

# Jon D. Miller

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## Education

A.B. Ohio University, 1963. Major: government. Graduated magna cum laude.  
M.A. University of Chicago, 1965. Political science.  
Ph.D. Northwestern University, 1970. Political science.

## Honors & Awards

Omicron Delta Kappa, 1962-present.  
Phi Beta Kappa, 1963-present.  
Danforth Foundation Fellowship, 1963-69.  
National Opinion Research Center Fellow, 1964-65.  
Sigma Xi National Lecturer, 1989-91.  
President, International Council for the Comparative Study of the Public Understanding of Science and Technology, 1990-1, 1993-4, 1996-7.  
Fellow, American Association for the Advancement of Science, 2003-present.

## Current Appointments

Research Scientist and Director of the International Center for the Advancement of Scientific Literacy, Institute for Social Research. University of Michigan.  
Director of the Longitudinal Study of American Life, Institute for Social Research, University of Michigan.  
Research Scientist, School of Education, University of Michigan.  
Visiting Professor, Graduate University of the China Academy of Sciences, Beijing, China.

## Previous Appointments

John A. Hannah Professor of Integrative Studies (with academic appointments in the Department of Political Science, the Department of Communication, and the Division of Science and Mathematics Education, Michigan State University) (8/2006 to 7/2010).  
Professor and Director, Center for Biomedical Communications, and, Professor, Departments of Cell and Molecular Biology and Preventive Medicine, Feinberg School of Medicine, Northwestern University (5-1999 to 7-2006).  
Vice President, Chicago Academy of Sciences, and Director, International Center for the Advancement of Scientific Literacy, Chicago Academy of Sciences (6-1991 to 6-2000).  
Professor of Political Science, Northern Illinois University, DeKalb, Illinois (10-1974 to 5-1999).  
Director, Public Opinion Laboratory, Northern Illinois University, DeKalb, Illinois (10-1978 to 6-1991).  
Associate Dean of the Graduate School (Research), Northern Illinois University, DeKalb, Illinois (10-1974 to 12-1982).  
Director of Research Services and Assistant Professor of Political Science, Chicago State University, Chicago, Illinois (10-1970 to 10-1974).  
Director, Division of Research, American Hospital Association, Chicago, Illinois (9-1967 to 10-1970).  
Associate Executive Director, National Advisory Commission on Health Manpower, Office of the President, Washington, D. C. (9-1966 to 9-1967).

## Funded Research

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Principal Investigator of a National Aeronautics and Space Administration cooperative agreement (NNX16AC66A) to demonstrate the feasibility of improving scientific literacy and lifelong learning through a just-in-time dissemination process. This \$5.2 million award supports (1) two-wave national surveys of American adults each year over the next five years, and (2) consultation and advisory services to NASA's Science Mission Directorate and its divisions and missions. The surveys will allow new annual estimates of civic scientific literacy (CSL) among American adults and will explore the impact of the emerging just-in-time information acquisition system on the sources and structure of CSL.

Principal Investigator of a National Institutes of Health/National Institute of Aging grant (5R01AG049624-02) to support the continuation of the original cohorts of the Longitudinal Study of American Youth and the transition of the LSAY into the Longitudinal Study of American Life (LSAL). This \$3.2 million award will provide for five additional annual surveys of the young adults in the original LSAY. The extended LSAL will continue to measure some of the core educational and employment of these young adults and begin to build a longitudinal record of respondent health, mid-life activities, health awareness, and the understanding of the transition from mid-life into later adulthood.

Principal Investigator of National Science Foundation grants (MDR-8550085, REC96-27669, RED-9909569, REC-0337487, DUE-0525357, DUE-0712842, DUE-0856695, DRL-0917535, HRD-1348619) to design and conduct the Longitudinal Study of American Youth. This cumulative 28-year award of approximately \$18 million supported (1) the collection of data from 5900 students and parents and approximately 2000 teachers over a 26-year period and (2) the initiation of a new cohort of 7<sup>th</sup> grade students in the fall of 2014. The results from the Longitudinal Study of American Youth continue to provide important longitudinal measures of adolescent and young adult socialization to science, mathematics, technology, and politics that have not been available before. Recent grant support focused on monitoring changes in educational and occupational activities, including involvement in the scientific and technical workforce. The 2008 cycle of data collection measured civic scientific literacy and citizen understanding of scientific and technical issues and new annual cycles in 2009, 2010, and 2011 examined the uses of new information technologies and informal learning about science. The new 2015 cohort of 7<sup>th</sup> grade students will begin one generation after the original LSAY cohorts in 1987.

Principal Investigator of a National Science Foundation grant (SBE-1628141) to support United States participation in the 2017 World Values Study. This \$321,088 award will support the conduct of a national survey of American adults age 18 and older using a common questionnaire that will be conducted in approximately 90 countries worldwide. The data collection will occur in April and May of 2017 and will be conducted by AmeriSpeak, a panel service of the National Opinion Research Center.

Co-Principal Investigator of a grant from the Templeton Foundation for a national survey of scientific virtues of exemplary scientists in the United States. Building on the work of Robert Pennock at Michigan State University, a national survey has been designed to ask a sample of exemplary scientists about the values inherent in their profession and in their own careers. A smaller comparative sample of younger (pre-tenure) scientists from similar academic departments will be conducted to measure the value beliefs of this group. A pilot study was conducted in 2012 and a national survey was launched in the fall of 2013.

Principal Investigator of a subcontract from Sesame Workshop for an evaluation of the One World One Sky project, funded by the National Science Foundation. The project uses Big Bird and other characters from Sesame Street to introduce some basic ideas about astronomy to four to six year old children in China and the United States. I was responsible for the design and conduct of the evaluation in both countries. The project concluded in 2011.

Principal Investigator of a grant from the Foundation BBVA (Madrid, Spain) to conduct a study of public attitudes toward biotechnology in the United States and to participate in the analysis of nine parallel studies conducted in Britain, France, Germany, Italy, Spain, Denmark, the Netherlands, Austria, and Poland. This \$399,000 award supported the collection of the US data in December, 2003. Two additional waves of data collection from the same respondents was supported to allow a pre-election and post-election study of the 2004 U.S. presidential election and the role of stem cell research and other scientific issues on voter decisions.

Principal Investigator of an award from the Cancer Coalition for the design and conduct of two national studies. One study used a national online sample from Knowledge Networks to examine the understanding of and attitudes toward cancer clinical trials among adults. A second national sample of adults who have been diagnosed with cancer was conducted through Knowledge Networks. Both studies updated earlier work by Harris Interactive in 2000 and expanded the measurement and analysis to adults identified as being at higher than average risk of cancer. The data was collected in the March and April, 2005, and reports have appeared in the *Journal of Clinical Oncology*, the *Journal of Oncology Practice*, and *Health Communication*.

Principal Investigator of a national evaluation of the impact of a ScienCentral, Inc., program to provide short science news segments to the local affiliates of ABC and NBC throughout the nation. Funded by the National Science Foundation, this evaluation uses a national sample of adults obtained from Knowledge Networks to study the retention of science information from local television news stories provided through ScienCentral. Baseline and follow-up surveys were conducted in 2003, 2004, 2005, and 2007-8. A summary article was published in *Science Communication* in 2006.

Principal Investigator of an award from the National Aeronautics and Space Administration and the Department of Energy to conduct a national study of science policy leaders and space policy leaders. This \$225,000 study builds on Miller's previous studies of science policy leaders and energy policy leaders in 2002 and on his three national leadership studies in the 1980's. This work provided an empirical foundation for understanding the formulation of science policy in the United States.

Co-Principal Investigator of an NIH grant to study racial disparities in asthma (NIH/NHBLI) to study racial disparities in asthma in the metropolitan Chicago area. This \$3 million project seeks to define and measure the relative influence of social and psychological factors in the development, duration, and treatment of asthma. A parallel \$3 million award to Cook County Hospital is designed to facilitate cooperation between Northwestern University and CCH in the conduct of community-based research. A longitudinal panel of adults with asthma and adult caregivers for children with asthma was conducted over a period of 18 months and the analysis of the data is underway.

Principal Investigator of a Department of Energy grant (DE-FC26-01NT41313) to support a national study of the information needs of science policy, energy policy, and biomedical policy leaders. This three-year award of \$196,000 supported (1) the identification and selection of a national sample of science, energy, and biomedical policy leaders and (2) the conduct of a national survey to determine the current level of information held by leaders and the areas in which more information is needed. A supplemental award was provided by Sandia National Laboratories to increase the sample size.

Principal Investigator of the National Science Foundation grant (ESI-0003029) to support the exploration and conceptualization of the public understanding of scientific research. This award will support a review of the literature concerning the public understanding of scientific research, in-depth interviews with leading scholars in the popularization of science and technology, and the development of recommendations for a longer-term research program to enhance our understanding of how various segments of the public views, conceptualizes, and understands scientific research. A summary article was published in *Public Understanding of Science* in 2004.

Director of a national study of Fellows of the American College of Surgeons to determine their practice patterns, information acquisition behaviors, and policy concerns. A national study of Fellows was conducted to measure information acquisition behaviors and the impact of new information technologies on access to and use of the professional literature and to continuing medical education (CME) programs.

Director of a Robert Wood Johnson Foundation project to improve the coverage of health and medical news in the Midwest through a set of press briefings. Each briefing is focused on one subject and is organized around two or three experts on the topic. All members of the working press (including free-lance writers) with responsibility for health and/or medical subject matters are invited to each briefing. This \$350,000 supported 12 press briefings over a 24-month period.

Director of the Medill Biomedical Journalism Program, sponsored by separate grants from the Eli Lilly corporation and the National Institutes of Health. Operated in the summers of 2000 and 2001, this program provided a 10-week experience for master's level journalism students from the Medill School of Journalism. Participating students completed a two-week laboratory sequence in which they learned to move and modify DNA from selected cells, monitored a working biomedical research director for eight weeks in his or her laboratory, completed an eight-week seminar on biomedical communications, and completed an eight-week seminar on health policy issues.

Principal Investigator for a contract from the National Science Foundation (SRS99-06416) for the design and conduct of a national survey of the public understanding of science and technology in 1999. This \$270,000 award supported the design, conduct, and analysis of the 1999 Science and Engineering Indicators Study. The field work was subcontracted to the National Opinion Research Center at the University of Chicago.

Principal Investigator for a contract from the National Science Foundation (SRS92-17876) for the design and conduct of two national surveys of the public understanding of science and technology in 1992 and two additional surveys in 1995 and 1997. This \$1.7 million award supported the continuation of the traditional NSF Science Indicators study in 1992, 1995, and 1997. The award supported the initiation of a new national survey series for the National Institutes of Health designed to measure the level of public understanding of basic biomedical concepts. In addition, this award supports the planning of additional national surveys. The results of this work were published in Miller and Kimmel's *Biomedical Communications* (Academic Press, 2001).

Principal Investigator of a National Science Foundation grant (SRS97-32170) for the design and conduct of a national study of public understanding of and attitudes toward biotechnology in the United States. This \$100,000 award covered the field cost and data editing for a national probability sample of 1,500 adults. The study includes a core of questions first asked in a 1996 Eurobarometer study (46.1) that included 17,000 respondents in the 15 European Union member states plus Norway. The study also links to a 1993 NIH study of biomedical literacy in the United States and to earlier U.S. studies conducted by Tom Hoban.

Principal Investigator of two Cooperative Research Grants from the National Aeronautics and Space Administration (NCC5-183). These collaborative research awards provide approximately \$1.2 million over a six-year period to support research concerning the public understanding of space sciences and attitudes toward the space program. The cooperative research program includes the provision of technical assistance to NASA in the evaluation of educational programs and the collection and maintenance of national and international data sets concerning public understanding of and attitudes to space exploration.

Principal Investigator of a National Science Foundation grant (SRS90-02467) for the design and conduct of a 1990 national study of the public understanding of science and technology in the United States. This \$143,000 award supported the continuation of a series of awards beginning in 1979 that have provided the basis for the public attitudes chapter in the National Science Board's biennial *Science Indicators* report to the President and the Congress. The 1990 study was designed to maximize both the time-series nature of the previous studies and the opportunities for cross-national studies with Canada, the European Community, and Japan. A total of 2033 interviews were collected by telephone during October and November of 1990 and a final report was published by the National Science Foundation in 1992.

Principal Investigator of a contract from the American Association for the Advancement of Science (AAAS) to conduct a national study of 2000 scientists and engineers concerning their patterns of communication and information sharing within the United States and internationally. The study was designed to assess the impact of federal statutes and regulations concerning the exportation of scientific and technical information and specified technologies to selected nations.

Principal Investigator of a contract from the Educational Testing Service to locate and interview approximately 3000 young adults who were in the top three per cent of SAT scorers in 1985. Each student completed a questionnaire in 1985 and again in 1987. This third wave study focused on the completion of the baccalaureate, the decision whether or not to seek an advanced degree, and the selection of a graduate school for those seeking a graduate degree.

Principal Investigator of a National Science Foundation grant (SRS88-07409) to conduct a 1988 national study of public attitudes toward science and technology in the United States and to develop indicators of public attitudes that could be used in the NSF *Science Indicators* series. The 1988 study involved the development of common questions with a study team from Oxford University (UK) which conducted a similar study in the UK. The \$125,000 award covered 18 months.

Principal Investigator of a National Science Foundation grant (SRS85-17581) to conduct a 1985 national study of public attitudes toward science and technology in the United States and to develop indicators of public attitudes that could be used in the NSF *Science Indicators* series. This grant also provided for the development of liaisons with survey research leaders in Western Europe and for the stimulation of cross-national studies between Europe and the United States. The original award of \$88,000 supported a national survey of 2005 adults in November and December, 1985. Subsequent to the Challenger accident in January, 1986, a supplemental award of \$31,200 was made to support a follow-up survey of the same respondents interviewed in late 1985. The follow-up study was completed within two weeks after the accident. A third NSF grant for \$54,000 supported an additional follow-up study approximately three weeks after the report of the Rogers Commission. The data from the three-wave panel study have been reported in an article in *Space Policy*.

Principal Investigator of a contract with Lawrence Livermore National Laboratory for a national study of the attitudes of science policy leaders toward energy policy generally and fusion energy in particular. This \$42,000 award supported a study of approximately 1200 science policy leaders. A 1981 sample of science policy leaders who had been interviewed a second time in 1984, were re-interviewed for a third time in the 1986 study, creating a three-wave leadership panel on science policy. The final report was issued in the fall of 1986 and additional analyses have appeared in the journal literature.

Principal Investigator of a contract with Monsanto to design and conduct a national study of the attitudes of religious, environment, and science policy leaders toward biotechnology. Approximately 1100 leaders were interviewed in late 1984 concerning their attitudes toward biotechnology and other science policy issues. The science policy leaders in the 1981 NSF-sponsored leadership were re-interviewed as a part of this research, beginning a panel of science policy leadership attitude measures. A final report was prepared for Monsanto and other reports have appeared in the journal literature.

Principal Investigator of a contract with the French National Foundation for Political Science to conduct a study of the attitudes of American industrial leaders toward the technological competence of other nations, with special reference to France. A total of 800 industrial leaders were interviewed. This \$65,000 project was completed in the spring of 1986.

Principal Investigator of a contract with the Pharmaceutical Manufacturers' Association for a study of public attitudes toward the quality and cost of health care services in the United States. This study of 1500 individuals focused on personal utilization of health care services and products, the evaluation of the quality and cost of those services and products, and an assessment of selected health care policy preferences. This \$58,000 project was completed in the spring of 1986.

Principal Investigator of a contract with Simmons Market Research Bureau (New York City) for the design and collaborative conduct of the 1985 College Youth Study. This 1985 national survey of approximately 2,000 college students is the second of a series of national college surveys conducted jointly with Simmons which will provide a continuing data base to study the attitudes and behavior of American college students.

Principal Investigator of a National Science Foundation grant (SED80-18947) to examine critical factors in the development of attentiveness to science and technology policy issues. This \$122,000 award supported extensive secondary analyses of national data sets relevant to scientific literacy and interest in science and technology policy issues. A National Advisory Committee was formed and provided linkages to other scholars throughout the nation.

Principal Investigator of a National Science Foundation grant (SRS81-05662) to survey public and leadership attitudes toward science and technology and to study the process of political mobilization in regard to science and technology policy. This \$125,000 award supported a national survey (N=3200) of public attitudes and the first national survey of a sample of non-governmental leaders of science policy. One book -- *The American People and Science Policy* -- and numerous papers and articles have been produced from the data.

Principal Investigator of a contract with the Museum of Science and Industry (Chicago) to study current science and mathematics education in the Northern Illinois-Northern Indiana area. The study involved a survey of approximately 1500 elementary and secondary teachers and gathered information concerning teacher education and background, current classroom practices, and attitudes toward scientific and technological literacy.

Principal Investigator of a contract with Sauk Valley College (Illinois) to study citizen interest in and knowledge about the college and to analyze voter participation in a November, 1983, funding referendum for the college. A pre-election survey of 500 district residents was conducted in October, 1983, and a post-election study was conducted in November, 1983. Two analytic reports were prepared.

Principal Investigator of a joint POL-Simmons Market Research Bureau survey of college youth. This survey (N=2100) is one of the first university-industry co-operative agreements in the social sciences in the United States. The contract provided \$18,000 to the POL and Simmons provided approximately \$30,000 in postage, printing, and other direct services.

Principal Investigator of a contract with the Annenberg School of Communication at the University of Pennsylvania for the conduct of a national survey of public images of scientists and the role of television in the creation of these images. The \$33,000 contract ran through December, 1983.

Principal Investigator of a grant from the National Institute of Education and the National Assessment of Educational Progress to construct an integrated data archive for two national surveys of 9, 13, and 17 year-olds (N=140,000) to foster greater secondary analysis of the NAEP data. A User's Guide was produced and was used in a series of professional development seminars to be conducted for prospective secondary analysts.

Principal Investigator of a National Science Foundation contract with the National Opinion Research Center (SRS78-16839) for the design and analysis of a national survey of adult attitudes toward science and technology. A technical report was submitted to the NSF in June, 1980 and data from this study were a major component of *The American People and Science Policy*.

Principal Investigator of a National Science Foundation grant (SED77-18491) for a national study of the development of the attentive public for organized science. The award provided \$90,000 and covered a 33-month period. To date, one book -- *Citizenship in an Age of Science* -- and several professional papers have been published from the data.

Co-principal Investigator of a collaborative grant from the National Science Foundation for the conduct of model secondary analyses of science, mathematics, and social science data from the National Assessment

of Educational Progress. The award supported collaborative efforts at Northern Illinois University, the University of Illinois at Chicago Circle, the University of Minnesota, and the National Assessment of Educational Progress. Several articles and professional papers have been produced and two national dissemination conferences have been held.

Principal Investigator of a National Science Foundation grant (SPI78-27441) to provide undergraduate research participation in quantitative social science. The \$19,000 award supported ten undergraduate participants for a ten-week summer work experience in on-going social science research projects at Northern Illinois University during the summers of 1979 and 1980.

Co-director of a state-wide study of the potential use of television in stimulating career development interests and in transmitting career information. The project took 12 months and expended about \$230,000. The final report (two volumes) was published by the Illinois Office of Education in 1973.

## Publications and Major Papers

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### Books

*Citizenship in an Age of Science*. New York: Pergamon Press, 1980. (with Robert Suchner and Alan Voelker)

*The American People and Science Policy: The Role of Public Attitudes in the Policy Process*. New York: Pergamon Press, 1983.

*Public Perceptions of Science and Technology: A Comparative Study of the European Union, the United States, Japan, and Canada*. Madrid: BBV Foundation, 1997. (with Rafael Pardo and Fujio Niwa)  
[This work is published in both English and Spanish.]

*Biomedical Communications: Purposes, Audiences, and Strategies*. New York: Academic Press, 2001. (with Linda Kimmel)

### Book Reviews

A Thin Broth (Review of *Unscientific American: How Scientific Illiteracy Threatens our Future*, by C. Mooney & S. Kirshenbaum, Basic Books, 2009). *American Scientist* 97(6):509.  
DOI: 10.1511/2009.81.509.

### Technical Reports

*Report of the National Advisory Commission on Health Manpower, Volume II*. Washington, D. C.: Government Printing Office, 1967. I authored the panel reports on the Consumer Role in the Health Care System and on the Federal Use of Health Manpower.

*Career Education Television for Disadvantaged Adults, Volumes I and II*. Springfield, Ill.: Illinois Division of Vocational and Technical Education, 1973. (with Robert Schultheis and Brooks Holder)

*The Measurement of the Attitudes of the U. S. Public Toward Organized Science*. A final report to the National Science Foundation. 1979. (with Kenneth Prewitt)

*The Attitudes of the U. S. Public Toward Science and Technology*. A final report to the National Science Foundation. Chicago: National Opinion Research Center. 1980. (with Kenneth Prewitt and Robert Pearson)

*The Relationship of Education, Race, and Gender to Attentiveness to Science and Technology Policy*. A Report to the National Science Foundation. 1981.

***The Relationship of Education, Race, and Gender to General Attitudes toward Science and Technology.*** A Report to the National Science Foundation. 1981.

***The Information Needs of the Public Concerning Space Exploration.*** A Report to the National Aeronautics and Space Administration. 1982.

***A National Survey of Public Attitudes Toward Science and Technology.*** A Report to the National Science Foundation. 1982.

***A National Survey of the Non-governmental Leadership of American Science and Technology.*** A Report to the National Science Foundation. 1982. (with Kenneth Prewitt)

***High School Science and Mathematics: an analysis of current practices, problems, and results in four Illinois counties.*** A Report to the Corridor Partnership for Excellence in Education. 1983. (with Alan Voelker)

***A National Survey of Adult Attitudes toward Science and Technology in the United States.*** A Technical Report submitted to the Annenberg School of Communication, University of Pennsylvania. 1983.

***Science and Mathematics Education in the Metropolitan Chicago Region.*** A Report to the Museum of Science and Industry (Chicago). 1984.

***The Information Needs of the Public Concerning Energy Policy Issues.*** A Report to the U.S. Committee on Energy Awareness (Washington, D.C.). 1984.

***The Attitudes of Religious, Environmental and Science Policy Leaders toward Biotechnology.*** A Report to Monsanto Corporation (St. Louis). 1985.

***Leadership Attitudes toward Space Exploration.*** A Report to Research and Decisions Corporation (San Francisco). 1985. (with Judith Brown)

***The Regulatory Environment for Science: Public Attitudes toward the Regulation of Research.*** A Report to the Office of Technology Assessment (Washington, D.C.). 1985.

***Public and Leadership Attitudes toward the Pharmaceutical Industry.*** A Final Report to the Pharmaceutical Manufacturers Association. 1986.

***Public and Leadership Attitudes toward Nuclear Power.*** A Special Report to the U.S. Committee on Energy Awareness. 1986.

***The Attitudes of Science Policy, Environmental, and Utility Leaders toward Energy.*** A Final Report to Lawrence Livermore National Laboratory. 1986.

***The Impact of the Challenger Accident on Public Attitudes toward the Space Program.*** A Report to the National Science Foundation. 1987.

***Longitudinal Study of American Youth: Pilot Study Results.*** A Report to the National Science Foundation. 1987.

***Public Attitudes toward Nuclear Power.*** A Special Report to the United States Council for Energy Awareness. 1989.

***The Attitudes of the Public toward Space Exploration.*** A Special Report to the National Aeronautics and Space Administration. 1989.



***The Attitudes of State Legislators toward Science and Mathematics Education.*** A Special Report to the National Science Foundation. 1990.

***The Attitudes of State Legislators toward Nuclear Power and Related Energy Issues.*** A Special Report to the United States Council for Energy Awareness. 1990.

***The Public Understanding of Science and Technology in the United States, 1990.*** A Report to the National Science Foundation. Washington, D.C.: U.S. Government Printing Office, 1992.

***The Information Needs of the Public Concerning Space Exploration.*** A Special Report to the National Aeronautics and Space Administration. Chicago: Chicago Academy of Sciences, 1991.

***The Public Understanding of Science and Technology in the United States, 1992.*** A Report to the National Science Foundation. Chicago: Chicago Academy of Sciences, 1994.

***The Information Needs of the Public Concerning Space Exploration.*** A Special Report to the National Aeronautics and Space Administration. Chicago: Chicago Academy of Sciences, 1994.

***The Public Understanding of Biomedical Science in the United States, 1993.*** A Report to the National Institutes of Health. Chicago: Chicago Academy of Sciences, 1995.

***The Public Understanding of Science and Technology in the United States, 1995.*** A Report to the National Science Foundation. Chicago: Chicago Academy of Sciences, 1995.

***Public Attitudes Toward and Understanding of Science and Technology in Canada, the European Union, Japan, and the United States.*** A Report to the European Union. Madrid: BBV Foundation, 1995. (with Rafael Pardo and Fujio Niwa)

***The Causes and Treatment of Selected Diseases: A Social Science Analysis of Public Understanding and Attitudes.*** A Report to the Office of Behavioral and Social Science Research, Office of the Director, National Institutes of Health. Chicago: National Opinion Research Center, University of Chicago, 1999. (with Linda Kimmel and Tom Smith).

***Space Policy Leaders and Science Policy Leaders in the United States.*** A report to the National Aeronautics and Space Administration. Chicago: Center for Biomedical Communication, Feinberg School of Medicine, Northwestern University, 2004.

## Chapters in Edited Works

The Impact of Two Decades of Space Exploration on the Public Understanding of Science, in J. Tarr (Ed.), ***Retrospective Technology Assessment -- 1978.*** San Francisco: San Francisco Press. 1978.

A Stratified Model of Attitudes Toward the Politics of Community Planning, in R. Wolensky and E. J. Miller (Eds.), ***The Small Town and Regional Community, Vol. I.*** Stevens Point, Wis.: University of Wisconsin Stevens Point Foundation Press. 1978.

Is There Still a Small Town Culture in the United States? A Comparative Analysis of the Interests, Attitudes, and Behaviors of Rural, Small-town, Suburban, and Urban Americans, in R. Wolensky and E. J. Miller (Eds.), ***The Small City and Regional Community, Vol. II.*** Stevens Point, Wis.: University of Wisconsin Stevens Point Foundation Press. 1979. (with Joel D. Kallich)

The Scientific Literacy of the American People: A Reinterpretation, in M. Phillips (Ed.), ***AAPT Pathways: Proceedings of the Fiftieth Anniversary Symposium of the AAPT.*** Stony Brook, N. Y.: American Association of Physics Teachers. 1981.

The Politics of Educational Change, in J. Price and J. D. Gawronski (Eds.), *Changing School Mathematics: A Responsive Process*. Reston, Va.: The National Council of Teachers of Mathematics. 1981.

A Conceptual Framework for Understanding Public Attitudes toward Conservation and Energy Issues, in D. Conn (Ed.), *Energy and Material Resources*. Boulder: Westview Press. 1982.

Reaching the Attentive and Interested Publics for Science, in S. Friedman, S. Dunwoody, & C. Rogers (Eds.), *Scientists and Journalists: Reporting Science as News*. New York: Free Press, 1986.

Scientific Literacy in the United States, in D. Evered and M. O'Connor (Eds.), *Communicating Science to the Public*. London: Wiley. 1987. Pp. 19-40.

The Development of Interest in Science, in W. G. Rosen (Ed.), *High School Biology Today and Tomorrow*. Washington, DC: National Research Council, 1989.

The Development of Career Expectations by American Youth, in W. Meeus, M. Goede, W. Kox, and K. Hurrelmann (Eds.), *Adolescence, Careers, and Cultures*. Berlin: de Gruyter, 1992.

From Town Meeting to Nuclear Power: the Changing Nature of Citizenship and Democracy in the United States, in A.E.D. Howard (Ed.), *The United States Constitution: Roots, Rights, and Responsibilities*. Washington: Smithsonian Institution Press, 1992.

Persistence and Career Choice, in Suter, L. (Ed.), *Indicators of Science and Mathematics Education*. Washington: National Science Foundation, 1992.

Scientific Literacy and Public Attitudes toward International Competition in Scientific Research and Manufacturing, in S. Okamura, F. Sakauchi, and I. Nonaka (Eds.), *New Perspectives on Global Science and Technology Policy*. Tokyo: Mita Press, 1993.

Public Attentiveness to and Attitudes toward Health Care Issues, in L. Sechrest, T. Backer, E. Rogers, T. Campbell, M. Grady (Eds.), *Effective Dissemination of Clinical and Health Information*. Rockville, Maryland: HCPR Pub. No. 95-0015, 1994.

Scientific Literacy for Effective Citizenship, in Yager, R. E. (Ed.), *Science/Technology/Society as Reform in Science Education*. New York: State University of New York Press, 1996. Pp. 185-204.

Civic Scientific Literacy in the United States: A Developmental Analysis from Middle-school through Adulthood, in Gräber, Wolfgang and Claus Bolte (Eds.), *Scientific Literacy*. Kiel: Germany: Institute for Science Education, University of Kiel, 1997. Pp. 121-142.

La Nécessité d'une Éducation Scientifique Citoyenne? in Schiele, Bernard and Emyln H. Koster (Eds.), *La Révolution de la Muséologie des Sciences*. Lyon, France: Presses Universitaires de Lyon. 1999. Pp. 293-328. [in French]; published in English in 2000 as "Scientific Literacy and Citizenship in the 21<sup>st</sup> Century" in *Science Centers for This Century*; published in Chinese in 2007 as "Scientific Literacy and Citizenship in the 21<sup>st</sup> Century" in *Science Centers for This Century*.

The Development of Student Achievement in Mathematics during Middle School and High School, in Usiskin, Zalman (Ed.), *Developments in School Mathematics Education around the World*. Reston, VA: National Council of Teachers of Mathematics, 1999. Pp. 240-261.

Civic Scientific Literacy and Attitude to Science and Technology: A Comparative Analysis of the European Union, the United States, Japan, and Canada, in Dierkes, Meinolf and Claudia von Grote (Eds.), *Between Understanding and Trust: The Public, Science, and Technology*. Amsterdam: Harwood Academic Publishers, 2000. Pp. 81-129. (with Rafael Pardo)

The Development of Civic Scientific Literacy in the United States, in Kumar, David D. and Daryl Chubin (Eds.), *Science, Technology, and Society: A Sourcebook on Research and Practice*. New York: Plenum Press, 2000. Pp. 21-47.

The Acquisition and Retention of Scientific Information by American Adults, in Falk, John H. (Ed.), *Free-Choice Science Education*. New York: Teachers College Press, 2001. Pp. 93-114.

Scientific Literacy in a Broadband World, in Schiele, Bernard and Janzten, Réal (Eds.), *Les territoires de la culture scientifique*. Montreal: University of Montreal Press, 2003. Pp. 79-93. [in French]

The Evaluation of Adult Science Learning. In, Narasimhan, Carolyn, Bernhard Besk-Winchatz, Isabel Hawkins, and Cassandra Runyon (eds.), *NASA Office of Space Science Education and Public Outreach Conference*. Astronomical Society of the Pacific Conference Series, Volume 319. 2004. Pp. 26-34. ISBN: 1-58381-181-8. 2005.

Textbooks, Curriculum, and Achievement: Reflections on the 50<sup>th</sup> Anniversary of the BSCS, in Rodger W. Bybee (Ed.), *Measuring Our Success: The first 50 years of BSCS*. Dubuque, IA: Kendall/Hunt Publishing Company, 2008. Pp. 73-94.

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### **Papers at Professional Meetings**

Cognitive Development and Political Education. A paper presented to the annual meeting of the American Political Science Association, 1972.

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Selective Attentiveness: A Conceptual Framework for Understanding Public Attitudes Toward Organized Science. A paper presented to the annual meeting of the Society for the Social Study of Science, November, 1978.

The Attentive Public for Organized Science: An Application of the Selective Attentiveness Model. A paper presented to the annual meeting of the American Association for the Advancement of Science, January, 1979.

The Salience of Politics: A Developmental Analysis. A paper presented to the annual meeting of the Southwest Political Science Association, April, 1979.

The Generational Transmission of Party Identification. A paper presented to the annual meeting of the Midwest Political Science Association, April, 1979. (with Kevin McKeough)

The Attentive Public to Science: A Conceptual Framework. A paper presented to the annual meeting of the Midwest Sociological Society. April, 1979.

A Model for Studying the Development of Attentiveness to Science. A paper presented to the annual meeting of the National Science Teachers Association, March, 1980.

Political and Issue Specialization: A Behavioral Imperative. A paper presented to the annual meeting of the American Political Science Association, August, 1980.

The Generational Transmission of Partisan Identification. A paper presented to the annual meeting of the Southern Political Science Association, November, 1980.

The Attentive Public for Foreign Policy: An Examination of Selective Attentiveness in the Vietnam Generation. A paper presented to the annual meeting of the Midwest Association for Public Opinion Research, December, 1980. (with Holli Semetko)

The Attentive Public for Science Policy: A Case Study in Issue Specialization. A paper presented to the annual meeting of the American Association for the Advancement of Science, January, 1981. (with Kenneth Prewitt)

Political Specialization and Social Science Education. A paper presented to the annual meeting of the Social Science Education Consortium, June, 1982.

The Leadership View of American Science and Technology. A paper presented to the annual meeting of the Society for the Social Study of Science, October, 1982.

Public Participation in the Formulation of Science Policy: A Preliminary Comparison of the United States and Western Europe. A paper presented to an invitational seminar at the Berlin Science Center (West Germany), February 4, 1983.

The Attentive Public for Local School Politics. A paper presented to the annual meeting of the American Educational Research Association, March, 1983.

Gender and Educational Aspirations. A paper presented to the annual meeting of the American Educational Research Association, March, 1983. (with Robert Suchner)

The Attentive Public for Economic Policy. A paper presented to the annual meeting of the Midwest Political Science Association, April, 1983.

The Public Understanding of Space Exploration. A paper presented to the annual meeting of the American Association for the Advancement of Science, May, 1983.

The Viewership of Science Television Programming. A paper presented to the annual meeting of the American Association for the Advancement of Science, May, 1983.

The Social Study of Science and Society: The implications of political specialization for social science curriculum development. A paper presented to the annual meeting of the Social Science Education Consortium, June, 1983.

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Scientific Literacy: The challenge to science museums. A paper presented to the annual meeting of the Association of Science and Technology Centers, October, 1983.

The Readership of Science Magazines: A case study in specialized information acquisition. A paper presented to the annual meeting of the Midwest Association for Public Opinion Research, November, 1983. (with Ellen Dran)

The Utilization of Microprocessors in Science and Math Education: A Multivariate Model to Predict Teacher Attitudes, Knowledge, and Utilization. A paper presented to the annual meeting of the American Educational Research Association, April, 1984.

The American College Student: An Educational and Social Portrait. A paper presented to the annual meeting of the American Educational Research Association, April, 1984.

The Attitudes of American College Students toward the Nuclear Power Controversy. A paper presented to the annual meeting of the Midwest Association for Public Opinion Research, November, 1984.

Public Attitudes toward Educational Spending: the Role of Attentiveness to Local Schools. A paper presented to the 1985 annual meeting of the American Educational Research Association, March, 1985.

The Influence of High School Social Studies Courses on Young Adult Political Participation. A paper presented to the 1985 annual meeting of the American Educational Research Association, April, 1985.

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Faith in Science. A paper presented to the annual meeting of the Chicago area Sigma Xi clubs and chapters, April, 1985.

Effective Participation: A Standard for Social Science Education. A paper presented to the 1985 annual meeting of the Social Science Education Consortium, June, 1985.

The Politics of Emerging Issues: an Analysis of the Attitudes of Leaders and Larger Publics toward Biotechnology. A paper presented to the annual meeting of the American Political Science Association, August, 1985.

Technological Literacy: Some Concepts and Measures. A paper presented to an invitational National Conference on Technological Literacy, February, 1986.

Parental Involvement in the Schools: Causes and Effects. A paper presented to the 1986 annual meeting of the American Educational Research Association.

Multivariate Models to Predict the Selection of and Persistence in a Career in the Professions. A paper presented to the 1986 annual meeting of the American Educational Research Association.

The American College Student: 1985. A paper presented to the 1986 annual meeting of the American Educational Research Association.

Some New Measures of Scientific Illiteracy. A paper presented to the 1986 annual meeting of the American Association for the Advancement of Science.

The Public's Understanding of Technical Issues: A Model and Some Communication Strategies. A presentation to the Convocation of Engineering Societies and the National Academy of Engineering, Washington, D.C. June, 1986.

Science and Religion: the impact of religious tension about science on public attitudes toward science and technology. A paper presented to the 1987 annual meeting of the American Association for the Advancement of Science.

From Town Meeting to Nuclear Power: an essay on the changing nature of citizenship and democracy in the United States. A paper presented to the Smithsonian Symposium on the Bicentennial of the Constitution. May, 1987.

What We Know and What We Need to Know about Scientific Literacy. A paper presented to the Oxford University International Symposium on Science in the Public. July, 1987.

The Roots of Scientific Literacy. A paper presented to the St. Louis Sigma Xi Conference on Science Education. September, 1987.

The Roots of Scientific Literacy: the role of informal science education. A paper presented to the Chicago Academy of Sciences National Conference on Informal Science Learning. November, 1987.

The Roots of Scientific Literacy: problems and strategies for change. A paper presented to the semi-annual meeting of the Council of Scientific Society Presidents. December, 1987.

Science Education for Citizenship. A paper presented to the 1988 Annual Joint Meeting of the American Physical Society and the American Association of Physics Teachers, January 26, 1988.

Scientific and Technological Literacy: Definition, Measurement, and Implications for Citizenship. A paper presented to the Third National Technological Literacy Conference, Washington, DC. February 6, 1988.

The Future of Scientific Literacy. A presentation to the Boston Computer Museum. February 11, 1988.



The Development of Interest in Science and Career Orientations toward Science and Technology among Junior and Senior High School Students (with Patricia Casserly and Thomas Hilton). A paper presented to the 1988 Annual Meeting of the American Association for the Advancement of Science. February 12, 1988.

Scientific Literacy among Young Adults. A paper presented to the 1988 Annual Meeting of the American Association for the Advancement of Science. February 12, 1988.

Parental and Peer Encouragement of Formal and Informal Science Education. A paper presented to the 1988 Annual Meeting of the American Educational Research Association. April 6, 1988.

Family and Peer Encouragement of the Study of Mathematics (with Patricia Casserly). A paper presented to the 1988 Annual Meeting of the American Educational Research Association. April 8, 1988.

The Origins of Interest in Science and Mathematics. A paper presented to the 1988 annual meeting of the American Educational Research Association. April, 1988.

Reporting Ordinary and Extraordinary Science News to the Public. A paper presented to the Oxford International Symposium on Reporting Science to the Public. Oxford, United Kingdom, July 14, 1988.

The Development of Interest in Science. A paper presented to the National Research Council's Conference: High School Biology - Today and Tomorrow. Washington, D.C., October 10, 1988.

Impact of the Chernobyl Nuclear Accident on U.S. Attitudes toward Nuclear Power. A paper presented to the 1988 Symposium on Science Communication: Environmental and Health Research, Annenberg School of Communication, University of Southern California, Los Angeles, December 17, 1988.

Scientific Literacy. A paper presented to the 1989 Annual Meeting of the American Association for the Advancement of Science. San Francisco, January 17, 1989.

Scientific Literacy. The 1989 Boyd H. Bode Memorial Lecture, The Ohio State University, Columbus, Ohio, May 10, 1989.

The Roots of Scientific Literacy: Strategies for Improvement. A presentation to the 1989 Annual Meeting of the Industrial Research Institute. Williamsburg, Virginia, May 23, 1989.

Who is Scientifically Literate? A paper presented to the 1989 AAAS Science Education Forum. Washington, D.C., October 6, 1989.

Two Longitudinal Studies of Middle and High School Students in Japan and the United States. A paper presented to the 1990 annual meeting of the American Association for the Advancement of Science. New Orleans, February, 1990. (with Masao Miyake)

The Influence of Parents on the Development of Educational and Life Goals. A paper presented to the 1990 annual meeting of the American Educational Research Association. Boston, April, 1990.

Informal Science Education and Scientific Literacy. A paper presented to the International Conference on Policies and Public for Science and Technology, Science Museum of London, London (U.K.), April, 1990.

The Development of Issue Attentiveness in Adolescents: A Multivariate Analysis. (with Linda Pifer) A paper presented to the annual meeting of the Midwest Political Science Association. April, 1990.

Issue Specialization Among American Adolescents. (with Timothy J. Ressmeyer and Linda K. Pifer) A paper presented to the annual meeting of the American Political Science Association. San Francisco, September 2, 1990.

Empirical Comparisons of Public Understanding of Science in Japan and the United States. A paper presented to the annual meeting of the American Association for the Advancement of Science. Washington, D.C., February 15, 1991.

The Public Understanding of Science in the European Community. (with W. van Deelen, J. Durant, and J. Tchernia) A paper presented to the annual meeting of the American Association for the Advancement of Science. Washington, D.C., February 15, 1991.

Mathematics Achievement in Middle School and High School: Some Models from the Longitudinal Study of American Youth. (with Alan Osborne) A paper presented to the annual meeting of the American Association for the Advancement of Science. Washington, D.C., February 16, 1991.

Tomorrow's Scientists, Mathematicians, and Engineers. (with Thomas L. Hilton and Karen G. Brown) A paper presented to the annual meeting of the American Association for the Advancement of Science. Washington, D.C., February 16, 1991.

Persistence in High school Mathematics. A paper presented to the annual meeting of the American Educational Research Association. Chicago, April 5, 1991.

Two Longitudinal Studies of Middle and High School Students in Japan and the United States. (with Masao Miyake) A paper presented to the annual meeting of the American Educational Research Association. Chicago, April 6, 1991.

Public Attentiveness to and Attitudes toward Health Care Issues. A paper presented to an invitational conference on Effective Dissemination of clinical and Health Information, University of Arizona, Tuscon, Arizona, September 22, 1991.

Scientific Literacy in the United States and the European Community. A paper presented to the annual meeting of the Midwest Association for Public Opinion Research. Chicago, November 23, 1991.

The Impact of Parental and Home Resources on Student Achievement and Career Choice. (with Herman Green) A paper presented to the annual meeting of the American Association for the Advancement of Science. Chicago, February 8, 1992.

The Public Acceptance of Astrology and Other Pseudo-sciences in the United States. A paper presented to the annual meeting of the American Association for the Advancement of Science. Chicago, February 9, 1992.

Scientific Literacy and Public Attitudes toward International Competition in Scientific Research and Manufacturing. A paper presented to the Third International Conference on Science and Technology Policy. Tokyo, Japan, March 10, 1992

The Use and Impact of Science and Technology Museums in the United States: An historical and empirical examination. (with Paul Heltne) A paper presented at an international conference on Museums and the Public Understanding of Science. London, April 8, 1992.

Persistence and Success in Mathematics. A paper presented to the annual meeting of the American Education Research Association. San Francisco, April 20, 1992.

Student Achievement in Mathematics: some Models from the Longitudinal Study of American Youth. A paper presented to the annual meeting of the American Educational Research Association. San Francisco, April 21, 1992.

Student Achievement in Science: Some Models from the Longitudinal Study of American Youth. A paper presented to the annual meeting of the American Educational Research Association. San Francisco, April 21, 1992.

The Educational Policy Attitudes and Spending Preferences of State Legislators in the United States. A paper presented to the annual meeting of the American Educational Research Association. San Francisco, April 22, 1992.

National and International Developments in Longitudinal Studies of Science Careers. (with Karen Brown) A paper presented to the annual meeting of the International Psychological Union. Brussels, Belgium, June 28, 1992.

The Origins and Consequences of Scientific Literacy in Industrial Societies. A paper present to an international conference on the Public Understanding of Science. Tokyo, Japan, October 6, 1992.

The Generational Transmission of Print News Media Usage. (with Linda Pifer) A paper presented to the annual meeting of the Midwest Association for Public Opinion Research. Chicago, November 21, 1992.

Citizen Attentiveness to a Siting Dispute over the Superconducting Super Collider in Illinois. A paper presented to an International Conference on Science and Economic Development. Yokohama, Japan, February 9, 1993.

Educating Americans for the 21st Century: A Retrospective Examination of Progress Over the Last Ten Years. A paper presented to the annual meeting of the American Association for the Advancement of Science. Boston, February 13, 1993.

The Public Understanding of Environmental Science Concepts. (with Linda Pifer) A paper presented to the annual meeting of the American Association for the Advancement of Science. Boston, February 16, 1993.

Student Persistence in Mathematics. A paper presented to the annual meeting of the American Educational Research Association. Atlanta, Georgia, April 13, 1993.

The Attentive Public for Science Policy: A Comparative Study of 15 Industrialized Societies. A paper presented to the annual meeting of the American Association for Public Opinion Research, St. Charles, Illinois, May 21, 1993.

Scientific Literacy: An Updated Conceptual and Empirical Review. A paper presented to a European Community Conference on the Future of Scientific Culture, Lisbon, Portugal, November 22, 1993.

Persistence and Success in Mathematics: What We Are Learning from the Longitudinal Study of American Youth. A paper presented to a National Conference on Connecting Resources for [Education] Reform, Ohio State University, December 2, 1993.

Public Understanding of Scientific Inquiry. A paper presented to the annual meeting of the American Association for the Advancement of Science, San Francisco, California. February, 1994.

The Public Understanding of Biomedical Science among African-Americans. A paper presented to the annual meeting of the American Association for the Advancement of Science, San Francisco, California, February, 1994. (with Willie Pearson, Jr.)

Thinking about the Future: The construction of models of the development of educational expectations during adolescence. A paper presented at the 1994 International Conference on Youth Research Methods, University of Surrey, Guildford, United Kingdom, March 23, 1994.

Scientific Literacy and Citizenship in the 21st Century. A paper presented to the conference on When Science Becomes Culture, Montreal, Quebec, Canada, April 11, 1994.

The Influence of Family and Home on Student Persistence and Achievement in Science and Mathematics. A paper presented to the annual meeting of the American Educational Research Association, New Orleans, Louisiana, April 1994 (with Herman Green).

The Public Understanding of Basic Biomedical Concepts. A Friday night lecture at the Marine Biology Laboratory, Woods Hole, Massachusetts, June 24, 1994.

Scientific Literacy: Implications for Undergraduate Science Education. A paper prepared for the Committee on Undergraduate Science Education of the National Research Council, Woods Hole, Massachusetts, August 14, 1994.

The Function of Scientific Literacy in Democratic Societies. A paper presented to the annual International Conference on the Public Understanding of Science, London, United Kingdom, November, 1994.

Student Achievement in Science and Mathematics during the Middle School and High School Years. A paper presented to the annual International Conference on the Public Understanding of Science, London, United Kingdom, November, 1994.

The Relationship between Biomedical Understanding and Public Policy Attitudes. A paper presented to the annual International Conference on the Public Understanding of Science, London, United Kingdom, November, 1994.

Public Attitudes toward Spending for Scientific Research. A paper presented to the annual meeting of the American Association for the Advancement of Science, Atlanta, Georgia, February 18, 1995.

Public Attitudes toward Spending for Space Exploration. A paper presented to the annual meeting of the American Association for the Advancement of Science, Atlanta, Georgia, February 18, 1995. (with Alan Ladwig)

An Analysis of the Systemic Consequences of Urban, Suburban, and Rural School Districts. A paper presented to the annual meeting of the American Association for the Advancement of Science, Atlanta, Georgia, February 21, 1995.

The Development of Trust in Science among Young Adults: a longitudinal analysis. A paper presented to the annual meeting of the American Association for the Advancement of Science, Atlanta, February 17, 1995. (with Linda Pifer)

Student Plans for Graduate-level Study for Scientific and Technical Careers. A paper presented to the annual meeting of the American Educational Research Association, San Francisco, April 18, 1995.

The Impact of College Science Courses on General Attitudes toward Science and Technology. A paper presented to the annual meeting of the American Educational Research Association, San Francisco, April 19, 1995.

The Accuracy of Student and Parent Reports about Each Other: Lessons from the Longitudinal Study of American Youth. A paper presented to the annual meeting of the American Educational Research Association, San Francisco, April 21, 1995. (with Linda Pifer)

The Development of Biotechnology Policy in the United States. A paper presented to a meeting of the Board of Directors of Research!America, Washington, D.C., July 18, 1995.

The Public Understanding of Scientific Inquiry. A paper presented to the 1995 International Conference on the Public Understanding of Science and Technology, Beijing, China, October 16, 1995.

Student Persistence and Achievement in Mathematics. A paper presented to the 1995 International Conference on the Public Understanding of Science and Technology, Beijing, China, October 16, 1995.

The Public Understanding of Science and Technology in Canada, Europe, Japan, and the United States. A paper presented to an invitational conference on Science and Public Policy, Wissenschaft Zentrum, Berlin, Germany, November 30, 1995.

Adult Access to and Utilization of Computers and the Internet. A paper presented to the 1996 annual meeting of the American Educational Research Association, New York City, April 12, 1996.

Adult Utilization of Informal Science Education Resources in the United States. A paper presented to the 1996 annual meeting of the American Educational Research Association, New York City, April 12, 1996. (with Karen Brown)

Indicators of Civic Scientific Literacy and Attitude to Science and Technology: A Comparative Study of Canada, the European Union, Japan, and the United States. A paper presented to a Conference on New Indicators for the Knowledge-based Economy, sponsored by the Organization for Economic Cooperation and Development (OECD), Paris, France, June 20, 1996.

Civic Scientific Literacy in the United States: A Developmental Analysis from Middle-school through Adulthood. A paper presented to an International Symposium on Scientific Literacy, Hamburg, Germany, September 9, 1996.

Public Understanding of Science and Technology in 14 OECD Countries: A Comparative Analysis. A paper presented to a Symposium of the Public Understanding of Science and Technology, sponsored by the OECD, Tokyo, Japan, November 5, 1996.

The Education of 21<sup>st</sup> Century Citizens: Crossing the Bridge to Participation. A paper presented to the annual meeting of the Social Science Education Consortium, Asilomar, California, June 7, 1997.

The Development of Civic Scientific Literacy in the United States: Patterns of change from middle-school through adulthood. A paper presented to an International Conference of Science, Technology, and Society, Tokyo, Japan, March 1998.

American Attitudes toward Biotechnology: A structural analysis of public encouragement of biotechnology in selected areas. A paper presented to an International Conference of Science, Technology, and Society, Kyoto, Japan, March 21, 1998.

The Development of Citizenship Behaviors. A paper presented to the 1998 annual meeting of the American Educational Research Association, San Diego, California, April 16, 1998. (with Linda Kimmel)

The Development of Attitudes toward Evolution: An analysis of generational transmission and change. A paper presented to the 1998 annual meeting of the American Association for Public Opinion Research, St. Louis, Missouri, May 15, 1998.

American Attitudes toward Biotechnology: A structural analysis of public encouragement of biotechnology. A paper presented to the 1998 Ceres Forum, Berlin, Germany, June 8, 1998.

The Acquisition of Scientific Information: A comparative study of the understanding of biomedical science and space science. A paper presented to an invitational symposium of informal learning, Discovery Science Center, Anaheim, California, October 26, 1998.

Scientific Literacy, Issue Attentiveness, and Attitudes toward Science and Space Exploration. A paper presented to the 1999 annual meeting of the American Astronomical Society, Austin, Texas, January 8, 1999.

The Development of Quantitative Literacy in Middle School and High School. A paper presented to the 1999 annual meeting of the American Educational Research Association, Montreal, Canada, April 20, 1999. (with Linda Kimmel)

Scientific Literacy, Democracy, and the Market of Informal Science Education. A paper presented to an invitation conference for the Giant Screen Theatre Association, New York City, September 10, 1999.

Public Acquisition and Retention of Scientific Information: Recent Patterns and Future Strategies. A paper presented to a National Science Board Symposium on Communicating Science and Technology in the Public Interest, Beckman Center, Irvine, California, February 2, 2000.

The Acquisition of Scientific Information about Astrophysics and the Universe. A paper presented to the annual meeting of the International Planetarium Association, Montreal, Canada, July 11, 2000.

The Decline of the Attentive Public for Environmental Issues during the 1990's. A paper presented to the annual meeting of the American Political Science Association, Washington, D.C. August 30, 2000.

Scientific Literacy in a Broadband World. A paper presented to the Experts Seminar on New Technologies and Science and Technology Culture, Cité des Sciences et l'Industrie, Paris, France, December 8, 2000.

A General Model of Health Communication for Patients and Consumers. A paper presented to the Kentucky Conference on Health Communication, Lexington, Kentucky, April 19, 2002. (with Linda Kimmel)

Biomedical Literacy, Attitudes, and Behaviors: A conceptual and empirical re-examination. A paper presented to the annual meeting of the American Association for Public Opinion Research, St. Petersburg Beach, Florida, May 18, 2002. (with Linda Kimmel)

Sources of Media Distrust. A paper presented to the annual meeting of the American Association for Public Opinion Research, St. Petersburg Beach, Florida, May 19, 2002. (with Linda Kimmel)

The Politics of Biotechnology in the United States and the European Union: A conceptual and empirical analysis. A paper presented to the annual meeting of the American Political Science Association, Boston, Massachusetts, August 30, 2002. (with Linda Kimmel)

The Measurement of Scientific Knowledge and Attitudes in Adult Populations. A paper presented to the World Association for Public Opinion Research Conference on Quality Criteria in Survey Research, Cadenabbia, Italy, June 28, 2002

The Conceptualization and Measurement of Policy Leadership. A paper presented to the American Association for the Advancement of Science, Denver, Colorado, February 18, 2003.

Science Policy Leaders in the United States: Attitudes, activities, and information needs. A paper presented to the American Association for the Advancement of Science, Denver, Colorado, February 18, 2003. (with William Valdez)

Energy Policy Leaders in the United States: Attitudes, activities, and information needs. A paper presented to the American Association for the Advancement of Science, Denver, Colorado, February 18, 2003. (with Joe Culver)

Communication Strategies for Meeting the Information Needs of Science and Energy Policy Leaders. A paper presented to the American Association for the Advancement of Science, Denver, Colorado, February 18, 2003. (with Damon Benedict)

American Trust in Science and Technology: An analysis of data from the second half of the 20<sup>th</sup> century. A paper presented to the American Association for Public Opinion Research, Nashville, Tennessee, May 17, 2003. (with Linda Kimmel)

Biomedical Literacy in the United States: Exploring the borderland between science and citizenship. A paper presented to the International Communication Association, San Diego, California, May 25, 2003. (with Linda Kimmel)

Attitudes toward Science and Technology in the European Union, Japan, and the United States. A paper presented to the World Association for Public Opinion Research, Prague, Czech Republic, September 18, 2003. (with Rafael Pardo, Fujio Niwa, Shinji Okamoto).

Public Perceptions of Biotechnology and Biomedical Engineering. A paper presented to the 2004 annual meeting of the American Association for the Advancement of Science, Seattle, Washington, February 14, 2004

Scientific Literacy in the United States: The Linkage between Schooling and Adult Skills. A paper presented to the 2004 annual meeting of the American Educational Research Association, San Diego, California, April 12, 2004.

Student Achievement in Mathematics in Context: The influence of parents and home. A paper presented to the annual meeting of the American Educational Research Association, San Diego, California, April 14, 2004

Gender Differences in the Socialization of Young Adults' Attentiveness to Science Issues: A Longitudinal Analysis. A paper presented to the annual meeting of the American Educational Research Association, San Diego, California, April 14, 2004. (with Linda Kimmel).

The Influence of Student Attitudes and Effort on Student Achievement in Mathematics. A paper presented to the annual meeting of the American Educational Research Association, San Diego, California, April 14, 2004. (with Linda Kimmel, William Schmidt, Richard Houang).

Public Attitudes toward Life, Death, and Nature in 10 Nations. A paper presented to the annual meeting of the World Association for Public Opinion Research, Phoenix, Arizona, May 12, 2004. (with Rafael Pardo).

The Impact of Science News Embedded in Local Television Newscasts. A paper presented to the annual meeting of the American Association for Public Opinion Research, Phoenix, Arizona, May 14, 2004. (with Eliene Augenbraun, Julia Schulhof, Linda Kimmel).

Apprentice Citizens: The political attitudes and behaviors of young adults in Europe and the United States. A paper presented to the Conference on Civic Education Research, Reno, Nevada, September 28, 2004. (with Linda Kimmel).

Perceptions of Biotechnology among American Adults. A paper presented to the annual meeting of the American Association for the Advancement of Science, Washington, D.C., February 20, 2005. (with Rafael Pardo).

The Imputation of Missing and Disparate Data in a Longitudinal Study. A paper presented to the annual meeting of the American Educational Research Association, Montreal, Canada, April 11, 2005. (with Linda Kimmel and Jesse Wilkins).

The Impact of Attitudes toward Stem Cell Research on the Vote for President. A paper presented to the annual meeting of the American Association for Public Opinion Research, Miami Beach, Florida, May 12, 2005. (with Rafael Pardo and Linda Kimmel).

The Public Acceptance of Evolution and the Big Bang: A national and cross-national analysis of the struggle for the acceptance of science in the United States. A paper presented to the annual meeting of the American Association for Public Opinion Research, Miami Beach, Florida, May 13, 2005. (with Linda Kimmel).

The Transition from Telephone to Online Data Collection in Time Series Measurements: The estimation of mode effects. A paper presented to the annual meeting of the American Association for Public Opinion Research, Miami Beach, Florida, May 13, 2005. (with Linda Kimmel, J. Michael Dennis, and William McCready)

Religion and Politics: A comparative analysis of Europe and the United States. A paper presented to the annual meeting of the International Society for Political Psychology, Toronto, Canada, July 3, 2005. (with Rafael Pardo).

Public attitudes to agricultural biotechnology in 10 countries. A paper presented to the annual meeting of the World Association for Public Opinion Research, Cannes, France, September 17, 2005. (with Rafael Pardo and Linda Kimmel).

Civic Scientific Literacy in Europe and the United States. A paper presented to the annual meeting of the World Association for Public Opinion Research, Montreal, Canada, May 17, 2006.

A Model of Adult Informal Learning. A paper presented to the 2006 annual meeting of the American Association for the Advancement of Science, St. Louis, Missouri, February 17, 2006.

The Public Acceptance of Science and Technology in the United States. A paper presented to the annual meeting of the American Association for the Advancement of Science, St. Louis, Missouri, February 20, 2006.

The Selection of a STEMM Major in College. A paper presented to the annual meeting of the American Educational Research Association, San Francisco, California, April 10, 2006. (with Linda Kimmel)

The Public Understanding of Science in Europe and the United States. A paper presented to the 2007 annual meeting of the American Association for the Advancement of Science, San Francisco, California, February 16, 2007.

Civic Scientific Literacy across the Life Cycle. A paper presented to the 2007 annual meeting of the American Association for the Advancement of Science, San Francisco, California, February 17, 2007.

The Impact of College Science Courses for Non-Science Majors on Adult Scientific Literacy. A paper presented to the 2007 annual meeting of the American Association for the Advancement of Science, San Francisco, California, February 18, 2007.

Political Ideology and Partisanship in the United States. A paper presented to the 2007 annual meeting of the American Association for Public Opinion Research, Anaheim, California, May 19, 2007.

The Development of Educational Expectations and Plans: Results from the Longitudinal Study of American Youth. A paper presented to the annual meeting of the American Educational Research Association, Chicago, Illinois, April 9, 2007. (with Linda Kimmel).

The Longitudinal Study of American Youth: Notes on the first 20 years of tracking and data collection. A paper presented to the annual meeting of the American Educational Research Association, Chicago, Illinois, April 10, 2007. (with Linda Kimmel).

Science Education and Religion in America in the 21<sup>st</sup> Century. A paper presented to an invitational workshop on Science Education and Secular Values at Trinity College, Hartford, Connecticut, May 19, 2007. (with Robert T. Pennock).



Public Attitudes toward Science and Technology: A Preliminary Analysis from the World Values Survey. A paper presented at the 2007 annual meeting of the World Association for Public Opinion Research (WAPOR), Berlin, Germany, September 20, 2007. (with Ronald Inglehart and David McClintick)

The Sources and Impact of Civic Scientific Literacy. A paper presented to an invitational conference on International Indicators of Science and the Public at the Royal Society of London, November 6, 2007.

Science, Religion, and Development: A Cross-national Analysis from the World Values Survey. A paper presented at the 2008 annual meeting of the World Association for Public Opinion Research, New Orleans, Louisiana, May 15, 2008. (with Ronald Inglehart)

Cross-national Attitude Measurement: The impact of salience and information. A paper presented to the WAPOR Quality Criteria in Survey Research Seminar, Cadenabbia, Italy, July 11, 2008. (with Ronald Inglehart)

The Impact of College Science Courses on Adult Scientific Literacy, A paper presented to the 2009 annual meeting of the American Association for the Advancement of Science, Chicago, Illinois, February, 16, 2009.

Voter Participation in a Dual-Primary Election Year. A paper presented to the annual meeting of the American Association for Public Opinion Research, Hollywood, Florida, May 15, 2009. (with Jason Kalmbach)

From Decatur to YouTube: A re-examination of the *Personal Influence* hypotheses in the Internet Era. A paper presented to the annual meeting of the American Association for Public Opinion Research, Hollywood, Florida, May 16, 2009. (with Charles T. Salmon, Karina Garcia-Ruano, Laleah Fernandez, and Eliene Augenbraun)

Civic Scientific Literacy and Public Engagement on Global Climate Change in the United States. A paper presented to an invitational Symposium on Scientific Literacy and Environmental Involvement, University of Hiroshima, Hiroshima, Japan, September 7, 2009. (with Michael Thom)

Personal influence in the electronic era: Extending Katz and Lazarsfeld to today's media environment. A paper presented to the annual meeting of the International Society for Political Psychology, Dublin, Ireland, July 15, 2009. (with Charles T. Salmon, Karina Garcia-Ruano, Laleah Fernandez, and Eliene Augenbraun)

The Public Understanding of Science in Europe and the United States. A paper presented to the 2010 annual meeting of the American Association for the Advancement of Science, San Diego, California, February 21, 2010.

Pathways to a STEMM Career. A paper presented to the 2010 annual meeting of the American Association for the Advancement of Science, San Diego, California, February 20, 2010. (with Linda Kimmel)

Pathways to an Engineering Career. A paper presented to the 2010 annual meeting of the American Association for the Advancement of Science, San Diego, California, February 20, 2010. (with Willie Pearson, Jr.)

Pathways to Careers in Medicine and Health. A paper presented to the 2010 annual meeting of the American Association for the Advancement of Science, San Diego, California, February 20, 2010. (with Bruce Fuchs)

A Measure of Religiosity for All Faiths. A paper presented to the 2010 annual meeting of the World Association for Public Opinion Research, Chicago, Illinois, May 12, 2010. (with Ron Inglehart)

The Challenge of Just-in-time Science Learning for Museums. A paper presented to the 2010 annual meeting of the Association of Science-Technology Centers, Honolulu, Hawaii, October 3, 2010.

Civic scientific literacy in the United States and how it is measured. A paper presented to the 2011 annual meeting of the American Association for the Advancement of Science, Washington, D.C. February 20, 2011.

The enduring effect of formal science education on adult informal science learning. A paper presented to the 2011 annual meeting of the National Association for Research on Science Teaching, Orlando, FL. April 4, 2011.

Young adult science learning in the Internet Era. A paper presented to the 2011 annual meeting of the American Education Research Association, New Orleans. April 11, 2011.

The knowledge gap in Generation X. A paper presented to the 2011 annual meeting of the American Association for Public Opinion Research, Phoenix, AZ. May 12, 2011.

The measurement of political ideology. A paper presented to the 2011 annual meeting of the American Association for Public Opinion Research, Phoenix, AZ. May 14, 2011.

Adult science learning in the Internet Era. A plenary presentation to the annual meeting of the Pan-Pacific Network of Science-Technology Centers, Guangzhou, China. May 19, 2011.

The failure to engage. A paper presented to the annual meeting of the International Society for Political Psychology, Istanbul, Turkey. July 11, 2011.

The development of political ideology in young adults. A paper presented to the annual meeting of the International Society for Political Psychology, Istanbul, Turkey. July 11, 2011.

The development of political participation: A 20-year longitudinal examination of American Youth. A paper presented to the annual meeting of the European Survey Research Association, Lausanne, Switzerland. July 22, 2011.

Religiosity and trust in societal institutions. A paper presented to the annual meeting of the World Association for Public Opinion Research, Boston, MA. September 22, 2011.

Social capital and career choice: Pathways to STEMM professions for students from non-college families. A paper presented to the annual meeting of the American Education Research Association, Vancouver, CA. April 14, 2012.

The deep structure of political ideology in young adults. A paper presented to the annual meeting of the International Society for Political Psychology, Chicago, IL. July 9, 2012.

A Failure to Engage? An examination of the political life of Generation X. A paper presented to the 2013 annual meeting of the American Association for Public Opinion Research, Boston, MA. May 18, 2013.

The growth of social capital in Generation X in the United States. A paper presented to the annual meeting of the European Survey Research Association, Ljubljana, Slovenia. July 17, 2013.

Strategies for sustaining panel participation: Lessons from the Longitudinal Study of American Youth. A paper presented to the annual meeting of the European Survey Research Association, Ljubljana, Slovenia. July 18, 2013.

The rationale and need for metropolitan councils of science and technology. A paper presented to the annual meeting of the American Association for the Advancement of Science, Chicago, IL, February, 2014.

Student achievement in secondary school science and mathematics and its mid-life consequences. A paper presented to the annual meeting of the Society for Longitudinal and Life Course Studies, Lausanne, Switzerland. October 10, 2014.

The influence of early science learning on health information acquisition behaviors in mid-life. A paper presented to the annual meeting of the Society for Longitudinal and Life Course Studies, Lausanne, Switzerland. October 10, 2014.

The acceptance of market economics: A cross-national comparison using the World Values Study. A paper presented to the annual meeting of the World Association for Public Opinion Research, Buenos Aires, Argentina. June 17, 2015.

The origins of religiosity: A paper presented to the annual meeting of the World Association for Public Opinion Research, Buenos Aires, Argentina. June 18, 2015.

Political engagement in mid-life: A longitudinal/generational examination of life course effects. A paper presented to the annual meeting of the International Society for Political Psychology, San Diego, CA. July 3, 2015.

The deep structure of ideological partisanship in the United States. A paper presented to the annual meeting of the International Society for Political Psychology, San Diego, CA. July 5, 2015.

The linkage of ideology and the acceptance of the market model. A paper presented to the annual meeting of the European Survey Research Association, Reykjavik, Iceland. July 15, 2015.

Occupation as social context: An approach to estimating net contribution. A paper presented to the annual meeting of the European Survey Research Association, Reykjavik, Iceland. July 17, 2015.

Educational attainment over the life course in the United States: An analysis using the Longitudinal Study of American Youth/Life. A paper presented to the annual meeting of the Society for Longitudinal and Life Course Studies, Dublin, Ireland. October 19, 2015.

Scientific literacy in Canada and the United States: A comparison of two North American neighbors. A paper presented to the annual meeting of the World Association for Public Opinion Research, Austin, TX. May 12, 2016.

Information acquisition in the 21<sup>st</sup> century: The emergence of the just-in-time system. A paper presented to the annual meeting of the World Association for Public Opinion Research, Austin, TX. May 12, 2016.

Measuring the impact of the Great Recession in Generation X. A paper presented to the annual meeting of the American Public Opinion Research Association, Austin, TX. May 15, 2016.

The growth of partisan polarization in the United States: A comparison across two 3-generation longitudinal studies. A paper presented to the annual meeting of the International Society for Political Psychology, Warsaw, Poland. July 15, 2016.

### **Congressional and Related Testimony**

Public Attitudes toward the Regulation of Research. A presentation to the Committee on Science and Technology, U. S. House of Representatives, March 5, 1986

Testimony to the Task Force on Women, Minorities, and the Handicapped in Science and Technology, Chicago, October 29, 1987.

## Other Professional Activities

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Member, Mayor's (Chicago) Council of Manpower and Economic Advisors, 1976-1982.

Chair, 1976 Midwest Conference on the Protection of Human Subjects in Research, Chicago, Illinois.

President, Midwest Section of the Society of Research Administrators, 1979-80.

Member, Board of Education, DeKalb, Illinois, 1983-1986.

Member, Chicago Area Roundtable on Science and the Media, 1989-1993.

U.S. Representative, International Council for the Comparative Study of the Public Understanding of Science and Technology, 1989-2004.

President, International Council for the Comparative Study of the Public Understanding of Science and Technology, 1990-91, 1993-4, 1996-7.

Member, Committee on the Public Understanding of Science and Technology, American Association for the Advancement of Science, 1981-1988, 2000-2006.

Member, Board of Directors, Phi Beta Kappa Association of Chicago. 2002-2006.

Member, Planetary Protection Subcommittee, NASA Advisory Council, 2008-2015.

Member, Advisory Committee to the Adler Planetarium Education Program, Chicago. 2010-2013.

Member, National Research Council Panel on Human Spaceflight: Public and Stakeholder Opinions, 2013-2014.

Member, Council of Canadian Academies' Expert Panel on the State of Science Culture in Canada, 2013-2014.

Member, Editorial Board, *Journal of the Public Understanding of Science*, London, U.K., 1991 to present.

Member, Editorial Board, *Science Popularization*, Beijing, China, 2006 to present.

Member, Board of Directors, Chicago Council on Science and Technology, 2006 to present.

Member, Advisory Committee to the Director of the Museum of Science & Industry, Chicago. 2010-2015.

Member, Board of Directors, Scientific Software Incorporated. Chicago. 2015 to present.