

## THOMAS J. MISA

Program in History of Science, Technology & Medicine  
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### Education

University of Pennsylvania. Ph.D. in History and Sociology of Science, 1987. Dissertation: "Science, Technology, and Industrial Structure: Steelmaking in America, 1870-1925." Dissertation advisor Thomas P. Hughes. M.A., 1983.  
Massachusetts Institute of Technology. S.B. in Applied Biology, 1981; minor in STS.

### Awards, Fellowships and Grants

Listed in Directory of American Scholars; Contemporary Authors; Who's Who in America; Writers Directory.

Department of Energy/Los Alamos National Laboratory. Collaborative Research Project: High Performance Computing (HPC) at Los Alamos, 2014-19.

University of Illinois Program for Research in the Humanities. "Collaborative Innovation and the Global Midwest: Inter-disciplinary Design and Envisioning Prairie Futures." 2015-17 [consortium with Illinois and Purdue]

Alfred P. Sloan Foundation. "Tripling Women's Participation in Computing (1965-1985)" 2014-16.

National Science Foundation. "Technology and Modernity" 1999-2000. "Technology and the Making of 20th Century Europe" 2002-6. "Research Methods for Contemporary History of Computing" 2007-8. "Designing and Using FastLane: Lessons for Cyberinfrastructures" 2008-12. "Building an Infrastructure for Computer Security History" 2011-15.

Society for the History of Technology. Dexter Prize, 1997. <[www.jstor.org/stable/1215899](http://www.jstor.org/stable/1215899)>  
IEEE Life Members Prize in Electrical History, 1987. <[www.jstor.org/stable/3105281](http://www.jstor.org/stable/3105281)>

Illinois Institute of Technology. Bauer Family Excellence in Undergraduate Teaching Award, 1993. Lewis College Faculty Teaching Award, 1993. ERIF awards 1988, 1990-91, 1993-94.

Hagley Museum and Library. Center for the History of Business, Technology and Society. Research Associate, 1991-92. Grant-in-Aid, 1988. Grant-in-Aid, 1985.

GTE Foundation. "Ethics and Technology in Context" lecture series. 1989-90.

Institute of Electronics and Electrical Engineering. History Committee. "Documenting an Inventive Career: Marvin Camras." 1988-91.

University of Pennsylvania. Mellon Graduate Fellow, 1986-87. Dean's Fellow, 1985-86. Annenberg Graduate Fellow, 1981-85.

American Historical Association. Albert J. Beveridge Grant for Research in American History, 1985-86.

University of Illinois Foundation. John E. Rovensky Fellowship, 1985-86.

Massachusetts Institute of Technology. I. Austin Kelly III Prize for Excellence in Humanistic Scholarship by MIT Undergraduates, 1981.

## References upon request

### Teaching Experience

University of Minnesota. ERA Professor of the History of Technology, 2006-18. *Graduate courses*: Historiography (HSci/HMed 8112); Research Methods (HSci/HMed 8113); New Technology Media History (HSci 8930); History of Technology Core Seminar (HSci 8930) History of Computing Seminar (HSci 8930). *Undergrad*: Digital World (HSci 1011); Technology and Civilization: Waterwheels to the Web (HSci 1715/3715); Exploring the Digital World (HSEM 2529H); History of Computing (HSci 4321/CSci 4921).

Illinois Institute of Technology. Assistant Professor of History, 1987-94; Associate Professor of History, 1994-2005. Courses: History of Computing; Technology in History (Renaissance to Industrial Revolution, 1870 to Present); Rise of the Global Economy; American History (1789-1898, 1898-1975); History of American Business; History of Engineering; Age of Darwin; Industrial Culture; Senior Seminar on Technological Risk; Creativity in Art, Science, Technology.

University of Twente. Guest professor Spring 1997. Faculty and staff seminar on Technology and Modernity.

Virginia Polytechnic Institute. Visiting Instructor of History, Summer 1985, Summer 1986. Courses: History of Technology (History 4212-13).

### Books

*Leonardo to the Internet: Technology and Culture from the Renaissance to the Present.*

Baltimore: Johns Hopkins University, 2022 (third edition). Second edition 2011; first edition 2004. [[www.press.jhu.edu/books/title/12658/leonardo-internet](http://www.press.jhu.edu/books/title/12658/leonardo-internet)]

*Communities of Computing: Computer Science and Society in the ACM.* New York: ACM Books/Morgan & Claypool, 2016. [editor] [[doi.org/10.1145/2973856](https://doi.org/10.1145/2973856)]

*FastLane: Managing Science in the Internet World.* Baltimore: Johns Hopkins University Press, 2015. [co-authored with Jeffrey Yost]. [[www.press.jhu.edu/books/title/11523/fastlane](http://www.press.jhu.edu/books/title/11523/fastlane)]

*Digital State: The Story of Minnesota's Computing Industry.* University of Minnesota Press, 2013. [[www.jstor.org/stable/10.5749/j.ctt5hjk4h](http://www.jstor.org/stable/10.5749/j.ctt5hjk4h)] Basis for Twin Cities Public Television's "Solid State: Minnesota's High-Tech History" (2019) streaming at [www.tpt.org/solid-state/](http://www.tpt.org/solid-state/)

*Building the Control Data Legacy: The Career of Robert M. Price.* Charles Babbage Institute, 2012. [editor] [[hdl.handle.net/11299/169866](http://hdl.handle.net/11299/169866)]

*Gender Codes: Why Women Are Leaving Computing.* John Wiley/IEEE Computer Society Press, 2010. [editor] [[dx.doi.org/10.1002/9780470619926](https://dx.doi.org/10.1002/9780470619926)]

*College of Science and Engineering: The Institute of Technology Years (1935–2010).* Charles Babbage Institute, 2010. [co-edited with Robert Seidel]. [[worldcat.org/title/773840788](http://worldcat.org/title/773840788)]

*Urban Machinery: Inside Modern European Cities.* Cambridge: MIT Press, 2008. (paperback 2010) [co-edited with Mikael Hård]. [[mitpress.mit.edu/9780262514170](http://mitpress.mit.edu/9780262514170)]

*Modernity and Technology.* Cambridge: MIT Press, 2003. [co-edited with Philip Brey and Andrew Feenberg]. (paperback 2004). [[mitpress.mit.edu/9780262633109](http://mitpress.mit.edu/9780262633109)]

*A Nation of Steel: The Making of Modern America, 1865-1925.* Baltimore: Johns Hopkins University Press, 1995. (paperback 1998) [[www.press.jhu.edu/books/title/1035/nation-steel](http://www.press.jhu.edu/books/title/1035/nation-steel) or [hdl.handle.net/2027/heb.00172](http://hdl.handle.net/2027/heb.00172) or [archive.org/details/nationofsteelmak00misa](http://archive.org/details/nationofsteelmak00misa)]

*Managing Technology in Society: The Approach of Constructive Technology Assessment.* London: Pinter, 1995. [co-edited with Arie Rip and Johan Schot] [[openlibrary.org/works/OL18239451W](http://openlibrary.org/works/OL18239451W)]

## Other publications

- “Gender Bias in Big Data Analysis.” *Information and Culture* 57 no. 3 (2022): 283-306 [muse.jhu.edu/article/869008] <doi.org/10.7560/IC57303> <arxiv.org/abs/2211.09865>
- “Temporal Analysis and Gender Bias in Computing.” *arXiv* (October 2022) <arxiv.org/abs/2210.08983>
- “Dynamics of Gender Bias in Computing.” *Communications of the ACM* 64 no. 6 (June 2021): 76-83 [dl.acm.org/doi/10.1145/3417517] <arxiv.org/abs/2211.03905>
- “Gender Bias in Computing,” in William Aspray, ed., *Historical Studies in Computing, Information, and Society: Insights from the Flatiron Lectures* (Springer 2019), 115-136 [doi.org/10.1007/978-3-030-18955-6\_6] <arxiv.org/abs/2210.16449>
- “Dominance of the Digital (1990–2016).” *HoST - Journal of History of Science and Technology* 13 no. 1 (2019): 106-9 [doi.org/10.2478/host-2019-0005]
- “ACM and the Computing Revolution,” in Misa, ed. *Communities of Computing: Computer Science and Society in the ACM* (ACM Books/Morgan & Claypool, 2016), 1-24. [doi.org/10.1145/2973856.2973858]
- “Computer Security Discourse at RAND, SDC, and NSA (1958-1970).” *IEEE Annals of the History of Computing* 38 no. 4 (2016): 12-25. [dx.doi.org/10.1109/MAHC.2016.48]
- “Charles Babbage, Ada Lovelace, and the Bernoulli Numbers,” in Robin Hammerman and Andrew L. Russell, eds. *Ada’s Legacy: Cultures of Computing from the Victorian to the Digital Age* (ACM Books/Morgan & Claypool, 2015), 11-31. [dx.doi.org/10.1145/2809523]
- “Computing is History.” *Communications of the ACM* 58 no. 10 (October 2015): 35-37. [dx.doi.org/10.1145/2814845]
- “Retrospective: Steven P. Jobs (1955–2011).” *Science* 334 (18 Nov. 2011): 919. [dx.doi.org/10.1126/science.1216019]
- “David F. Noble, 22 July 1945 to 27 December 2010.” *Technology and Culture* 52 no. 2 (2011): 360-372. [dx.doi.org/10.1353/tech.2011.0061]
- “Gender Codes: Defining the Problem” and “Gender Codes: Lessons from History” in Misa, ed., *Gender Codes: Why Women Are Leaving Computing* (Wiley/IEEE Computer Society Press, 2010), 3-23, 251-63.
- “An Interview With Edsger W. Dijkstra.” *Communications of the ACM* 53 no. 8 (2010): 41-47. [dx.doi.org/10.1145/1787234.1787249]
- “Organizing the History of Computing: Lessons Learned at the Charles Babbage Institute,” in John Impagliazzo, Timo Järvi, and Petri Paju, eds., *History of Nordic Computing 2*. Second IFIP WG 9.7 Conference, HiNC2, Turku, Finland, August 21-23, 2007. (Boston: Springer, 2009), 1-12. [dx.doi.org/10.1007/978-3-642-03757-3]
- “Findings Follow Framings: Navigating the Empirical Turn.” *Synthese* 168 no. 3 (2009): 357-375. [dx.doi.org/10.1007/s11229-008-9447-y] <www.jstor.org/stable/40271253>
- “History of Technology,” in Jan K.B. Olsen, Stig A. Pedersen, and Vincent F. Hendricks, eds. *Companion to the Philosophy of Technology* (Wiley-Blackwell, 2009), 7-17.
- “Modernizing European Cities: Technological Uniformity and Cultural Distinction,” in Hård and Misa, *Urban Machinery* (MIT 2008), 1-20. [co-authored with Mikael Hård].
- “Appropriating the International Style: Modernism in East and West,” in Hård and Misa, *Urban Machinery* (MIT 2008), 71-95.

## Other publications [cont.]

- “New Directions in the History of Computing.” *IEEE Annals of the History of Computing* 29 no. 4 (2007) –guest editor special issue [doi.org/10.1109/MAHC.2007.4407439]
- “Understanding ‘How Computing Has Changed the World’.” *IEEE Annals of the History of Computing* 29 no. 4 (2007): 52-63. [doi.org/10.1109/MAHC.2007.4407445]
- “Arthur Norberg, the Charles Babbage Institute, and the History of Computing.” *IEEE Annals of the History of Computing* 29 no. 4 (2007): 8-15. [doi.org/10.1109/MAHC.2007.4407440]
- Tensions of Europe: Technology and the Making of Europe* - a special issue of *History and Technology* 21 no. 1 (2005): 1-139. [coedited with Johan Schot and Ruth Oldenziel] [www.tandfonline.com/toc/ghat20/21/1]
- “Inventing Europe: Technology and the Hidden Integration of Europe.” *History and Technology* 21 no. 1 (2005): 1-19. [coauthored with Johan Schot] [dx.doi.org/10.1080/07341510500037487]
- “Henry Bessemer.” *History of World Trade since 1450*, edited by John J. McCusker. Macmillan Reference, 2005.
- “Modernism in Architecture: Choices, Context, and Consequences.” *Tekniikan Waiheita* 3 (2004): 5-19, 22-23.
- “Beyond Linear Models: Science, Technology, and Processes of Change.” In Karl Grandin, et al. eds., *The Science–Industry Nexus: History, Policy, Implications* (Science History/Watson Publishing, 2004), 257-76.
- The Urban Machine: Recent Literature on European Cities in the 20th Century*. Tensions of Europe, 2003. [co-edited with Mikael Hård].
- Biography of Henry Bessemer. *Oxford Encyclopedia of Economic History*, edited by Joel Mokyr, Oxford University Press, 2003.
- “The Compelling Tangle of Modernity and Technology.” In Misa, et al. eds., *Modernity and Technology*. MIT Press, 2003, 1-30. [doi.org/10.7551/mitpress/4729.003.0003]
- “Iron and Steel Industry.” *History of Science in the United States: An Encyclopedia*, edited by Marc Rothenberg. New York: Garland, 2000.
- Biography of John Butler Tytus. *American National Biography*. Oxford University Press/American Council of Learned Societies, 1999.
- “Procurement: Steel and Armor Plate Industry.” *Oxford Companion to American Military History*. Oxford University Press, 1999.
- “Sears Roebuck in the 20th Century: Comment on Raff & Temin.” In Naomi Lamoreaux, et al. eds. *Learning by Doing in Markets, Firms and Countries*. National Bureau of Economic Research/University of Chicago Press, 1999, 248-51.
- “Toward an Historical Sociology of Business Culture.” *Business and Economic History* 25 no. 1 (1996): 55-64. <www.jstor.org/stable/23703101>
- “Retrieving Sociotechnical Change from Technological Determinism.” In Merritt Roe Smith and Leo Marx, eds., *Does Technology Drive History?* MIT Press, 1994, 115-41.
- “Steel Metallurgy in the Twentieth Century.” *Encyclopedia of American Business History and Biography: Iron and Steel Industry in the 20th Century*. New York: Facts on File/Bruccoli, Clark, 1994, 396-98.

## Other publications [cont.]

“Controversy and Closure in Technological Change: Constructing ‘Steel’.” In Wiebe E. Bijker and John Law, eds. *Shaping Technology/Building Society: Studies in Sociotechnical Change*. MIT Press, 1992, 109-39.

“Theories of Technological Change: Parameters and Purposes.” *Science, Technology & Human Values* 17 no.1 (1992): 3-12. <[www.jstor.org/stable/689847](http://www.jstor.org/stable/689847)>

“Technological Risk and Society: The Interdisciplinary Literature.” *Research in Philosophy and Technology* 11 (1991): 301-86. [with Sohair Elbaz]

*Ethics and Technology in Context: Computers, Medicine, the Third World*. Chicago: Center for the Study of Ethics in the Professions, 1990. [editor]

“How Machines Make History, and How Historians (and Others) Help Them to Do So.” *Science, Technology & Human Values* 13 no. 3/4 (1988): 308-31. Reprinted Rayvon Fouché, ed. *Technology Studies* (London SAGE, 2007). [www.jstor.org/stable/689938](http://www.jstor.org/stable/689938)  
<[doi.org/10.1177/016224398801303-410](https://doi.org/10.1177/016224398801303-410)>

“The Eisen-Bibliothek, Schaffhausen, Switzerland.” *Technology and Culture* 28 no. 2 (1987): 324-27. <[www.jstor.org/stable/3105570](http://www.jstor.org/stable/3105570)>

“The Changing Market for Chemical Knowledge: Applied Chemistry and Chemical Engineering in the Delaware Valley, 1851-1929.” *History and Technology* 2 (1985): 245-68. [[dx.doi.org/10.1080/07341518508581644](https://dx.doi.org/10.1080/07341518508581644)]

“Military Needs, Commercial Realities, and the Development of the Transistor, 1948-1958.” In Merritt Roe Smith, ed. *Military Enterprise and Technological Change*. MIT Press, 1985, 253-87. [[hdl.handle.net/2027/heb01154.0001.001](https://hdl.handle.net/2027/heb01154.0001.001)]

## Professional Activities

Member of Society for the History of Technology; History of Science Society; Association for Computing Machinery.

Society for the History of Technology. Program Committee Chair 1989. Nominating Committee Chair 1991. Long-Range Planning Committee 1994-95. Executive Council 1995-97. Dexter Prize Committee Chair 2001. SIGCIS/Computer History Museum Book Prize Committee Chair 2009. *Technology & Culture* Editor Search Chair 2009 and 2018. Editorial Committee Chair 2014. Session chair, presenter, and/or commentator for annual meetings 1997-2015. President 2019-20.

Association for Computing Machinery. History Committee 2008-18; chair 2014-16. ACM Books Editorial Board, 2013-present.

MIT Press, History of Computing book series co-editor (with William Aspray), 2014-present [<https://mitpress.mit.edu/search-result-list/?series=history-of-computing>]

Austrian Science Fund, reviewer 2023.

Israel Science Foundation, reviewer 2016.

National Academy of Engineering (NAE). Engineering For You (E4U) Video Contest, 2014 IEEE. History Committee 2010-13. IEEE STARS Editorial Board, 2012-13.

Qatar National Research Fund. National Priorities Research Program, reviewer 2013-14.

Andrew W. Mellon Foundation/ACLS Early Career Fellowship Program Committee, 2010-12.

## Professional Activities [cont.]

Council for the Humanities of the Netherlands Organization for Scientific Research (NWO). Fellowship Reviewer, 2012.

Eindhoven University of Technology. School of Innovation Sciences. External Ph.D. thesis evaluation, 2012.

Portuguese Foundation for Science and Technology (FCT). External grant reviewer, 2012.

Turku Institute for Advanced Studies. Postdoctoral Fellow Reviewer, 2010-13.

European Social Science History Conference. Technology network co-chair [with Dick van Lente] organized sessions in Berlin 24-27 March 2004, Amsterdam 22-25 March 2006, Lisbon 27 Feb.-1 March 2008, Ghent 13-16 April 2010.

International Congress for the History of Science. Symposium S-58 on “Iron Curtains and Immaterial Instruments: The Circulation of Software and Computer Science in Cold War Europe.” (Budapest 28 July - 2 August 2009) [co-organized with Gerard Alberts, Maria Bardosova, Helena Durnova].

Conference-workshop on History, Gender, and Computing; University of Minnesota 30-31 May 2008. [organized with Janet Abbate, Veronika Oechtering, and Jeffrey Yost].

Science, Technology, and Modern Culture. Summer school for Dutch Ph.D. students (15-19 Aug. 2005). Anchor teacher.

Tensions of Europe: Technology in the Making of 20th Century Europe. U.S.-European coordinating committee; U.S. coordinator; co-leader research theme on “Narratives on European Cities.” 2000-2005.

National Science Foundation. Societal Dimensions Of Engineering, Science, and Technology Advisory Panel, 2001-3.

International workshop on Technology and Modernity: The Empirical Turn; University of Twente 17-20 November 1999 [with Arie Rip, Philip Brey, and Andrew Feenberg]

Newberry Seminar on Technology, Politics, and Culture. Newberry Library series 1998-2005. [co-founder]

*Science, Technology & Human Values* — official journal of the Society for Social Studies of Science (4S). Contributing Editor, 1989-92. Guest editor for special theme issue on “Theories of Technological Change” (Winter 1992).

International workshop on Policy Implications of New Directions in the History, Sociology, and Economics of Technical Change; University of Twente 20-22 September 1991. [organized with Arie Rip and Johan Schot]

Book manuscripts reviewed for MIT Press, Oxford University Press, St. Martin’s Press, Dorsey Press, Palgrave/Macmillan, University of Minnesota Press, Harvard University Press, Johns Hopkins University Press, University of Chicago Press.

Article manuscripts reviewed for *IEEE Proceedings*; *Communications of the ACM*; *Technology and Culture*; *IEEE Technology and Society Magazine*; *IEEE Annals of the History of Computing*; *Science, Technology & Human Values*; *Isis*; *Social Studies of Science*; *Business History Review*; *History and Technology*; *Enterprise and Society*; *Public Understanding of Science*; *Engineering Studies*; *Annals of Science*; *Philosophy and Rhetoric*; *Textile History*.

## Professional Activities [cont.]

Illinois Institute of Technology. Secretary of the Faculty 1988-89. Program for Science and Technology in Context: Executive Committee 1988-95; Center for Innovative Learning and Education: Faculty Steering Committee 1993-95. National Commission for IIT: Faculty Advisory Committee 1993-94. Center for the Study of Ethics in the Professions: Steering Committee 1988-96; Software Engineering Ethics Project 2002-5. Humanities Department: Executive Council 1998-2002; Armour College Dean Search Committee 1999; Department Search Committee chair 1999-2000.

## Consulting

*Documenting the WWW*. Internet Society, 2007.

*The Future of Manufacturing*. University of Michigan-Dearborn, 2005-6.

*Explore Pennsylvania History* <[www.explorePa.com](http://www.explorePa.com)> “Making Steel” main story, 4 substories, and 40 marker essays, 2004-6. <[explorepahistory.com/story.php?storyId=1-9-15](http://explorepahistory.com/story.php?storyId=1-9-15)>

*World Book Encyclopedia*. Entries on “Iron and Steel,” “Transistor,” “Vacuum Tube,” 2003. Entries on “Cast and casting,” “Forging,” “Foundry,” 2004.

*Steel Standing*. Consultant for planned TV documentary on history of Bethlehem Steel and Bethlehem PA, Lehigh Valley Public Broadcasting, 2001.

*The Federal Government’s Role in the Semiconductor Industry*. Commissioned report for Solar Energy Industries Association, Washington DC, November 1995.

*History of the Naval Air Development Center*. Project report (summary history, oral histories, archival resources) prepared for Naval Air Development Center, Warminster PA, 1982. [with Ed Todd] <[www.resuba.com/wa3dsp/k3nal/PDF/NADC\\_History.pdf](http://www.resuba.com/wa3dsp/k3nal/PDF/NADC_History.pdf)> (Sept. 2003)

## Conference Presentations and Lectures

“Why SIG History Matters: New Data on Gender Bias in ACM’s Founding SIGs 1970–2000.” Capturing Hidden ACM History online seminar, 30 Sept.-1 Oct. 2022

“Inter/Action(s) of Technology and Culture: Leonardo to the Internet.” Bruce MacLaren Lecture, Eastern Kentucky University (EKU) Chautauqua, 15 Sept. 2022

“Moore’s Law, 1965–2016.” IEEE Computer Society Distinguished Webinar, 2 Nov. 2021; UMN ECE 5 May 2022.

“Understanding ‘How Computing Has Changed the World’.” Museum of Informatics & Telecommunications NKUA, University of Athens, 10 Mar. 2020.

“Historical Perspectives on Technology.” University of West Attica, 6 Mar. 2020.

“Dynamics of Gender Bias in Computing.” Department of History and Philosophy of Science, University of Athens, Greek Chapter of the ACM-W, 5 Mar. 2020.

“AI Winters, AI Springs: Turing to Tensor-Flow.” University of Athens lecture series ‘Artificial Intelligence: Historical, Philosophical, Cognitive Dimensions’, 3 Mar. 2020

“Dominance of the Digital (1990–2016).” 2nd CIUHCT Distinguished Lecture at the Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa, 4 Dec. 2018.

“Digital State: The Story of Minnesota’s Computing Industry.” UMN Twin Cities SPIN, 1 Mar. 2018.

## Conference Presentations and Lectures [cont.]

- “Computing Women: Understanding why women in computing tripled during 1965-1985 (and what happened after).” Flatirons Distinguished Lecture at University of Colorado–Boulder, 21 Feb. 2018.
- “Hidden Figures: Documenting Women in Computing at the Charles Babbage Institute.” UMN College of Science & Engineering alumni reunion, 12 May 2017.
- “Charles Babbage, Ada Lovelace, and the Bernoulli Numbers.” UMN CS colloquium 28 Nov. 2016. Plenary lecture to Ada Lovelace conference: Stevens Institute of Technology, 18 Oct. 2013.
- “University of Minnesota and Computing Industry.” UMN CSE-ECE alumni 13 May 2016.
- “The Emergence of Computer Security Discourse at RAND (1958-1970).” Paper to 2015 Cryptologic History Symposium, Center for Cryptologic History (CCH), 23 October 2015.
- “Women in Computing.” Unisys, Lockheed Martin, PDA luncheon, 20 Nov. 2015.
- “Digital State: The Story of Minnesota’s Computing Industry.” Invited talks to University of Minnesota OLLI (Southdale Library), 18 Feb. 2014; Selim Center St. Thomas University, 11 Mar. 2014; SALT Burnsville, 22 Sept 2014; AAUW Minneapolis, 27 Oct. 2014; GOFIRST UMN, 21 Jan. 2015; Friends of the University Libraries, 1 Mar. 2015.
- “From Micro-Pollution to Macro-Economy: Moore’s Law 0.8,” Invited paper to workshop on Computing and Environment, UPMC, Banyuls-sur-Mer, France, 2-3 Oct. 2014
- “Building an Infrastructure for Computer Security History: What is Gained and What is Lost with ‘Big History’ Projects?” History of Science, University of Wisconsin, 6 Dec. 2013.
- “The Dynamics of High-Tech Innovation in Minnesota: Computing and Medical Devices.” Talk to UMN ECE, 31 Oct. 2013.
- “NSF’s FastLane (1950-2012): Lessons in Human-Centered Computing?” Invited talk to Georgia Tech Center for International Strategy, Technology, and Policy, 6 Aug. 2013.
- “Minnesota’s Computer Industry: History, Legacies, Traces.” Paper to Society for Industrial Archeology annual conference, 1 June 2013.
- “Digital State: Industrial Districts and the Emergence of Minnesota’s High Tech Economy,” Invited talk to MIT STS Program, 22 Oct. 2012.
- “Leonardo to the Internet – Prospects for the Future?” Twin Cities Alumni Network (TCAN), 2 May 2012.
- “Designing and Using Cyberinfrastructure: Challenges and Opportunities for History,” SHOT/SIGCIS plenary lecture, 6 Nov. 2011.
- “Why Not Silicon Valley?” Sierra Bravo/Nerdery (Bloomington MN), 3 Aug. 2011.
- “One Hundred Years of IBM: A View from IBM Rochester.” UM Rochester, 14 June 2011.
- “College of Science and Engineering: The Institute of Technology Years (1935-2010).” CSE Inaugural Leadership Celebration, 19 Oct. 2010. University of Minnesota Golden Medallion Reunion, 6 May 2011.
- “Incorporation and Appropriation.” Invited Master class at conference Techno-Topologies: Spatial Perspectives – Spatial Practices, Technical University Darmstadt, 3-5 March 2011.
- “Designing and Using FastLane: History and Cyberinfrastructures.” Invited paper to NSF workshop 27 Sept. 2010; invited seminar to UM CS&E Department 7 Feb. 2011.

## Conference Presentations and Lectures [cont.]

- “Gender and Computing.” UM Osher Lifelong Learning Institute 4 May 2010; Unisys/Lockheed Martin VIP Club 20 Nov. 2015.
- “Honeywell and the ‘Oldest Question’ in Computer History.” Seminar to University of Minnesota ECE department 5 Nov. 2009.
- “From Memories to Sources: Evolving Approaches in Oral Histories.” Invited lecture to summer school ‘Oral History and Technological Memory’ 10-15 August 2009, University of Turku, Finland.
- “History, Gender, and Computing.” Metropolitan State University 17 Feb. 2009.
- “Minnesota’s Hidden History in Computing.” University of Minnesota series 2008-9.
- ‘Why Not Silicon Valley?’ 17 Sept. 2008
  - ‘Origins in the Engineering Research Associates’ 8 Oct. 2008, 9 Sept. 2009, 13 Oct. 2010 (Lockheed-Martin Unisys VIP Club)
  - ‘Lives and Legends at Control Data Corporation’ 19 Nov. 2008
  - ‘The Legacies of Univac’ 17 Dec. 2008
  - ‘Partnerships and Patents: Honeywell and the Computer Industry’ 21 Jan. 2009
  - ‘Minnesota’s Internet Gopher: The Web before the WWW’ 15 April 2009
  - ‘Minnesota’s Supercomputer: IBM’s Blue Gene’ 20 May 2009
- “Realizing User-Centered Computer History: Designing and Using NSF’s FastLane (1990-present)” [with Joline Zepcevski]. Paper to panel at SHOT Lisbon 12-14 Oct. 2008.
- “Tracking Down Industrial America: New Research Agendas in Industrial History.” Invited panel presentation at Rutgers University/MARCH, 25-26 June 2008.
- “The Digital Age: Steps Toward a Manufacturing History” Invited lecture to “Empowering the Silicon Revolution: The Past, Present, and Future of the Semiconductor Equipment and Materials Industry” sponsored by Chemical Heritage Foundation and SEMI, 1-2 April 2008, at Computer History Museum, Mountain View CA.
- “Inside Modern European Cities: Circulation and Appropriation.” Invited workshop at University of Evora, Portugal (3 March 2008).
- “Organizing the History of Computing: ‘Lessons Learned’ at the Charles Babbage Institute.” Invited lecture to Conference on the History of Nordic Computing, 21-23 August 2007, Turku, Finland.
- “Cultural History of Technology: Eras, Circulations, and Appropriations.” Paper prepared for workshop “Concepts and Modalities: Practical Knowledge Transmission” 9-13 July 2007 at Max-Planck-Institut für Wissenschaftsgeschichte (Berlin).
- “Moore’s Law: Dynamics of a Technological Revolution.” Invited talks to International Council on Systems Engineering North Star Chapter (15 March 2007); University of Minnesota CDTL (11 Dec. 2007) and ECE (24 Jan. 2008).
- “Revisiting the ‘Rate’ and ‘Direction’ of Technical Change: Scenarios and Counterfactuals in the Information Technology Revolution.” Paper to Society for the History of Technology 14 Oct. 2006; University of Minnesota HST 27 Oct. 2006.
- “Industrial Structure and Urban Strategies: Lessons from History in a Global Age.” University of Michigan–Dearborn Viscogliosi Series, 14 March 2006.

## Conference Presentations and Lectures [cont.]

- “Toward an Historical Understanding of ‘How Computers Change the World’.” Talk to Informatics Goes Global conference, Indiana University, 3-5 March 2006.
- “Findings Follow Framings: Navigating the Empirical Turn.” Invited lecture for Copenhagen Conference on the Philosophy of Technology, Carlsberg Academy, 13-15 Oct. 2005.
- “The Materiality of Americanism and Anti-Americanism: Skyscrapers in Europe between the Wars.” Invited talk to University of Minnesota 22 Oct. 2004; University of Pennsylvania 26 Sept. 2005; University of Michigan–Dearborn 15 March 2006.
- “The Future of Manufacturing: Historical Perspectives.” Invited talk to University of Michigan–Dearborn, 4 Feb. 2005.
- “An Historical Basis for Innovation.” Invited lecture to Society for Scholarly Publishing, 2004 Top Management Roundtable, Philadelphia, 8-10 Sept. 2004.
- “Making Steel.” Curriculum development workshop for Explore Pennsylvania History, University of Pittsburgh Archives, 23 Aug. 2004.
- “The Question of Technology.” Invited lecture to CONTEC seminar, Technical University of Eindhoven 15 April 2004.
- “Countercurrents in Comparative History.” Paper to Tensions of Europe plenary conference, Budapest, 18-20 March 2004.
- Invited lectures to Ph.D. summer school in history of technology (Suitia, Finland), 26-27 May 2003.
- “Skyscrapers between America and Europe.” Invited talk to History of Science Department, University of Wisconsin-Madison, 5 March 2003.
- “Macro History beyond the ‘Linear Model’ of Science and Industry.” Invited paper for Nobel Symposium “Science and Industry in the 20th Century,” 21-23 Nov. 2002, Stockholm.
- “Skyscrapers, Modernity, and Spatiality: Città Nuova to the World Trade Center.” Plenary lecture to conference “Transforming Spaces: The Topological Turn in Technology Studies” 22-24 March 2002 at Technical University-Darmstadt.
- “Confronting Modernity: Leonardo to the Internet.” Invited talk to MIT STS Program, 11 March 2002.
- “What’s ‘Modern’ about ‘Technology’? Questions for Historians.” Invited lecture to Technical University of Eindhoven, 15 March 2001.
- “Macro History and the Quest for Synthesis.” Talk for SHOT plenary session “How do We Write the History of Technology?” (Detroit MI), 7 October 1999.
- “Geographies of Industry” and “Instruments of Empire.” Invited lectures to TIN-20 project workshop (Technical University of Eindhoven), 25-27 August 1999.
- “Technological Fundamentalism” and “Leonardo to Internet.” Invited lectures to NORFA Ph.D. summer school in history of technology (Bjerringbro, Denmark), 12-18 August 1999.
- “Geographies of Industry in Great Britain: London, Manchester, and Sheffield, 1740-1851.” Invited talk to University of Pennsylvania, 15 March 1999. Presented 27 February 1998 to Newberry Seminar on Technology, Politics, and Culture, Newberry Library, Chicago IL.
- “Historical Variability in Interpreting Technology.” Invited seminar at Institute for Architecture and Humanities (Chicago IL), 16 May 1998.

## Conference Presentations and Lectures [cont.]

- “Constructing Public and Private Space.” Presented 1 December 1997 to American Studies Association, Washington, D.C.
- Invited discussant, workshop on Public Participation in European Science and Technology Options (PESTO), University of Aalborg, 29-31 May 1997.
- “The Materials of Modernism 1900-50.” Invited talk to Science Museum (London), 21 May 1997.
- “Technology and Modernity.” Invited talk to Centre for Technology and Society, NTNU—Trondheim, 5 March 1997.
- “From Social Shaping of Technology to Technological Shaping of Society.” Invited presentation to COST A4 evaluation workshop, NTNU—Trondheim, 6 March 1997.
- “A Nation of Steel, 1865-1925.” Invited talk to Chicago section of ASM International/TSM, 10 December 1996.
- Invited discussant, “Business History,” National Bureau of Economic Research (Cambridge MA), 18-19 October 1996.
- Invited discussant. “Reconceptualizing the History of Business and American Society,” Hagley Museum and Library, 31 May-1 June 1996.
- “Beyond Economics: New Social Science Perspectives and Business History.” Panel for Business History Conference, Columbus OH, 15-17 March 1996.
- “Technology Policy as if History of Technology Mattered.” Invited talk to University of Minnesota, 8 March 1996.
- “Managing Large Technical Systems: An Agenda for Engineering Studies and STS.” Presented 22 October 1995 to Society for Social Studies of Science, Charlottesville VA.
- “What Happened to Steel?” Panel for Midwest Conference on Technology, Employment and Community, University of Illinois at Chicago, 4 March 1995.
- “Science and Technology in Industry.” ACCA chemistry seminar series, 1 November 1994, Argonne National Laboratory.
- “Technology Dynamics: An Approach to Technology Policy.” 18 February 1994, CISST seminar Northwestern University.
- “History, Theory, and Technology Policy.” Paper to ICOHTEC symposium International Congress of History of Science, Zaragoza, Spain, 22-29 August 1993.
- “Urban Systems and Technological Style: Skyscrapers in Chicago and New York, 1885-1901.” Invited presentations to National Museum of American History, 24 March 1992; to University of Pennsylvania, 13 April 1992.
- “The Laboratory and the Workshop.” Invited lecture to special joint plenary session of Conference on Critical Problems and Research Frontiers (sponsored jointly by History of Science Society and Society for History of Technology), Madison WI, 1 November 1991.
- “Constructive Technology Assessment: Cases, Concepts, and Conceptualizations.” Talk to Centre for Studies of Science, Technology and Society, University of Twente, 20 March 1991; presentation to international workshop on Constructive Technology Assessment: Policy Implications of New Directions in the History, Sociology, and Economics of Technical Change; University of Twente 20-22 September 1991.

## Conference Presentations and Lectures [cont.]

- “Retrieving Sociotechnical Change from Technological Determinism.” Talk to Institute for History of Technology, TU—Berlin, 11 May 1990; to Center for Technology and Policy Studies, Apeldoorn, Holland, 14 May 1990; to Centre for Technology and Society, University of Trondheim, 23 May 1990.
- “Technological Risk, Technology Dynamics, Engineering Ethics: Applied Themes for Technology Studies in the 1990s.” Invited lectures to Centre for Technology and Human Values, University of Oslo, and Centre for Technology and Society, University of Trondheim, 16-22 May 1990.
- “Constructing Steel Armor, 1890-1914: Economics, Power and International Relations.” Invited paper to conference on Technological Choices: American and European Perspectives, Indiana University, 12-14 April 1990.
- “Technology as a Force for Change in Business.” Invited paper to workshop on Machines and History: The Question of Technological Determinism, Dibner Institute for the History of Science and Technology, MIT, 2-3 December 1989.
- “The Construction and Destruction of a Heterogeneous Network: The Case of High Speed Tool Steel.” Presented to European Association for the Study of Science and Technology, Amsterdam, 16-19 November 1988.
- “Why (not how) Technologies are Tested.” Presented 15 June 1988 to Hagley Museum and Library, Greenville DE.
- “How Machines Make History.” Presented to Midwest Junto for History of Science, University of Notre Dame, 18-20 March 1988.
- “Controversy and Closure in Technological Change: Setting the Boundaries of ‘Steel,’ 1860-1880.” Invited paper to International Workshop on the Integration of Social and Historical Studies of Technology, University of Twente, Netherlands, 3-5 September 1987.
- “Visualizing Invention and Development: Henry Bessemer and Alexander Holley.” Presented 24 October 1986 to Society for History of Technology, Pittsburgh PA.
- “The Science and Technology of Steelmaking, 1870-1920.” Presented 19 November 1985 to Hagley Museum and Library, Greenville DE.
- “The Context of Technological Knowledge: ‘Iron’ and ‘Steel,’ 1873-1880.” Presented 26 October 1985 to Society for Social Studies of Science, Troy NY.
- “Chemical Engineering at Penn, 1880-1900: Four Reformers.” Presented 27 August 1984 to Division of the History of Chemistry, American Chemical Society, Philadelphia PA.
- “The Changing Market for Chemical Knowledge: Applied Chemistry and Chemical Engineering at the University of Pennsylvania, 1851-1909.” Presented 21 October 1983 to Society for History of Technology, Washington, D.C.

## Book Reviews

- Gerard Alberts and Ruth Oldenziel, *Hacking Europe: From Computer Cultures to Demoscenes*. Reviewed in *INFORMATION & CULTURE* (2015) <[www.infoculturejournal.org/book\\_reviews/alberts.oldenziel\\_misa\\_2015](http://www.infoculturejournal.org/book_reviews/alberts.oldenziel_misa_2015)>
- Laura DeNardis, *The Global War for Internet Governance*. Reviewed in *ISIS* 106 no. 2 (2015): 507-508. <[www.jstor.org/stable/10.1086/682826](http://www.jstor.org/stable/10.1086/682826)>
- W. Bernard Carlson, *Tesla: Inventor of the Electrical Age*. Reviewed in *SCIENCE* (16 August 2013): 715-716 <[dx.doi.org/10.1126/science.1242282](http://dx.doi.org/10.1126/science.1242282)>
- Rima D. Apple, Gregory J. Downey, and Stephen L. Vaughn, *Science in Print: Essays on the History of Science and the Culture of Print* and Adam R. Nelson and John L. Rudolph *Education and the Culture of Print in Modern America*. Reviewed in *INFORMATION & CULTURE* (2013) <[www.infoculturejournal.org/book\\_reviews/apple\\_misa\\_2013](http://www.infoculturejournal.org/book_reviews/apple_misa_2013)>
- Christopher Brown-Syed, *Parents of Invention: The Development of Library Automation Systems in the Late 20th Century*. Reviewed in *INFORMATION & CULTURE* (2012) <[www.infoculturejournal.org/book\\_review/brownsyed\\_misa\\_2012](http://www.infoculturejournal.org/book_review/brownsyed_misa_2012)>
- William Aspray and Barbara M. Hayes, *Everyday Information: The Evolution of Information Seeking in America*. Reviewed in *NATURE* (5 July 2012): 34. <[dx.doi.org/10.1038/487034a](http://dx.doi.org/10.1038/487034a)>
- George Dyson, *Turing's Cathedral: The Origins of the Digital Universe*. Reviewed in *NATURE* (1 March 2012): 32-33. <[dx.doi.org/10.1038/483032a](http://dx.doi.org/10.1038/483032a)>
- David Nye, *When the Lights Went Out: A History of Blackouts in America*. Reviewed in *TECHNOLOGY & CULTURE* 52 no. 2 (2011): 404-6. <[muse.jhu.edu/journals/technology\\_and\\_culture/v052/52.2.misa.html](http://muse.jhu.edu/journals/technology_and_culture/v052/52.2.misa.html)>
- James Gleick, *The Information: A History, A Theory, A Flood*. Reviewed in *NATURE* (17 March 2011): 300-1. <[dx.doi.org/10.1038/471300a](http://dx.doi.org/10.1038/471300a)>
- Kurt Beyer, *Grace Hopper and the Invention of the Information Age*. Reviewed in *ISIS* 101 no. 2 (2010): 448-449. <[www.jstor.org/stable/10.1086/655734](http://www.jstor.org/stable/10.1086/655734)>
- William Aspray and Paul Ceruzzi, *The Internet and American Business*. Reviewed in *JOURNAL OF THE AMERICAN SOCIETY FOR INFORMATION SCIENCE AND TECHNOLOGY* 60 no. 10 (2009): 2165-67. <[dx.doi.org/10.1002/asi.21124](http://dx.doi.org/10.1002/asi.21124)>
- “Transforming the International System” on Geoffrey L. Herrera, *Technology and International Transformation: The Railroad, the Atom Bomb, and the Politics of Technological Change*. Essay review in *TECHNOLOGY & CULTURE* 49 no. 1 (2008): 230-233. <[www.jstor.org/stable/40061386](http://www.jstor.org/stable/40061386)>
- Erik van der Vleuten and Arne Kaijser, *Networking Europe*. Reviewed in *ECONOMIC HISTORY REVIEW* 60 #4 (2007): 856-858. <[www.jstor.org/stable/4502174](http://www.jstor.org/stable/4502174)>
- David E. Nye, *Technology Matters: Questions to Live With*. Reviewed in *TECHNOLOGY & CULTURE* 48 (2007): 1-3. <[www.jstor.org/stable/40061483](http://www.jstor.org/stable/40061483)>

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- Robert Angevine, *The Railroad and the State: War, Politics, and Technology in Nineteenth-Century America*. Reviewed in *JOURNAL OF INTERDISCIPLINARY HISTORY* 37 #4 (2007): 640-641. <[www.jstor.org/stable/4139518](http://www.jstor.org/stable/4139518)>
- Margaret Jacob and Larry Stewart, *Practical Matter: Newton's Science in the Service of Industry and Empire, 1687-1851*. Reviewed in *BUSINESS HISTORY REVIEW* 79 #3 (2005): 668-670.
- "A Gramophone in Every Grave" on Sara Danius, *The Senses of Modernism: Technology, Perception, and Aesthetics*. Essay review in *HISTORY AND TECHNOLOGY* 21 (2005): 351-55. <[dx.doi.org/10.1080/07341510500198735](http://dx.doi.org/10.1080/07341510500198735)>
- David R. Meyer, *The Roots of American Industrialization*. Reviewed in *JOURNAL OF AMERICAN HISTORY* 91 #3 (2004): 1013-14. <[www.jstor.org/stable/3662904](http://www.jstor.org/stable/3662904)>
- Steven W. Usselman, *Regulating Railroad Innovation: Business, Technology, and Politics in America, 1840-1920*. Reviewed in *BUSINESS HISTORY REVIEW* 77 (2003): 296-300. <[www.jstor.org/stable/30041147](http://www.jstor.org/stable/30041147)>
- Urs von Burg, *The Triumph of the Ethernet: Technological Communities and the Battle for the LAN Standard*. Reviewed in *ANNALS OF THE HISTORY OF COMPUTING* 24 #4 (Oct.-Dec. 2002): 51-52.
- John Hinshaw, *Steel and Steelworkers: Race and Class Struggle in Twentieth-Century Pittsburgh*. Reviewed in *BUSINESS HISTORY REVIEW* 76(2002): 858-60. <[www.jstor.org/stable/4127716](http://www.jstor.org/stable/4127716)>
- Kenneth Warren, *Big Steel: The First Century of the United States Steel Corporation, 1901-2001*. Reviewed in *TECHNOLOGY AND CULTURE* 43 (April 2002): 443-44. <[www.jstor.org/stable/25147938](http://www.jstor.org/stable/25147938)>
- David A. Kirsch, *The Electric Vehicle and the Burden of History*. Reviewed in *BUSINESS HISTORY REVIEW* 75 #1 (2001): 207-10. <[www.jstor.org/stable/3116572](http://www.jstor.org/stable/3116572)>
- John Lienhard, *The Engines of Our Ingenuity: An Engineer Looks at Technology and Culture* reviewed in *AMERICAN SCIENTIST* 89 (March-April 2001).
- John Ziman, *Technological Innovation as an Evolutionary Process*. Reviewed in *AMERICAN SCIENTIST* 89 (January-February 2001): 88-89.
- Donald MacKenzie and Judy Wajcman, *The Social Shaping of Technology* (2nd. ed.) reviewed in *ANNALS OF SCIENCE* 57 (2000): 459-60.
- Philip Scranton, *Endless Novelty: Specialty Production and American Industrialization 1865-1925* reviewed in *AMERICAN HISTORICAL REVIEW* 104 (1999): 1307-8. <[www.jstor.org/stable/2649632](http://www.jstor.org/stable/2649632)>
- Susan K. Schmidt and Raymund Werle, *Coordinating Technology* reviewed in *ANNALS OF THE HISTORY OF COMPUTING* 21 #3 (1999): 76-77.
- Kenneth Warren, *Triumphant Capitalism: Henry Clay Frick and the Industrial Transformation of America* reviewed in *BUSINESS HISTORY REVIEW* 71 (1997): 123-24. <[www.jstor.org/stable/3116335](http://www.jstor.org/stable/3116335)>
- Carol Willis, *Form Follows Finance: Skyscrapers and Skylines in New York and Chicago* reviewed in *BUSINESS HISTORY REVIEW* 71 (1997): 327-28. <[www.jstor.org/stable/3116168](http://www.jstor.org/stable/3116168)>

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- Sarah Landau and Carl Condit, *Rise of the New York Skyscraper: 1865-1913* reviewed in *ISIS* 88 (1997): 352-3. <[www.jstor.org/stable/236617](http://www.jstor.org/stable/236617)>
- Robert Gordon, *American Iron, 1607-1900* reviewed in *ISIS* 88 (1997): 128-9. <[www.jstor.org/stable/235837](http://www.jstor.org/stable/235837)>
- Steven Shapin, *A Social History of Truth* reviewed in *TECHNOLOGY & CULTURE* 38 (1997): 238-40. <[www.jstor.org/stable/3106794](http://www.jstor.org/stable/3106794)>
- Bruno Latour, *Aramis, or the Love of Technology* reviewed in *AMERICAN SCIENTIST* 85 (March/April 1997): 196.
- Henry M. McKiven, *Iron and Steel: Class, Race and Community in Birmingham, Alabama, 1875-1920* reviewed in *JOURNAL OF ECONOMIC HISTORY* 56 (June 1996): 527-29. <[www.jstor.org/stable/2124005](http://www.jstor.org/stable/2124005)>
- A. E. Rogge, et al., *Raising Arizona's Dams* reviewed in *LABOR HISTORY* 37 (Winter 1995-96): 129-31.
- Mikael Hård, *Machines are Frozen Spirit* reviewed in *AMERICAN HISTORICAL REVIEW* 100 (1995): 1610-11. <[www.jstor.org/stable/2169994](http://www.jstor.org/stable/2169994)>
- William Aspray, *Technological Competitiveness* reviewed in *ANNALS OF THE HISTORY OF COMPUTING* 16 #4 (1994): 92-94.
- Newton Copp and Andrew Zanella, *Discovery, Innovation, and Risk* reviewed in *ISIS* 85 (1994): 491-3. <[www.jstor.org/stable/235470](http://www.jstor.org/stable/235470)>
- Paul Israel, *From Machine Shop to Industrial Laboratory: Telegraphy and the Changing Context of American Invention, 1830-1920* reviewed in *ISIS* 84 (1993): 816-18. <[www.jstor.org/stable/235165](http://www.jstor.org/stable/235165)>
- Max Holland, *When the Machine Stopped: A Cautionary Tale from Industrial America* reviewed in *TECHNOLOGY AND CULTURE* 34 (1993): 173-75. <[www.jstor.org/stable/3106482](http://www.jstor.org/stable/3106482)>
- Donald MacKenzie, *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance* reviewed in *SCIENCE, TECHNOLOGY & HUMAN VALUES* 17 (1992): 127-29. <[www.jstor.org/stable/689853](http://www.jstor.org/stable/689853)>
- Richard F. Hirsh, *Technology and Transformation in the American Electric Utility Industry* reviewed in *ISIS* 82 (1991): 598-600. <[www.jstor.org/stable/233296](http://www.jstor.org/stable/233296)>
- Joseph Frazier Wall, *Andrew Carnegie* reviewed in *ISIS* 81 (1990): 593-4. <[www.jstor.org/stable/233479](http://www.jstor.org/stable/233479)>
- George David Smith, *From Monopoly to Competition: The Transformations of Alcoa, 1888-1986* reviewed in *TECHNOLOGY AND CULTURE* 31 (1990): 137-39. <[www.jstor.org/stable/3105766](http://www.jstor.org/stable/3105766)>
- Reese V. Jenkins, et al., eds., *The Papers of Thomas A. Edison volume 1: The Making of an Inventor, February 1847-June 1873* reviewed in *SCIENCE* 245 (18 August 1989): 768-69. <[www.jstor.org/stable/1704052](http://www.jstor.org/stable/1704052)>
- Paul A. Tiffany, *The Decline of American Steel: How Management, Labor, and Government Went Wrong* reviewed in *ISIS* 80 (1989): 174-75. <[www.jstor.org/stable/234414](http://www.jstor.org/stable/234414)>
- Geoffrey Tweedale, *Sheffield Steel and America: A Century of Commercial and Technological Interdependence, 1830-1930* reviewed in *ISIS* 79 (1988): 527-28. <[www.jstor.org/stable/234719](http://www.jstor.org/stable/234719)>

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William F. Furter, *A Century of Chemical Engineering* reviewed in TECHNOLOGY AND CULTURE 25 (1984): 370-71. <[www.jstor.org/stable/3104751](http://www.jstor.org/stable/3104751)>