

## **Curriculum Vita: Bruce E. Seely**

Dean, College of Sciences and Arts  
Michigan Technological University  
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### **EDUCATION**

Ph.D., History of Technology, University of Delaware, Newark, Delaware, June 1982.  
Dissertation: "Highway Engineers as Policy Makers, 1893-1944"

M.A., University of Delaware, Newark, Delaware, June 1977.

B.A., *cum laude*, St. Lawrence University, Canton, New York, May 1975.

### **EMPLOYMENT AND PROFESSIONAL POSITIONS**

Emeritus Dean and Professor of History and Science, Technology and Society, July 1, 2018 –

Dean, College of Sciences and Arts, Michigan Technological University, August 2008 – June 30, 2018

Department Chair, Social Science, Michigan Technological University, August 2002-August 2008.

Professor of History and of Science, Technology and Society, Department of Social Sciences, Michigan Technological University, 1997-2018; Associate Professor, 1988-1997); (Assistant Professor, 1986-1988.

Founding Co-Editor in Chief, *Comparative Technology Transfer and Society*, Johns Hopkins University Press, 2001-2010.

Program Director for Science and Technology Studies, Directorate for Social, Behavioral and Economic Sciences, National Science Foundation, Ballston, VA, July 2000-August 2002.

Secretary and Newsletter Editor, Society for the History of Technology, 1990-1995. Assistant Professor of History, Texas A&M University, 1981-1986.

Historian, Historic American Engineering Record, U.S. Department of the Interior, Summers 1976, 1977, 1978.

### **ACADEMIC HONORS**

**Olmsted Award**, Liberal Education Division, American Society for Engineering Education, for contributions to the Liberal Arts within Engineering Education, presented at the ASEE Annual

meeting, June 22, 2004.

**William Elgin Wickenden Award**, American Society for Engineering Education, for the best article published in the Society's journal in 1999; "The 'Other' Re-engineering of Engineering Education, 1900-1965," *Journal of Engineering Education* 88 (July 1999): 285-94. Presented June 2000.

**Phi Kappa Phi Honor Society**, Michigan Technological University Chapter, inducted 1998. Fellow, Dibner Institute for the History of Science and Technology, MIT, Spring, 1996.

**Copper Scroll Award**, Michigan Technological University Chapter of Omicron Delta Kappa National Leadership Honorary, for service to the chapter and the university, 1990.

**Abel Wolman Award**, Public Works Historical Society and American Public Works Association, for the book making the outstanding contribution to the field of public works history published in 1987: *Building the American Highway System: Engineers as Policy Makers*. Presented September 1988.

**Abbott Payson Usher Prize**, Society for the History of Technology, for the best publication by the society, 1984-1986: "The Scientific Mystique in Engineering: Highway Research in the Bureau of Public Roads, 1918-1940," *Technology and Culture* 25 (October 1984): 798-831. Presented October 1987.

**Railroad History Award** of the Railway and Locomotive Historical Society for the best article on the interpretation of the history of railroads in North America, 1985 - 1986: "Railroads, Good Roads, and Technological Change," *Railway History Bulletin* No. 155 (Autumn 1986). Presented June 1987.

**Norton Prize**, Society for Industrial Archaeology, for the best article in the society's journal, 1981- 1983: "Blast Furnace Technology in the Nineteenth Century; A Case Study," *IA (Journal of the Society for Industrial Archeology)* 7 (1981): 27-54. Presented June 1984.

## **PUBLICATIONS**

### **Books and Monographs**

Mark Rose, Bruce Seely, and Paul Barrett, *The Best Transportation System in the World: Railroads, Trucks, Airlines, and American Public Policy in the Twentieth Century* (Columbus: Ohio State University Press, 2006).

*Encyclopedia of American Business History and Biography: The Iron and Steel Industry in the Twentieth Century*. (Columbia, SC: Brucoli Clark Layman, Inc., and Facts on File, 1994). (Editor and contributor of more than 30 entries).

*Building the America Highway System: Engineers as Policy Makers*. (Philadelphia: Temple University Press, 1987).

## Book Chapters

“Engineering and the Land-Grant Tradition at the University of Illinois, 1868-1950,” pp. 269-296, in Alan I. Marcus, ed., *Science as Service: Establishing and Reformulating American Land-Grant Universities, 1865-1930* (University of Alabama Press, 2015).

**Atsushi Akera** and Bruce E. Seely, “A Historical Survey of the Structural Changes in the American System of Engineering Education,” Vol. 1, pp. 7-32 in Christensen, S. H.; Didier, C.; Jamison, A.; Meganck, M.; Mitcham, C.; Newberry, B. (eds.), *International Perspectives on Engineering Education: Engineering Education and Practice in Context. Volume I.* (Springer Science + Business Media B.V, 2015).

“Inventing the American Road: Innovations Shaping the American Freeway,” pp. 233-73 in Ralf Roth and Colin M. Dival, eds., *From Rails to Roads and Back Again: A Century of Transport Competition and Interdependency Between Competition and Interdependency* (Ashgate Publishing, 2015).

“The Challenges of Transportation Integration in the U.S.A., 1890-1960,” pp. 229-47 in Martin Schieflerbusch and Hans Liudger-Dienel, eds., *Linking Networks: The Formation of Common Standards and Visions for Infrastructure Development* (Ashgate Publishing, 2015).

“Engineering Education,” vol. 2: 833-41 in William Sims Bainbridge, ed., *Leadership in Science and Technology: A Reference Handbook* (Thousand Oaks, CA: Sage Publications, Inc., 2012).

John Jaszczak and Bruce E. Seely, “Developing Nano Education at a Technological University: Science, Technology, and Societal Implications of Nanotechnology,” pp. 591-619 in Aldrin E. Sweeney & Sudipta Seal, eds., *Nanoscale Science and Engineering Education: Issues, Trends and Future Directions* (American Scientific Publishers, 2008).

“An Overview Essay: Roads in Comparative Perspective,” pp. 13-31 in Gijs Mom and Laurent Tissot, eds., *Road History: Planning, Building, and Use* (Neuchâtel, Switzerland: Editions Alphil, 2007).

“Societal Implications of Emerging Science and Technologies: A Research Agenda for Science and Technology Studies (STS),” pp. 211-23 in Mihail C. Roco and Williams Sims Bainbridge, eds., *Societal Implications of Nanoscience and Nanotechnology II: Maximizing Human Benefit: Report of the National Nanotechnology Initiative Workshop, December 3-5, 2004, Arlington, VA* (Springer Science and Business Media, 2006).

“Education Opportunities related to the Societal Implications of Nanotechnology,” pp. 327-31 in Mihail C. Roco and Williams Sims Bainbridge, eds., *Societal Implications of Nanoscience and Nanotechnology II: Maximizing Human Benefit: Report of the National Nanotechnology Initiative Workshop, December 3-5, 2004, Arlington, VA* (Springer Science and Business Media, 2006).

“Patterns in the History of Engineering Education Reform: A Brief Essay,” for *National Academy of Engineering, Engineer of 2020: National Education Summit* (National Academies

Press, 2005), pp. 114-130.

“This School is Designed to Make Good Practical Engineers:’ Engineering Education in a Land-Grant Context,” pp. 163-85 in Alan I. Marcus, ed., *Engineering in a Land-Grant Context* (Purdue University Press, 2005).

“The Automotive Transportation System: Cars and Highways in 20th Century America,” pp. 233-54 (Chapter 13) in Carroll Pursell, ed., *The Blackwell Companion to American Technology* (New York: Blackwell’s, 2005).

"European Connections to American Engineering Education, 1800-1990," pp. 53-69 in Irina Gouzevitch, André Grelon, Anousheh Karvar, eds., *La formation des ingénieurs en perspective. Modèles de référence et réseaux de médiation, XIXe et XXe siècles* (Rennes: Presses de l’Université de Rennes, 2004).

co-authored with Teresa Kynell, "Historical Methods for Technical Communication," pp. 67-92 in Laura J. Gurak and Mary M. Lay, eds., *Research Methods in Technical Communication* (Westport, CT: Praeger, 2003).

"Visions of American Highways, 1900-1980," pp. 260-79 in Hans-Liudger Dienel and Helmuth Trischler, eds., *Geschichte der Zukunft des Verkehrs: Verkehrskonzepte von der Frühen Neuzeit bis zum 21. Jahrhundert* Deutsches Museum Beiträge zur Historischen Verkehrsforschung, vol. 1. (Frankfurt, New York: Campus Verlag, 1997).

"Teaching the History of Technology," pp. 139-51 in Santimay Chatterjee, M.K. Dasgupta, and Amitabha Ghosh, eds., *Studies in History of Sciences* (Calcutta: The Asiatic Society, 1997).

"Changing Patterns of Research in American Engineering Colleges: The Social Dimension of the Rise of Engineering Science," pp. 159-81 in Bart Gremmen, ed., *The Interaction Between Technology and Science* (Wageningen, The Netherlands: Wageningen Agricultural University, 1992).

"The Diffusion of Science into Engineering: Highway Research at the Bureau of Public Roads, 1900- 1940," pp. 143-59 in Peter J. Hugill and D. Bruce Dickson, eds., *The Transfer and Transformation of Ideas and Material Culture* (College Station: Texas A&M University Press, 1988).

### **Peer-Reviewed Journal Articles**

**Mary Lou Ralls**, Bruce Seely, Ewa Flom, and Randy Brown, “Innovations Hit the Road,” *Public Roads* 78, no. 4 (January/February 2015): <http://www.fhwa.dot.gov/publications/publicroads/15janfeb/03.cfm> (accessed May 11, 2015).

**Julio Rivera**, Bruce Seely and John Sutherland, “Societal Implications of Nanotechnology: Occupational Perspectives,” *Environment, Development and Sustainability* 14, no. 5 (October 2012): 807-25.

“Der Pan American Highway – eine Straße zwischen zwei Kontinenten,” *Zeitschrift für Weltgeschichte* Vol. 12.2 (November 2011): 141-73.

“The Secret is the System,” *Wilson Quarterly* 32, no. 2 (Spring 2008): 47-49, 51-58.

“The Beginning of State Highway Administration, 1893-1921: Engineers Take Control,” *TR News* No. 245 (July-August, 2006): 3-9.

"How the Interstate System Came to Be: A Story of Alternatives," *TR News* No. 244 (May- June 2006): 4-9.

Bruce E. Seely and Patrick E. Martin, “A Doctoral Program in Industrial Heritage and Archeology at Michigan Tech,” *CRM: The Journal of Heritage Stewardship* 3 (Winter 2006): 24-35.

"‘Push’ and ‘Pull’ Factors in Technology Transfer: Moving American-style Highway Engineering to Europe, 1945-1965,” *Comparative Technology Transfer & Society* 2, no. 3 (December 2004): 229-46.

“NSF and the Philosophy of Chemistry,” in Joseph E. Early, ed., *Chemical Explanation: Characteristics, Development, Autonomy*, Vol. 98 of the *Annals of the New York Academy of Science* (May 2003): 370-76; [www.annalsnyas.org](http://www.annalsnyas.org).

“Historical Patterns in the Scholarship of Technology Transfer,” *Comparative Technology Transfer & Society* 1 (April 2003): 7-48.

"The "Imbalance" of Theory and Practice in American Engineering Education: Reforms and Changes, 1920-1980," *ICON* 5 (2000): 41-63.

"The Other Re-engineering of Engineering Education, 1900-1965," *Journal of Engineering Education* 88, no. 3 (July 1999): 285-94.

"Der amerikanische Blick auf die deutschen Autobahnen. Deutsche und amerikanische Autobahnbauer 1930-1965," *Werkstatt Geschichte* 21 (December 1998): 11-28.

"SHOT, the History of Technology and Engineering Education," *Technology and Culture* 36 (October 1995): 739-72

"Back to the Future? High Speed Rail and Historical Patterns of American Transportation Development," *Railroad History Bulletin* No. 170 (Spring 1994): 5-14.

co-authored with Terry S. Reynolds, "Striving for Balance: A Hundred Years of the American Society for Engineering Education," *Engineering Education* 82 (July 1993): 136-51.

"Research, Engineering, and Science in American Engineering Colleges, 1900-1960," *Technology and Culture* 34 (April 1993): 344-86; reprinted in Stephen H. Cutcliffe and Terry S.

Reynolds, eds., *Technology and American History: A Historical Anthology from Technology and Culture* (Chicago: University of Chicago Press, 1997), pp. 345-89.

"The Saga of American Infrastructure: A Republic Bound Together," *Wilson Quarterly* 17 (Winter 1993): 18-39.

co-authored with Mark Rose, "Getting the Interstate System Built: Road Engineers and the Implementation of Public Policy, 1955-1985" *Journal of Policy History* 2 (Winter 1990): 23- 56.

"Railroads, Good Roads, and Motor Vehicles: Managing Technological Change," *Railroad History Bulletin* No. 155 (Autumn 1986): 35-63.

"The Scientific Mystique in Engineering: Highway Research in the Bureau of Public Roads, 1918- 1940," *Technology and Culture* 25 (October 1984): 798-831; reprinted in Terry S. Reynolds, ed., *The Engineer in America: A Historical Anthology from Technology and Culture* (Chicago: University of Chicago Press, 1991), pp. 309-42.

"Engineers and Government-Business Cooperation: Highway Standards and the Bureau of Public Roads, 1900-1940," *Business History Review* 58 (Spring 1984): 51-77.

"Blast Furnace Technology in the Nineteenth Century: A Case Study," *IA* 7 (April 1981): 27-54.

"Wilmington and Its Railroads: A Lasting Economic Connection," *Delaware History* 19 (Spring-Summer, 1980): 1-19.

## **Proceedings**

**John Jaszczak** and Bruce Seely, "Planting Seeds: Including Nanotechnology Education Into Engineering Curricula," *Materials Research Society Symposia Proceedings* 931, (2006): 19- 24.

"Engineers and Highway Development: The Rise and Fall of Expertise during the 20th Century," *Proceedings of the Historical Symposium, 23rd World Road Conference*, (Paris: AIPRC/PIARC, 2008).

"Commentary to James Tomayko: 'Software as Engineering,'" in Ulf Hashagen, Reinhard Keil-Slawik, and Arthur L. Norberg ed., *Mapping the History of Computing – Software Issues: International Conference on the History of Computing (IHC 2000)*, April 5-7 2000, Heinz Nixdorf MuseumsForum, Paderborn, Germany, (Berlin: Springer-Verlag, 2002), pp. 83-91.

"European Contributions to American Engineering Education: Blending Old and New," *Quaderns d'Història del'Enginyeria* III (1999): 25-50. (Published by the Escola Tècnica Superior d'Enginyers Industrial de Barcelona, Spain.)

"Libraries, Printing, and Infrastructure: A Historian's Perspective," in Association of Research Libraries, *Realizing Digital Libraries: Association of Research Libraries Membership Proceedings, 126th Meeting, May 17-19, 1995* (Washington, DC: Association of Research Libraries, 1997), pp. 13- 22.

"State Engineers as Policymakers: Apolitical Experts in a Federalist System," in Jerry Rogers, et. al., editors, *Civil Engineering History: Engineers Make History*, Proceedings of the First National Symposium on Civil Engineering History, held at the Annual Meeting of the American Society Civil of Engineers, Washington, DC, November 10-14, 1996 (New York: ASCE, 1996), pp. 123-35.

"The Society for the History of Technology," The Internationalization of Scholarship and Scholarly Societies, *ACLS Occasional Papers*, No. 28 (1995): 67-74. "Highway Engineers as Policy Makers," in *Perspectives on Public History: Occasional Papers from the Hagley Museum and Library* (August 1985), pp. 17-32.

### **Other Publications**

"Presidential Address: The State of SHOT- Organizational Capacity in a Volunteer-based Organization," *Technology and Culture* 56, no. 2 (April 2015): 508-29.

**Massimo Moraglio** and Bruce E. Seely," Displaying Roads: Engineers as Cultural Actors – Introduction," *Transfers* 5, no. 1(Spring 2015): 46-50.

"Pan American Highway: Roads and Politics," *Routes-Roads* (April 2012): 88-93.

"Expertise, Politics and Highways in the U.S., 1960-2000," *Routes-Roads* (April 2011) no. 350, pp. 86-91.

"The Pre-History of the Interstate Highway Program," *Routes-Roads* (October 2010) no. 347, pp. 88- 91.

"Editorial Introduction: NASA and Technology Transfer in Historical Perspective," *Comparative Technology Transfer and Society* 6, no. 1 (April 2008): 1-16.

"Classics Revisited. Economic History as History of Technology: George Rogers Taylor's *The Transportation Revolution, 1815-1860.*" *Technology & Culture* 48 (December 2007): 824-30.

"World War II and Technology Transfer: A Historical Introduction," *Comparative Technology Transfer & Society* 2, no. 1 (April 2004): 67-70.

"Francis C. Turner, "Father of The U.S. Interstate Highway System": An Historical Appreciation," *TR News* No. 213 (March 2001): 5-14.

"Urban Freeway Development and the Bureau of Public Roads, 1930-1950," *SCA (Society for Commercial Archeology) Journal* 15 (Spring 1997): 12-20.

Editor, SHOT Newsletter, No. 47 (March 1990) - No. 70 (January 1996).

"Internationalization of Scholarship: Scholarly Infrastructure," *ACLS Newsletter* 4

(Winter/Spring 1995): 6-7, 9-10.

Co-authored with Terry Reynolds, "Reinventing the Wheel?" *ASEE Prism* (October 1992): 42-43.

"The Highway Research Board and the Federal-Aid Highway Program: A Cooperative Partnership," *TR News*, No. 150 (September/October 1990): 9-14.

"Changing Patterns of Research in American Engineering Colleges: The Social Dimension of the Rise of Engineering Science," in James W. Phillips, comp. and ed., *Celebrating TAM's First 100 Years: A History of the Department of Theoretical and Applied Mechanics, University of Illinois at Urbana-Champaign* (Department of Theoretical & Applied Mechanics, 1990), pp. 1-16.

"People in Public Works: George Donald Kennedy," *APWA Reporter* 55 (June 1988): 24-25; reprinted in Robert D. Bugher, ed., *People Making Public Works History: A Century of Progress, 1894-1994* (Kansas City: APWA, 1998), pp. 197-98.

"People in Public Works: Logan Page," *APWA Reporter* 53 (December 1986): 4-5; reprinted in Robert D. Bugher, ed., *People Making Public Works History: A Century of Progress, 1894- 1994* (Kansas City: APWA, 1998), pp. 175-76.

"TEES: A History of Continuity and Change," *Windows* 3 (Winter 1985): 19-23. with Frank McKelvey, "Industrial Archeology of Wilmington, Delaware, and Vicinity: Site Guide for the 9th Annual Conference of the Society for Industrial Archeology," April 1977. "The Wilmington and Northern Repair Shop," *The Railway History Monograph* 6 (January): 1-17.

"Pennsylvania Railroad Improvements in Wilmington, 1901-1908," *The Railway History Monograph* 5 (October 1976): 1-32.

### **Contributions to Encyclopedias**

"Technologies," in Akira Iriye & Pierre-Yves Saunier, eds., *Dictionary of Transnational History* (New York: Palgrave Macmillan, 2009), pp. 997-1003.

"Civil Engineering," in Peter N. Stearns, ed., *Oxford Encyclopedia Of the Modern World* (New York: Oxford University Press, 2008), vol. 4: 151-153.

"Engineering Education," in Stanley I. Kutler, editor in chief, *Dictionary of American History*, 3rd. ed. (New York: Charles Scribner's Sons, 2003) vol. 3: 216-17.

Clark N. Elliott, ed., *The History of Science in the United States: An Encyclopedia* (Garland Publishing Co., 2001; entries on American Society of Civil Engineers (p. 41); civil and military engineering (pp. 178-79); surveying (pp. 547-48).

"Highway System," in Paul S. Boyer, ed., *Oxford Companion to American History* (New York: Oxford University Press, 2001), p. 337.



Rudi Volti, ed., *The Encyclopedia of Science, Technology, and Society* 3 vols. (New York: Fitzroy Dearborn, 1999); essays on Iron; Bessemer and Steel; and Steel in the 20th Century.

*American National Biography* (Oxford University Press, 1999); 20 entries: Comfort A. Adams (1: 80- 81); William H. Burr (4: 41-42); William Campbell (4: 305-07); Edward N. Cole (5: 206-08); Norman Jay Colman (5: 261-62); James A. Farrell (7: 743-44); Everett D. Graff (9: 369-70); Marshall Burns Lloyd (13: 792-94); Thomas H. MacDonald (14: 219-21) ; William Metcalfe (15: 284-86); Henry William Oliver (16: 688-90); Logan W. Page (16: 904-05); Richard F. Pettigrew (17: 410-11); Abram Reese (18: 285-86); Harris J. Ryan (19: 142-44); Albert Sauveur (19: 312-13); C. Richard Soderberg (20: 355-57); Francis Lee Stuart (21: 68-69); Myron Taylor (21: 395-96); Harald M. Westergaard (23: 79-80).

Mary Beth Norton, gen. ed., *Guide to Historical Literature* 3rd ed. (New York: Oxford University Press, 1995): entries on "Mining and Metallurgy" (pp. 103-04); "Ground Transportation" (p. 104); and "Steam Engine and Internal Combustion Technology" (pp. 104-05).

Donald C. Bacon, Roger H. Davidson, and Morton Keller, eds., *The Encyclopedia of the United States Congress* (New York: Simon & Schuster, 1995), 4 vol.: "The Federal Aid Road Act of 1916," (3: 1749).

Contributor to Paul Paskoff, ed., *The Iron and Steel Industry in the Nineteenth Century: The Encyclopedia of American Business History and Biography*, (Columbia, SC: Facts on File and Bruccoli Clark Layman, Inc., 1989): entries on Adirondack Iron & Steel Company, Cast Crucible Steel Making, Joseph Dixon, John Hill Garrard and William Garrard, Dr. Curtis Grubb Hussey, James Park, Jr., and William Henry Singer.

co- authored with Mark Rose, "Highway Policy," in Richard S. Kirkendall, ed., *Harry S. Truman Encyclopedia* (Boston: G. K.Hall, 1989): pp. 152-53.

Contributing author to William Mulligan, ed., *Dictionary of American Industrial Language* (Westport, CT: Greenwood Press, 1988).

*World Book Encyclopedia*: Route 66 (1999); Trans-Canada Highway, (1993: v. 19: 370-71); Robert F. Mushet (1992: v. 8: 47); Elbert Gary (1992: v. 12: 327); Lincoln Highway (1992: v. 13:941); Henry Bessemer (1991: v. 2: 273); Krupp (1991: v. 11: 389); Thomas Newcomen, (1991: v.14: 363); Alaska Highway, Dixie Highway, (July 1986).

## **Book Reviews**

I have reviewed more than 55 books for the following journals: H-FedHist on H-Net; *American Historical Review*, *Journal of American History*, *Reviews in American History*, *Technology and Culture*, *Business History Review*, *Isis*, *Journal of the West*, *Pittsburgh History*, *Labour/Le Travail*, *Michigan History*, *North Carolina Historical Review*, *Annals of Iowa*, *Rural Sociology*, *The Western Historical Quarterly*, *Environmental Review*, *Scientia Canadensis*, *Journal of Southern History*, *History of Education Quarterly*, *Design Book Review*, *Pennsylvania Magazine of History and Biography*, *Winterthur Portfolio*, *Florida Historical Quarterly*, and *Albion*.

## **CONFERENCE AND COLLOQUIUM PAPERS PRESENTED**

*Over the course of my academic career, I have delivered more than 150 conference, seminar or colloquium papers and public presentations. Below are listed only presentations since 2000.*

"Societal Implications of Nano-scale Science and Technology," Guru Jambheshwar University of Science and Technology, Hisar, India, September 27, 2017; and at Hindustan University, Hindustan Institute of Technology and Science (HITS), Chennai, India, September 20, 2017.

"Comparing Railroad Development across Geographic Boundaries: Perspectives from the History of Technology," Allahabad University, September 25, 2017.

"Historical Background of Nano-scale Science and Technology & Societal Implications," International Conference on Nanoscience and Nanotechnology (ICNN-2017), Babasaheb Bhimrao Ambedkar University, Lucknow, India, September 22, 2017.

"A Historian's Perspective on the Interstate Highway System: Patterns and Consequences," Future Interstate Study, Transportation Research Board, National Academy of Sciences, Detroit, MI., May 17, 2017.

"The Societal Implications of Nano-scale Science and Technology," National Institute of Technology in Calicut (NITC), Calicut, Kerala State, India, January 17, 2017.

"'Can We Get the Technology We Want?' A Historian's View of Technological Innovation," invited seminar at AISECT University, Bhopal, India, January 14, 2017; at Noble College, Sagar, India, January 13, 2017; and at IIT Mumbai, Mumbai, India, January 16, 2017.

"The Nature of Modern Science in the Nanoscience Era," keynote address at Interface of Physical, Chemical and Biological Sciences (IPCBS-2017), Dr. Harisingh Gour Vishwavidyalaya University, Sagar, India, January 11, 2017.

"History of Engineering," Basaveshwar Engineering College, Bagalkot, India, January 15, 2016.

"Societal Implications of Nano-scale Science and Engineering," Basaveshwar Engineering College, Bagalkot, India, January 15, 2016.

"History of Engineering," PES University, Bangalore, India, January 13, 2016.

"Social Implications of nanoscience & Engineering," invited seminars at PES University, Bangalore, India, January 13, 2016; and University of Columbo, Columbo, Sri Lanka, January 11, 2016.

"Societal Implications of Nano-Scale Science and Engineering," Keynote address, ICAMMN 2K16: Advances in Applied Mathematics, Material Science and Nanotechnology for Engineering and Industrial Applications, Federal Institute of Science and Technology (FISAT), Kochi, Kerala, India, January 7, 2016.

“The Societal Implications of Nano-scale Science and Engineering,” invited seminars at Himachal Pradesh University, Shimla, India, December 7, 2014; JK Lakshmipat University, Jaipur, India, December 10, 2014; Tribhuvan University, Kathmandu, Nepal, December 14, 2014.

“Presidential Address: The State of SHOT,” 57th Annual Meeting of the Society for the History of Technology, Dearborn, MI, November 8, 2014.

“The American Interstate Highway System as Infrastructure: A Model Case Study,” 12th Annual Conference of the International Association for the History of Transport, Traffic and Mobility, Philadelphia, PA, September 20, 2014.

“Historical Perspective on Demonstration Projects,” paper presented at 93rd Annual Meeting of the Transportation Research Board, Washington, DC., January 15, 2014.

“Ghosts of the Future: Histories of Technology in STS,” roundtable presentation at Asia Pacific Science Technology and Society Network Biennial Meeting, National University of Singapore, Singapore, July 15, 2013.

“The Societal Implications of Nano-scale Science and Engineering,” invited seminars at NIIT University, Neemrana, India, March 6, 2013; and IIT Jodhpur, Jodhpur, India, March 13, 2013.

“History of Engineering and Transportation: Experts and Policy-making in Comparative Perspective,” keynote invited presentation at Bundelkhand State University, Jhansi, India, March 7, 2013.

“Engineers, Expertise and Transportation Policy in Comparative Perspective,” colloquium at IIT Delhi, Delhi, India, March 5, 2013.

“Civil Engineering in Historical Perspective,” Plenary Address at conference: Intelligent Society in Pursuit of Advances in Civil Engineering Conference, ITM University, Department of Civil Engineering, Gurgaon, India, March 4, 2013.

“Research and the Development of Transportation Infrastructures: A Few Lessons from History,” invited presentation at 2012 Mid-Continent Transportation Research Forum, University of Wisconsin, Madison, WI, September 6, 2012.

“Integrating Advanced Science and Society: The Societal Implications of Nano-scale Science and Engineering,” invited presentation at International Conference for the Integration of Science and Technology into Society, Korean Advanced Institute for Science and Technology (KAIST), Daejeon, South Korea, August 9, 2012.

“Societal Implications of the “Next Big Thing:” ELSI & Nanotechnology,” invited presentation at Korea Advanced Institute of Science & Technology, Daejeon, Korea, April 2, 2012.

“Development of Modern Engineers, 1875-1925: The United States,” invited colloquium presentation at The Growth of Modern Engineers - Comparative Study on National Styles, Seoul, Korea, March 31, 2012.

“Political and Social Responses to Climate Change in the United States: Seen through a Historians Lens,” presentation at Indo-US Bilateral Workshop: Global Challenges: Climate Change, Water, Environment and Society, ITM University, Gurgaon, India, March 6, 2012.

“Engineering Accreditation and Globalization,” Paper at Prometheans Work-in-Progress Session, 54th Annual Meeting of the Society for the History of Technology, Cleveland, OH, November 6, 2011.

“Mel Kranzberg and SHOT’s Creation Story: “And how does one go about forming a new scholarly society?” Paper at 54th Annual Meeting of the Society for the History of Technology, Cleveland, OH, November 5, 2011.

“Overview of Engineering Education in the United States,” 2011 Workshop on Engineering and Sociology, Graduate University of Chinese Academy of Sciences, Beijing, China, October 19, 2011.

“Societal Implications of the “Next Big Thing:” ELSI & Nanotechnology,” invited presentations delivered at India Institute for Information Technology and Management, Gwalior, India, December 6, 2010; Dayalbagh Educational Institute, Agra, India, December 7, 2010; and ITM University, Guragon, India, December 9, 2010.

“Consequence Management after Catastrophe (and other thoughts)”, NATO’s Science for Peace and Security Committee Meeting, NATO’s Science for Peace and Security Committee, Brussels, Belgium, March 17-18, 2010.

"Consequence Management after Catastrophe", NATO Science for Peace & Security Programme Information Day - Enhancing “Partnership through Cooperation, NATO Science for Peace Programme, Istanbul, Turkey, February 3-4, 2010.

"Setting Standards for American Highways: The Bureau of Public Roads, State Highway Departments, & the Politics of Expertise during the 20th Century", Journée organisée à l’occasion du centenaire de l’Association mondiale de la Route, PIARC: World Road Congress, Paris, France, November 19, 2009.

"Lessons Learned: Society’s Reactions to Historical Innovations", invited presentation at Adapting to Innovation – Historical Perspectives and Emerging Technologies, Joint Legislative Council of WI, WI Supreme Court Office of Judicial Education, & Midwestern Office/Council of State Governments, Madison, WI, October 14, 2009.

"Highways, Politics, and Interstates: A Historical Review of Road Transportation in Michigan", SHOT Lecture, University of Michigan Dearborn/Society for the History of Technology, Dearborn, MI, September 28, 2009.

“Setting Standards for American Highways: The Bureau of Public Roads, State Highway Departments, and the Politics of Expertise during the 20th Century,” invited presentation at History Session PIARC Centennial, Paris, France, November 19, 2009.

“Highways, Politics, and Interstates: A Historical Review of Road Transportation in Michigan,” Technology & Culture Forum, University of Michigan –Dearborn, September 28, 2009.

“Technology Transfer: Patterns in History,” Brown Bag Lunch Talk, Chemical Heritage Foundation, Philadelphia, PA, February 17, 2009.

“What Happens with New Administrations? A Historians View,” in the session Transportation Policy & Electoral Politics: The Consequences of Presidential Elections, 88th Annual Meeting of the Transportation Research Board, Washington, DC, January 12, 2009.

“The Federal Role in Highway Design and Aesthetics: A Historical Perspective,” in the session Cost of Aesthetics in Workhorse Bridge Design, 88th Annual Meeting of the Transportation Research Board, Washington, DC, January 12, 2009.

“American Transportation Policy: Patterns of the Past, Implications for the Present,” Keynote Address, Center for Transportation Studies, University of Minnesota, November 6, 2008.

“Public Policy and Freight Transportation, 1920-1960: Setting Boundaries and Framing Technical Possibilities,” Paper at the Annual Meeting of the Society for the History of Technology, Lisbon, Portugal, October 13, 2008.

“The Other Side of Engineering Education: A Historian Examines the Changing Non- Technical Elements,” Distinguished Lecture, Annual Meeting of the American Society for Engineering Education, Pittsburgh, PA, June 24, 2008.

“Engineers, Historians of Technology and the Early Years of SHOT,” Paper presented at the Annual Meeting of the American Society for Engineering Education, Pittsburgh, PA, June 23, 2008.

**Robert Warrington** and Bruce Seely, “Engineering, The Humanities, Internationalization, Sustainability and Accreditation: Will a Renaissance Occur?” paper at the International Conference, Integrating Engineering and Humanities in Higher Education, The Bologna Process and Beyond,” Technische Universität Darmstadt, Darmstadt, Germany, March 6, 2008.

“American Highways: Past and Present,” Invited Presentation, 2008 Michigan County Engineers' Workshop, Marquette, MI, February 5, 2008.

“Containerization in Historical Perspective: Policy, Innovation, &Transformation,” 87th Annual Meeting, TRB, Washington, DC, January 16, 2008.

“American Styles of Engineering Education: Interacting with the World,” presented at the

conference Modelos Historicos de Ingenieria: Los Ingenieros Espanoles en perspectiva internacional, sponsored by Instituto de la Ingenieria de Espana, Madrid, December 14, 2007.

“The Changing American Steel Industry, 1850-1975: Technology, Business and Science,” Keynote address, ASM , International Symposium on Surface Hardening of Stainless Steels, Cleveland, OH October 22, 2007.

“Engineers, Historians of Technology, and the Early Years of SHOT,” paper in the session Engineering SHOT: The Past and Present Relationship between the Historians of Technology and Engineers, Annual Meeting of the Society for the History of Technology, Washington, DC, October 19, 2007.

“Engineers and Highway Development: The Rise and Fall of Expertise during the 20th Century,” Historical Symposium, 23rd World Road Congress, Paris, France, September 19, 2007.

“Historical Lessons in Technology Transfer: The Trials and Tribulations of Making Change Happen,” keynote address, 2007 National LTAP-TTAP Conference, Chicago, IL, July 24, 2007.

“Conceptions of Security: One Perspective from the United States,” Paper for the IFAS – CSS Workshop: Modeling Global Security: The Dimensions of the Challenge, sponsored by the European Science Foundation/NATO, Sarajevo, Bosnia Herzegovina, June 18-19, 2007.

“From Federal-aid to the Interstates and Beyond: The Perpetual Crisis of Financing,” Invited presentation, 67th annual conference, New York State Association of Transportation Engineers, Binghamton, NY, May 16, 2007.

“The Interstate Highway System: Developments & Consequences,” Invited presentation, 67th annual conference meeting, New York State Association of Transportation Engineers, Binghamton, NY, May 16, 2007.

“The Interstate Highway System: Origins and Consequences,” Invited presentation, Kansas Transportation Engineering Conference, Manhattan, KS, April 4, 2007.

“The Societal Implications of the “Next Big Thing:” ELSI & Nanotechnology,” Invited Presentation to the College of Engineering, Mississippi State University, February 9, 2007.

“50 Years of Interstate: The Origins and Consequences of the Nation’s Largest Public Works Program,” Invited lecture, Mississippi State University, February 8, 2007.

“Civil Engineer as a Policy Leader,” Paper presented at the Session Civil Engineers as Policy Leaders, 86th Annual Meeting, Transportation Research Board, Washington, DC, January 24, 2007.

“Engineers, Politics, and the Interstate Highway Program, 1939-1960,” Panel presentation, American Historical Association Annual Meeting, Atlanta, GA, January 6, 2007.

“The Interstate Highway System: Origins and Consequences ,” Invited presentation to the American Concrete Pavement Association Annual Meeting, November 29, 2006.

“The Origins of the Interstate Highway System: Politics Meets Engineering, 1936-1955,” paper in the session: Perspectives on the Interstate Highway Program, Social Science History Association annual meeting, Minneapolis, MN, November 2, 2006

“From Federal-aid to the Interstates and Beyond: The Perpetual Crisis of Financing,” Invited Presentation to the Federal Highway Administration Business Luncheon, Portland, OR, October 27, 2006.

“The Interstate Highway System: Developments and Consequences,” Invited Presentation at the 60th Annual Ohio Transportation Engineering Conference, Columbus, OH, October 24, 2006.

“The History and Consequences of the Interstate Highway System,” Invited Presentation at the Town Hall Meeting, Public Works Historical Society/American Public Works Association meeting, Kansas City, MO, September 10, 2006.

“The Development of the Interstate System: Historical Patterns and Consequences,” Invited Presentation to the National Surface Transportation Policy and Revenue Study Commission, Washington, DC., July 25, 2006

“The Interstate System: Historical Development and Consequences,” Invited Presentation to the Transportation Research Board, Archaeology Committee (ADC 50) Summer Meeting, Williamsburg, VA., July 24, 2006

“Interstates: How We Got Here and What We’ve Learned,” invited presentation at AASHTO Policy Forum: The Interstate Highway System: Fifty Years and Looking Forward, Washington, DC, June 28, 2006

“Autobahnen and Interstates, 1930-1960: Competing Visions of Express Highways in Germany and the United States,” colloquium at Helmut Schmidt Universitat, Universitat des Bundeswehr Hamburg, March 6, 2006.

“The View Back: Interstate Implications – Conceived Versus Actual,” in the session: Fifty Years Forward and Back: The Interstate vs. Vehicle Infrastructure Integration,” 85th Annual Meeting of the Transportation Research Board, Washington, DC, January 25, 2006.

“How the Interstate System Came to Be: A Story of Alternatives”, in the session: 50 Years of the Interstate, 85th Annual Meeting of the Transportation Research Board, Washington, DC, January 23, 2006.

“Historians of Technology and Nanotechnology,” Paper at the annual meeting of the Society for the History of Technology, Minneapolis, MN, November 5, 2005.

“Broadening Engineers: Nano Education at Michigan Tech,” Panel presentation, ASME Interpac 2005 Meeting, San Francisco, CA, July 18, 2005.

“Patterns in the History of Engineering Education Reform,” Paper presented at ASEE Annual Meeting, Portland, OR, June 13, 2005.

“The Interstate System: The Underlying Policy Innovations,” Paper at the Annual Meeting of the Society for Industrial Archeology, Milwaukee, WI, June 4, 2005.

“Engineers, Highways, and Policy,” Invited Plenary Presentation for the session: Evaluating Where Transportation’s Been and Where It’s Going, 6th annual Byways to the Past Conference, Indiana, PA, May, 18, 2005.

“The Clay Commission: Prelude to the Interstate,” Paper at the 84th Annual Meeting of the Transportation Research Board, Washington, DC, January 10, 2005.

“Engineers as Policy Makers? A Comparative View of Expertise and Policy Making,” Invited paper presented at the 2nd the History of Transport, Traffic, and Mobility (T2M) Conference, Dearborn, MI, November 5, 2004.

Panelist with Katherine Neeley, John P. Harrington, Heinz Luegenbiehl, Patrick Quinn, and Hal Barron, “Humanities and Social Sciences and Engineering Criteria 2000: Issues and Opportunities,” American Society for Engineering Education Annual Meeting, Salt Lake City, UT, June 23, 2004.

with co-authors John Jaszczak, Michelle Miller, Gerard Caneba, “NANO Education at Michigan Tech: Science, Engineering and Societal Implications,” American Society for Engineering Education Annual Meeting, Salt Lake City, UT, June 22, 2004.

“Of Wheels and Pendulums: Changing Patterns in American Engineering Education, 1890-2000,” Invited talk, Rose-Hulman Institute of Technology, Terra Haute, IN, May 9, 2004.

“From Practical Engineers to Scientific Researchers: Changing Patterns in American Engineering Education, 1890-2000,” History of Technology Symposium: 175th Anniversary of the Ohio Mechanics Institute, University of Cincinnati, Cincinnati, OH March 6, 2004.

“Historical Patterns in the Development of State Highway Departments,” 83rd Annual Meeting of the Transportation Research Board, Washington, DC, January 12, 2004.

With **J. A. Jaszczak**, G. T. Caneba, M. H. Miller, E. Aifantis, J. Hertel and B. Hamlin, "Work-in-progress Report: Undergraduate Explorations of Nanoscience, Nanotechnology, and Societal Implications," (poster presented by Jaszczak). Hawaii International Conference on Education, Honolulu, HI, January 3-6, 2004.

Kay Neeley & Bruce Seely, “Realizing the Integrated Vision of EC 2000: A Report for the Liberal Education Division (panel presentation)” American Society for Engineering Education



Annual Meeting, Nashville, TN, June 24, 2003.

“History and Social Studies of Science: A Perspective from the National Science Foundation,” Invited presentation, Dibner Institute 10th Year Fellows Reunion, Cambridge, MA, May 9-10, 2003.

“NSF and the Philosophy of Chemistry,” presentation at the 6th Summer Symposium, of the International Society for the Philosophy of Chemistry, Georgetown University, August 6, 2002.

“The Social Construction of SHOT: Creation Myths in the History of Technology,” invited presentation, STS Colloquium, University of Minnesota, February 15, 2002.

“Highways: Standards and Historical Integrity,” conference paper presented by videotape at the Transportation Research Board 2001 Summer Workshop: *Discover the Past, Plan for the Future*, Key West, Florida, July 8, 2001.

“Why American Roads Look as They Do: Highway Standards in Historical Perspective,” conference paper for Session 398: *Historic Contexts—Keys to Assessing Highways*, Transportation Research Board, January 10, 2001.

"Inventing the American Road: Technical Innovations Shaping the Freeway," invited lecture in the Series: *The Freeway in America*, Sponsored by the Rice Design Alliance and the Gerald D. Hines College of Architecture at the University of Houston, Houston, TX, October 13, 2000.

"From Design to Science and Back: American Engineering Education in the 20th Century," Presented at the International Symposium: *Anys 150 Enginyeria Industrial, Universitat Politècnica de Catalunya*, Barcelona, Spain, September 19, 2000.

"American Highway Engineers and German Autobahnen: Responses and Reactions: 1935-1950," conference paper at the Annual Meeting of the Society for the History of Technology, Munich, Germany, August 18, 2000.

with Stephen Bowen, “Michigan Tech’s General Education Curriculum,” ASEE Annual Meeting, St. Louis, MO, June 18, 2000.

“Francis C. Turner: A Historical Appreciation,” Paper for Panel: *Frank Turner, A Place in Transportation History*, at the 79th Annual Meeting, Transportation Research Board, Washington, DC, January 11, 2000.

## REPORTS

Principle co-author with Mark Rose of historical analysis section, pp. 1-101, in *The States and the Interstates: Research on the Planning, Design, and Construction of the Interstate and Defense Highway System* (Washington, DC: American Association of State Highway and Transportation Officials, 1991).

*The Texas Engineering Experiment Station: Continuity and Change in the Land- Grant Tradition*

(Texas Engineering Experiment Station, 1985).

Reports completed for the U. S. Department of the Interior, National Park Service, Historic American Engineering Record, Deposited in Library of Congress:

*Adirondack Iron and Steel Company -- New Furnace, 1848-1854*, HAER No. NY-123 (1978).

[http://memory.loc.gov/cgi-bin/query/S?ammem/hh:@field\(SUBJ+@od1\(NEW+YORK--Essex+County--Tahawus\)\)](http://memory.loc.gov/cgi-bin/query/S?ammem/hh:@field(SUBJ+@od1(NEW+YORK--Essex+County--Tahawus)))

*Erie Railroad Survey*, HAER No. NY-124 (1977). [http://memory.loc.gov/cgi-bin/query/D?hh:9:/temp/~ammem\\_5ZW2::](http://memory.loc.gov/cgi-bin/query/D?hh:9:/temp/~ammem_5ZW2::)

*Pennsylvania Railroad Improvements*, HAER No. DE-12 (1976). [http://memory.loc.gov/cgi-bin/query/D?hh:1:/temp/~ammem\\_5ZW2::](http://memory.loc.gov/cgi-bin/query/D?hh:1:/temp/~ammem_5ZW2::)

*Wilmington and Northern Railroad: Repair Shop*, HAER No. DE-13 (1976) [http://memory.loc.gov/cgi-bin/query/D?hh:6:/temp/~ammem\\_5ZW2::](http://memory.loc.gov/cgi-bin/query/D?hh:6:/temp/~ammem_5ZW2::)

*Garrett Snuff Mill*, HAER No. DE-14 (1976). [http://memory.loc.gov/cgi-bin/query/D?hh:2:/temp/~ammem\\_5ZW2::](http://memory.loc.gov/cgi-bin/query/D?hh:2:/temp/~ammem_5ZW2::)

## GRANTS

PI, North Atlantic Treaty Organization, Advanced Research Workshop: Management of Security: Successes and Failures, 2008 (\$53,000). 2008. Part of ESF/NATO effort to develop research agenda on security.

PI, National Science Foundation, Program in Science, Technology and Society, "SHOT 50th Anniversary Workshop, Award # 0623056, 2006 (\$24,049).

PI, National Science Foundation, Program in Science, Technology and Society, "SGTRF: Doctoral Program in Industrial Heritage and Archeology," Award # 0454711, 2005 (\$296,396).

Co-PI with John Jaszczak, et.al., National Science Foundation, Nanoscale Science and Engineering Competition," NUE: Undergraduate Exploration of Nano-science, Applications, and Societal Implications at Michigan Tech," Award # 0304439, 2003 (\$100,000).

PI, National Science Foundation, Program in History and Philosophy of Science, Technology and Society, "Participation of United States Scholars in the XIXth International Congress of the History of Science; Zaragosa, Spain; August 22-29, 1993," Award # 9302569, 1993 (\$25,000)

Co-PI with Keith Benson, National Science Foundation, History & Philosophy of Science, Engineering and Technology, "Critical Problems and Research Frontiers in History of Science and History of Technology to be Held Oct. 31-Nov 3, 1991 in Madison Wisconsin," Award #9011695, 1990 (\$84,000).

Co-PI with Terry Reynolds, National Science Foundation, Program in the History of Science, Technology, and Society and the Engineering Directorate, "A History of Engineering Education in the United States," 1990 to 1992 , Award # 8921936, 1989 (\$120,000).

National Endowment for the Humanities, Travel to Collections Grant, 1989. (\$500)

National Science Foundation, Summer Scholars Award for "Engineering Research in Land-

grant Colleges: A History of Engineering Experiment Stations," Award # 8711164, 1987 (\$10,414).

Postdoctoral Fellowship in Technology & Society, Carnegie-Mellon University, 1984-85.  
National Endowment for the Humanities, Travel to Collections Grant, 1984. (\$500)

National Science Foundation Grant, Doctoral Dissertation in the History of Science, "Highway Engineers as Policy Makers, 1893-1944." Award # 8007899, 1980 (\$5750).

Hagley Fellowship, Eleutherian Mills-Hagley Foundation for graduate study at the University of Delaware, 1975 to 1979.

## **OTHER PROFESSIONAL ACTIVITIES**

Board of Directors, Superior Health Foundation, Marquette MI, 2014- ; President of the Board, September 2018 –

Editorial Advisory Board, *Engineering Studies*, (2008-2018).

Committee Member, Transportation Research Board, NCHRP Project 20-83(01): "Potential Changes in Goods Movement and Freight in Changing Economic Systems and Demand," 2009-2010.

Presented Testimony before the Committee on Environment and Public Works, United States Senate, Hearing on Future Federal Role for Surface Transportation, Washington, DC, June 25, 2008.

European Science Foundation/NATO, Member of Coordinating Committee for Security: Advancing a Framework for Enquiries (SAFE). Research agenda setting exercise on security (September 2006 – 2009). Participant in workshops in Strausbourg (9/2006); Sarajevo (6/2007); Oslo (3/2008); Paris, November 2008; Brussels, March 2009; workshop coordinator for Istanbul (5/2008); Workshop co- organizer, Paris, November 2008 ; co- organizer of final workshop, Brussels, April 2009.

Reviewer for Andrew W. Mellon, ACLS Dissertation Completion Fellowship Program. (7 proposals, January 2009; 16 proposals – January 2008; 21 proposals, January 2007).  
Member, External Program Review Committee, History Department, Iowa State University, February 24-26, 2008.

National Science Foundation: Chair, Committee of Visitors (3-year review) for Science and Technology Studies Program, National Science Foundation, October 2010. Panelist, Graduate Research Fellowships: digital panel January 2014 (32 proposals); Washington, DC, January 11-13, 2012; Member Site Visit, Center for Nanotechnology in Society (NSEC) at the University of California at Santa Barbara, April 24-26, 2007; May 13-15, 2009 (committee chair); Chair, Site Visit Committee, Center for Nanotechnology and Society, Arizona State University (May 2-4, 2012); Panelist: NUE (June 18-19, 2012); (June 7-8, 2011); Electric Power Networks Security and Efficiency Panel (EPNES), (May 12-13, 2003); IGERT pre-proposal panel (December, 12-

13, 2002); IGERT final selection panel, (June 9-10, 2003); Human and Social Dynamics Infrastructure Panel, (June 17- 18, 2004); Engineering Education Panel, (September 8-9, 2004); Invited Participant, Workshop on Societal Implications of Nanotechnology,” Washington, DC, December 3-5, 2003. **Program Director, Science and Technology Studies, August 2000-August 2002**; Panel Member, Science and Technology Studies Program, National Science Foundation, Fall 1995-Spring 1998 Member of Committee of Visitors (3-year review) for Science and Technology Studies Program, October 1993.

Invited Participant, NAE Engineer of 2020 National Education Summit, National Academy of Engineering, Washington, DC, July 22-23, 2004. Prepared background paper on the history of efforts to reform engineering education.

Participant in Michigan Department of Education/Goethe Institute Study Trip to Germany (April 23- May 1, 2004). Trip was to study Germany’s parliamentary government and then prepare course modules and other information for the purpose of improving the performance of Michigan secondary school students in the area of parliamentary government.

Member of the Advisory Committee, Lemelson Center for the Study of Invention and Innovation (2004-2006).

Consultant, Diner Media, Concept development and script review for documentary production on the Alaska Highway, September-December, 2003.

Consultant, Leichtenstein Consulting Engineers. Member of team evaluating the historical significance of bridges on the Ohio highway system, built 1950-1960. Phases 1 and 2, Fall, 2002- date.

Consultant, Louis Berger Associates. Participated in Symposium on Historic Context for the Interstate Highway System and presented “Preliminary Thoughts On The Interstate As Historic Resource,” Federal Highway Administration, February 12-13, 2003, Washington, DC.

Consultant and on-air expert for History Channel documentary special on the history of U.S. Highway 1 (videotaped October 18-19, 2001)

Consultant and on-air expert for ABC News Productions, Travel Channel documentary, “Super Road Interstate 95,” (videotaped October 10, 2001; aired Fall 2002).

Consultant in the development of a journal devoted to social science/humanistic study of technology transfer, University of Colorado at Colorado Springs, September 2001- January 2003. Exhibit Script Consultant: “On Track: Transit and the American City,” National Building Museum, Washington, DC, September 2001.

Consultant on Transportation History, Henry Ford Museum, Dearborn, MI, April 2000. Member of the Task Force on Transportation History (now Committee on Transportation History, Transportation Research Board, National Academy of Sciences, 1999-2004

Chair, Academic Program Review for Division of Technology, Culture and Communications, College of Engineering, University of Virginia, March 8-10, 1999.

Moderator of Panel Session on History of Technology and Policy for Congressional Staff, sponsored by National Humanities Alliance, May 1996.

Advisory Board, Fund for the Heritage of Civil Engineering, Huntington Library, Huntington Beach, CA, 1995-present.

Invited Presenter and Participant at Workshop on Science, Technology and the Cold War, sponsored by Science and Technology Studies Program, National Science Foundation, Santa Fe, NM, September 18-20, 1994.

Invited participant at Workshop on Research Initiatives on Public Infrastructure for the Social, Behavioral, and Economic Sciences Directorate, National Science Foundation, April 21-23, 1993, Reston, VA.

Regular referee for grant proposals to the Program in the History and Philosophy of Science, National Science Foundation; and the Program in Interpretative Research in the Humanities, Science, and Technology, National Endowment for the Humanities.

Panel member, Program in Science, Technology and the Humanities, National Endowment for the Humanities, 1995.

Manuscript referee (articles and books) for *Journal of Transport History*, *Journal of American History*, *Business History Review*, *Diplomatic History*, *Pennsylvania Magazine of History and Biography*, *Technology and Culture*, *Engineering Studies*, *Agricultural History*, *Journal of Policy History*, *Journal of Urban History*, *Journal of Transport History*, *Journal of Transport Geography*, *Transfers*, *Quaderns d'Historia de l'Enginyeria*, *Social Studies of Science*, *Scientia Canadensis*, *Northeast Historical Archaeology*, *International Journal of Intellectual Property Management (IJIPM)*, Johns Hopkins University Press, Rutgers University Press, University of Michigan Press, University of Alabama Press, MIT Press, University of Pittsburgh Press, and University of California Press.

Project Associate for policy analysis for the Interstate Highway Research Project directed by the Public Works Historical Society and sponsored by the American Association of State Highway and Transportation Officials to study impact of the Interstate program on the states. March 1987 - May 1988. End product -- The States and the Interstates. (See above, Reports).

Invited participant at seminar on "Building Consensus: Historical Perspectives from the Interstate Highway Experience," sponsored by the Public Works Historical Society and the American Association of State Highway and Transportation Officials, Washington, D.C., November 22-23, 1987.

Coordinated Summer Study Abroad Program in Italy, Texas A&M University, Summer, 1984. Organized and taught one-credit orientation course, coordinated publicity, guided program in

Italy while teaching Western Civilization to 1600. Taught the same course in 1983 in this program.

Consultant in the History of Technology for the Adirondack Museum, NEH Planning Grant for Exhibit, "Mining in the Adirondacks," 1980.

## **PROFESSIONAL SOCIETY MEMBERSHIPS AND COMMITTEES**

### **Society for the History of Technology**

**Bibliographer** working with History of Science Society on bibliographic materials for EBSCO HSTM database and joint HSS/SHOT open access database projects, 2016 to date; ; **Past President**, 2015-16; **President**, 2013-14; **Vice President**, 2012-13; Secretary Search Committee (chair), 2013; 50th Anniversary Planning Committee Coordinator, 50th Anniversary Workshop; Ferguson Prize Development Committee; 2004 Secretary Search Committee (Chair); **Executive Council**, 1998-2000; Abbott Payson Usher Prize Committee, 1997-1999; Ad hoc Committee on Journal Publisher, 1997; Kranzberg Prize Selection Committee, 1996-97; **Secretary and Newsletter Editor**, 1990-1995; Representative to AAAS Section Committee M, Engineering, 1991-1993; Ad hoc Committee on International Questions, 1991; Financial Advisory Committee; SHOT Secondary Education Project, 1990-1995; Representative to ACLS, Conference of Administrative Officers, 1990-1995; member, program committee, and workshop director, fall 1994; Member, Secretary's Liaison Committee with HSS, 4S, PSA, & AAHM, 1990-1995; Abbott Payson Usher Prize Committee, 1988-1990; Technology Studies and Education Committee, 1987-1990; Ad hoc Committee on History of Technology in Engineering Education, 1987-1988; Committee on the review and evaluation of museum exhibits, Technology Museum Special Interest Group, 1982-1983; Commentator at paper sessions frequently.

### **Public Works Historical Society**

**Board of Directors**, 1992-2005 **President-elect**, 1999-2000 **President**, 2000-2001 Top Public Works Projects of the Century Committee, 1999-2000

**Business History Conference: Board of Directors**, 1992-1995

### **History of Science Society**

*Osiris* Editorial Board, 2002-2007

### **Society for Industrial Archeology**

### **American Society for Engineering Education**

### **Organization of American Historians**

*Updated May 21, 2019*