
- Syverson, Peter, "NRC Releases New Study on Increased Time to the Doctorate," *CGS Communicator*, vol. 23, August 1990, p. 8.
- Taylor, S., *Making Bureaucracies Think: The Environmental Impact Strategy of Administrative Reform* (Stanford, CA: Stanford University Press, 1984).
- Teich, Albert H., "Research Centers and Non-Faculty Researchers: A New Academic Role," *Research in the Age of the Steady-State University*, D. Phillips and B.P.S. Shen (eds.) (Boulder CO: Westview Press, 1982), pp. 91-108.
- Teich, Albert H., "Scientists and Public Officials Must Pursue Collaboration to Set Research Priorities," *The Scientist*, vol. 4, No. 3, Feb. 5, 1990, pp. 17, 19.
- Teich, Albert H. and Kathleen M. Gramp, *R&D in the 1980s: A Special Report* (Washington DC: American Association for the Advancement of Science, September 1988).
- Teich, Albert et al., *Congressional Action on Research and Development in the FY 1991 Budget* (Washington, DC: American Association for the Advancement of Science, 1990).
- Thomas, Eleanor C. and Leonard L. Lederman, National Science Foundation "Indirect Costs of Federally Funded Academic Research" unpublished document, Aug. 3, 1984.
- Thompson, Dick "The Growing Crisis in Medical Science," *Time*, Dec. 17, 1990, p. 21.
- Thompson, Kenneth W. (ed.), *The Presidency and Science Advising*, vol. 3 Lanham, MD: University Press of America, 1987).
- Thompson, Larry, "NIH Gets Its First Woman Director," *The Washington Post*, Mar. 26, 1991, health section, p. 8.
- Tiftt, Susan, "Hard Times on the Old Quad," *Time*, Oct. 29, 1990, p. 92.
- Tiftt, Susan "Scandal in the Laboratories," *Time*, Mar. 18, 1991, pp. 7475.
- "Title XIII-Budget Enforcement," *Congressional Record-House* (Washington, DC: U.S. Government Printing Office, Oct. 26, 1990), pp. H12743-H12744.
- Tobias, Sheila, *They're Not Dumb, They're Different: Stalking the Second Tier* (Tucson, AZ: Research Corp., 1990).
- Tech, Thomas, "A Return to Teaching?" *U.S. News & World Report*, Oct. 15, 1990, pp. 107-109.
- Turner, Sarah E. and William G. Bowen, 'The Flight From ARTs and Sciences: Trends in Degrees Conferred,' *Science*, vol. 250, Oct. 26, 1990, pp. 517-521.
- Turney, Jon "End of the Peer Show," *New Scientist*, vol. 127, Sept. 22, 1990, pp. 38-42.
- U.S. Congress, Office of Technology Assessment, *Civilian Space Stations and the U.S. Future in Space* (Springfield, VA: National Technical Information Service, November 1984).
- U.S. Congress, Office of Technology Assessment, *Demographic Trends and the Scientific and Engineering Work Force, OTA-TM-SET-35* (Springfield, VA: National Technical Information Service, December 1985).
- U.S. Congress, Office of Technology Assessment *The Regulatory Environment for Science, OTA-TM-SET-34* (Springfield, VA: National Technical Information Service, February 1986).
- U.S. Congress, Office of Technology Assessment *Intellectual Property Rights in an Age of Electronics and Information, OTA-CIT-302* (Washington, DC: U.S. Government Printing Office, April 1986).
- U.S. Congress, Office of Technology Assessment *Research Funding as an Investment: Can We Measure the Returns? OTA-TM-SET-36* (Washington, DC: U.S. Government Printing Office, April 1986).
- U.S. Congress, Office of Technology Assessment *Mapping Our Genes: Genome Projects--How Big, How Fast? OTA-BA-373* (Washington, DC: U.S. Government Printing Office, April 1988).
- U.S. Congress, Office of Technology Assessment, *Educating Scientists and Engineers: Grade School to Grad School, 0114-SET-377* (Washington, DC: U.S. Government Printing Office, June 1988).
- U.S. Congress, Office of Technology Assessment *U.S. Investment in Biotechnology, OTA-BA-360* (Washington, DC: U.S. Government Printing Office, July 1988).
- U.S. Congress, Office of Technology Assessment *Elementary and Secondary Education for Science and Engineering, OTA-TM-SET-41* (Washington, DC: U.S. Government Printing Office, December 1988).
- U.S. Congress, Office of Technology Assessment, *Higher Education for Science and Engineering, OTA-BP-SET-52* (Washington DC: U.S. Government Printing Office, March 1989).
- U.S. Congress, Office of Technology Assessment *Holding the Edge: Maintaining the Defense Technology Base, OTA-ISC-420* (Washington, DC: U.S. Government Printing Office, April 1989).
- U.S. Congress, Office of Technology Assessment *Making Things Better: Competing in Manufacturing, OTA-ITE-443* (Washington DC: U.S. Government Printing Office, February 1990).
- U.S. Congress, Office of Technology Assessment *Agricultural Research and Technology Transfer Policies for the 1990s, OTA-F-447* (Washington, DC: U.S. Government Printing Office, March 1990).
- U.S. Congress, Office of Technology Assessment *High-Temperature Superconductivity in Perspective, OT4-E-440* (Washington DC: U.S. Government Printing Office, April 1990).
- U.S. Congress, Office of Technology Assessment "Proposal Pressure in the 1980s: An Indicator of Stress on the Federal Research System" staff paper of the Science, Education and Transportation program, April 1990.
- U.S. Congress, Office of Technology Assessment, "Evaluating Defense Department Research" background paper of the International Security and Commerce Program, June 1990.
- U.S. Congress, Office of Technology Assessment, *Delivering the Goods: Public Works Technologies and Management, OTA-SET-477* (Washington, DC: U.S. Government Printing Office, April 1991).
- U.S. Congress, Office of Technology Assessment, *Government Policies and Pharmaceutical Research and Development* (Washington, DC: U.S. Government Printing Office, forthcoming 1991).
- U.S. Congress, House Committee on Appropriations, *Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriation Bill, 101st Cong.*, report 101-591 (Washington, DC: U.S. Government Printing Office, July 12, 1990).
- U.S. Congress, House Committee on Government Operations, *Are Scientific Misconduct and Conflicts of Interest Hazardous to Our Health?* 101st Cong. (Washington DC: U.S. Government Printing Office, September 1990).
- U.S. Congress, House Committee on Science and Technology, Subcommittee on Domestic and International Scientific Planning and Analysis, *Measuring and Evaluating Results of Federally Supported Research and Development: Science Output Indicators-Part I, Special Oversight Hearings, 94th Cong., May 19 and 26, 1976* (Washington, DC: U.S. Government Printing Office, 1976).
- U.S. Congress, House Committee on Science, Space, and Technology, Subcommittee on Investigations and Oversight, *Maintaining the*

- Integrity of Scientific Research, IOLst Cong., January 1990 (Washington, DC: U.S. Government Printing Office, 1990).
- U.S. Congress, House Committee on Science, Space, and Technology, Subcommittee on Energy Research and Development, *Role of the Department of Energy's National Laboratories in Science, Engineering and Mathematics Education*, IOLst Cong., June 13, 1990 (Washington, DC: U.S. Government Printing Office, 1990).
- U.S. Congress, House Committee on Science, Space, and Technology, Task Force on Science Policy, *Research Project Selection*, hearings, 99th Cong., Apr. 8-10, 1986 (Washington, DC: U.S. Government Printing Office, 1986).
- U.S. Congress, House Committee on Science, Space, and Technology, Task Force on Science Policy, *A History of Science Policy in the United States, 1940-1985*, 99th Cong. (Washington DC: U.S. Government Printing Office, September 1986).
- U.S. Congress, House Committee on Science, Space, and Technology, *The Hearings on Adequacy, Direction, and Priorities for the American Science and Technology Effort*, hearings, Feb. 28-Mar. 1, 1989, IOLst Cong. (Washington, DC: U.S. Government printing Office, 1989).
- U.S. Department of Agriculture, "Strategy for the '90s for USDA Forest Service Research," review copy, February 1990.
- U.S. Department of Agriculture, Cooperative State Research Service, *National Research Initiative Competitive Grants Program: Program Description* (Washington, DC: 1990).
- U.S. Department of Commerce, Bureau of Economic Analysis, Government Division *Biomedical Research and Development Price Index*, report to the National Institutes of Health Mar. 30, 1990.
- U.S. Department of Energy, Office of the Inspector General, *Special Report on the Department of Energy's Superconducting Super Collider Program, DOE/IG-0291* (Germantown, MD: Nov. 16, 1989).
- U.S. General Accounting Office, *Science Indicators: Improvements Needed in Design, Construction, and Interpretation*, PAD-79-35 (Washington, DC: 1979).
- U.S. General Accounting Office, *Biotechnology: Analysis of Federally Funded Research* (Washington, DC: U.S. Government Printing Office, 1986).
- U.S. General Accounting Office, *University Funding: Assessing Federal Funding Mechanisms for University Research*, GAO/RCED-86-75 (Washington, DC: February 1986).
- U.S. General Accounting Office, *University Funding: Patterns of Distribution of Federal Research Funds to Universities* (Washington, DC: February 1987).
- U.S. General Accounting Office, *University Funding: Information on the Role of Peer Review at NSF and NIH*, GAO/RCED-87-87FS (Washington, DC: March 1987).
- U.S. General Accounting Office, *U.S. Science and Engineering Base: A Synthesis of Concerns About Budget and Policy Development*, GAO/RCED-87-65 (Washington, DC: March 1987).
- U.S. General Accounting Office, *National Science Foundation: Problems Found in Decision Process for Awarding Earthquake Center*, GAO/RCED-87-146 (Washington, DC: June 1987).
- U.S. General Accounting Office, *Engineering Research Centers: NSF Program Management and Industry Sponsorship*, GAO/RCED-88-177 (Washington, DC: August 1988).
- U.S. General Accounting Office, *Federal Work Force: A Framework for Studying Its Quality Over Time*, GAO/PEMD-88-27 (Washington DC: August 1988).
- U.S. General Accounting Office, *Budget Issues: Earmarking in the Federal Government* (Washington, DC: January 1990).
- U.S. General Accounting Office, *Defense Research: Information on Selected University Research Projects*, GAO/NSIAD-90-223FS (Washington, DC: August 1990).
- van Raan, A.F.J. (ed.), *Handbook of Quantitative Studies of Science and Technology* (Amsterdam, The Netherlands: North-Holland, 1988).
- Van Valkenburg, Mac, "Turning Off Students: Our Gatekeeper Courses," *Engineering Education*, vol. 80, No. 6, September/October 1990, p. 620.
- Vetter, Betty and Eleanor Babco (eds.), *Human Resources in Science and Technology: Improving U.S. Competitiveness*, proceedings of a Policy Symposium for Government Academia and Industry, Mar. 15-16, 1990 (Washington, DC: Commission on Professionals in Science and Technology, 1990).
- Walker, Terry M., "Influencing Federal Support for Computing Research," *Computing Research News*, vol. 2, July 1990, pp. 1, 10-11.
- Walsh, Eileen and Karen Bartholomew, "Indirect Costs Subject of Three Separate Reviews," *Campus Report*, Sept. 12, 1990, pp. 1,6.
- Warsh, David, "Will Florida Become a New Bastion of Industrial Science?" *The Washington Post*, Sept. 12, 1990, p. C3.
- Waterman, Alan T., "Basic Research in the United States," *Symposium on Basic Research*, Dael Wolffe (ed.) (Washington DC: American Association for the Advancement of Science, 1959), pp. 17-40.
- Watts, K.M. and J.C. Higgins, "The Use of Advanced Management Techniques in R&D," *Omega*, vol. 15, January 1987, pp. 21-29.
- "Ways and Means," *The Chronicle of Higher Education*, vol. 37, Feb. 20, 1991, p. A25.
- Weinberg, A.M., *Reflections on Big Science* (Cambridge, MA: MIT Press, 1966).
- Weiner, Charles, "Universities, Professors, and Patents: A Continuing Controversy," *Technology Review*, vol. 89, No. 2, February-March 1986, pp. 33-43.
- Weiss, Carol H., "Improving the Linkage Between Social Research and Public Policy," *Knowledge and Policy: The Uncertain Connection*, L.E. Lynn (ed.) (Washington, DC: National Academy of Sciences, 1978), pp. 23-81.
- Weiss, Rick, "NIH: The Price of Neglect," *Science*, vol. 251, Feb. 1, 1991, pp. 508-511.
- Wells, William G., School of Government and Business Administration George Washington University, "Science Advice and the Presidency, 1933-76," unpublished dissertation, 1977.
- Wheeler, David L., "Biomedical Researchers Seek New Sources of Aid for Young Scientists," *The Chronicle of Higher Education*, vol. 36, No. 42, July 5, 1990, p. A23.
- Wheeler, David L., "NH-I Plan Would Trim Length and Growth of Research Grants," *The Chronicle of Higher Education*, vol. 37, No. 15, Dec. 12, 1990, p. A21.
- Wheeler, David L., "Scientists' Complaints Prompt Revisions in NIH Cost-Cutting Plan," *The Chronicle of Higher Education*, vol. 37, No. 17, Jan. 9, 1991, p. A19.
- White, Howard D. and Katherine W. McCain, "Bibliometrics," *Annual Review of Information Science and Technology*, vol. 23, 1989, pp. 119-186.
- White, John A., "Disputing Some Claims About the NSF," *The Chronicle of Higher Education*, vol. 37, No. 3, Sept. 19, 1990, p. B4.
- White, John R., "President's Letter: Reflections on Snowbird," *Communications of the ACM*, vol. 33, September 1990, p. 19.
- White, Robert M., "Science, Engineering, and the Sorcerer's Apprentice," presidential address to the National Academy of Engineering, Washington, DC, Oct. 2, 1990.
- Wolffe, Dael (ed.), *Symposium on Basic Research* (Washington, DC: American Association for the Advancement of Science, 1959).
- Working Group on Peer Review, *Peer Review*, a report to the Advisory Board for the Research Councils (London England: November 1990).
- Wormer, Michael D. (ed.), *Congressional Quarterly's Guide to Congress* (Washington DC: Congressional Quarterly Inc., 1982).
- worthy, ward, "Research Universities Pay More Heed to Freshman Science," *Chemical & Engineering News*, vol. 68, No. 18, Apr. 30, 1990, pp. 27-28.
- worthy, Ward, "New Beckman Institute Promotes Broad-Ranging Research Effort," *Chemical & Engineering News*, vol. 68, No. 34, Aug. 20, 1990, pp. 23-24.
- Wyszomirski, Margaret Jane, "The Art and Politics of Peer Review," *Vantage Point*, spring 1990, pp. 12-13.
- Yamamoto, S.S., "A Genuine Global Partnership?" *Nature*, vol. 346, Aug. 23, 1990, p. 692.

- Youn, Ted I.K., "Studies of Academic Markets and Careers: An Historical Review,' *Academic Labor Markets and Careers*, David W. Breneman and Ted I.K. Youn (eds.) (Philadelphia, PA: The Falmer Press, 1988), pp. 8-27.
- Yudken, Joel S. and Barbara Simons, "A Report Summary-Final Report of the Project on Funding Policy in Computer Science," unpublished document Oct. 15, 1989.
- Ziman, John, *An Introduction to Science Studies* (Cambridge, England: Cambridge University Press, 1984).
- Ziman, John *Knowing Everything About Nothing: Specialization and Change in Scientific Careers* (Cambridge, England: Cambridge University Press, 1987).
- Ziman, John, *Restructuring Academic Science* (London, England: Science Policy Support Group, 1989).
- Ziman, John, "Research as a Career," *The Research System in Transition*, S.E. Cozzens et al. (eds.) (Dordrecht, Holland: Kluwer, 1990), pp. 345-359.
- Zuckerman, H. and R.B. Miller (eds.), "Science Indicators: Implications for Research and Policy," *Scientometrics*, vol. 2, October 1989, special issue, pp. 32748.
- Zurer, Pamela, "Biomedical Research: Calls for Shifts in Funding Attacked,' *Chemical & Engineering News*, vol. 68, No. 49, Dec. 3, 1990, p. 6.
- Zurer, Pamela, "NSF Young Investigator Program May Be Slashed," *Chemical & Engineering News*, vol. 68, No. 50, Dec. 10, 1990, p. 5.
- Zurer, Pamela, "Research Funding: NH-I Airs Cost-Containment Plan," *Chemical & Engineering News*, vol. 68, No. 52, Dec. 24, 1990, pp. 4-5.