

## CURRICULUM VITAE

John Troy Scott

Campus Office:  
Professor John T. Scott  
Department of Economics  
Dartmouth College  
Hanover, New Hampshire 03755  
U.S.A.

Home Office:  
Dr. John T. Scott  
13 Mitchell Lane  
Hanover, NH 03755  
U.S.A.

Telephone: 603-646-2941

Telephone: 603-643-6075

Fax: 603-646-2122

Electronic Mail Address: [john.t.scott@dartmouth.edu](mailto:john.t.scott@dartmouth.edu)

Web site: <http://www.dartmouth.edu/~jtscott>

John T. Scott received the Ph.D. in Economics from Harvard University and the A.B. in Economics and English from the University of North Carolina at Chapel Hill. He holds the position of Professor of Economics at Dartmouth College. His teaching and research are in the areas of industrial organization and the economics of technological change. While a Teaching Fellow at Harvard University, he received the Allyn Young Teaching Prize. He served as the President of the Industrial Organization Society and as an Associate Editor and a member of the editorial boards of the *International Journal of Industrial Organization*, the *Review of Industrial Organization*, and *The Journal of Industrial Economics*. His research has been supported by the National Institute of Standards and Technology, the National Science Foundation, the National Research Council of the National Academies, the World Bank, the United Nations Development Programme, and the Organization for Economic Co-operation and Development. He served as an economist at the Board of Governors of the Federal Reserve System and at the Federal Trade Commission.

## PUBLICATIONS

**Books and Monographs (consulting/contract research reports are listed separately below)**

*Bending the Arc of Innovation: Public Support of R&D in Small Entrepreneurial Firms*, (with Albert N. Link), (New York: Palgrave Macmillan, 2013).

*Employment Growth from Public Support of Innovation in Small Firms*, (with Albert N. Link), (Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, 2012).

*Public Goods, Public Gains: Calculating the Social Benefits of Public R&D*, (with Albert N. Link), (Oxford; New York: Oxford University Press, 2011).

*Evaluating Public Research Institutions: The U.S. Advanced Technology Program's Intramural Research Initiative*, (with Albert N. Link), (London; New York: Routledge, 2005).

*Environmental Research and Development: US Industrial Research, the Clean Air Act and Environmental Damage*, (Cheltenham, UK; Northampton, Massachusetts: Edward Elgar Publishing, 2003).

*Public Accountability: Evaluating Technology-Based Public Institutions* (with Albert N. Link), (Boston, Massachusetts: Kluwer Academic Publishers, 1998).

*Purposive Diversification and Economic Performance*, (Cambridge; New York: Cambridge University Press, 1993). Republished in a paperback edition, 2005.

*Market Structure and Technological Change* (with William L. Baldwin), in the series *Fundamentals of Pure and Applied Economics*, vol. 17, (Chur; London; Paris; New York: Harwood Academic Publishers, 1987; Taylor and Francis e-Books, 2013).

*Price and Nonprice Competition in Banking*, (Boston: Federal Reserve Bank of Boston, 1977).

### **Journal Publications and Book Chapters**

Some of the older articles are available in similar versions as working papers, although the final, published versions do differ from the working papers. Those older working papers can be found at <http://www.dartmouth.edu/~jtscott> .

“The Entrepreneur’s Idea and Outside Finance: Theory and Evidence about Entrepreneurial Roles,” (with Troy J. Scott), available in the SSRN Working Paper collection at <http://ssrn.com/abstract=2576406> and currently under review.

“Standards and Innovation: US Public/Private Partnerships to Support Technology-based Economic Growth,” (with Troy J. Scott), *Economics of Innovation and New Technology*, Vol. 24, No. 5 (2015), pp. 457-489.

“Research, Science, and Technology Parks: Vehicles for Technology Transfer,” (with Albert N. Link), Chapter 6, pp. 168-187, in *The Chicago Handbook of University Technology Transfer and Academic Entrepreneurship*, edited by Albert N. Link, Donald S. Siegel, and Mike Wright (Chicago and London: University of Chicago Press, 2015).

“The U.S. Federal Trade Commission’s Line of Business Program and Innovation Research,” *Science and Public Policy*, Oxford University Press, Vol. 41, Issue 4 (July 2014), pp. 438-448.

- “Innovation Rivalry: Theory and Empirics,” (with Troy J. Scott), *Economia e Politica Industriale-Journal of Industrial and Business Economics*, Vol. 41, No. 1 (March 2014), pp. 25-53.
- “Public R&D Subsidies, Outside Private Support, and Employment Growth,” (with Albert N. Link), *Economics of Innovation and New Technology*, Vol. 22, No. 6, 2013, pp. 537-550.
- “Environmental Research and Development, Public Policy, and Value Chain Management: A Competitive Advantage Perspective,” in *Sustainable Value Chain Management: A Research Anthology*, edited by Adam Lindgreen, François Maon, Joëlle Vanhamme, and Sankar Sen, chapter 3, pp. 39-57 (Farnham, Surrey, England: Gower Publishing, 2013). A working paper version, “Public Policy and the Corporate Social Responsibility of Value Chain Management of Environmental Research and Development,” is available on-line at: <http://ssrn.com/abstract=2002780>.
- “The Theory and Practice of Public-Sector R&D Economic Impact Analysis,” (with Albert N. Link), Chapter 2 of *Handbook on the Theory and Practice of Program Evaluation*, edited by Albert N. Link and Nicholas S. Vonortas (Edward Elgar, 2013), pp. 15-55.
- “Employment Growth from Public Support of Innovation in Small Firms,” (with Albert N. Link), *Economics of Innovation and New Technology*, Vol. 21, No. 7, (October 2012), pp. 655-678. Reprinted in *Public Support of Innovation in Entrepreneurial Firms*, edited by Albert N. Link (Edward Elgar Publishing, 2013).
- “On the Social Value of Quality: An Economic Evaluation of the Baldrige Performance Excellence Program,” (with Albert N. Link), *Science and Public Policy*, Oxford University Press, Vol. 39, Issue 5 (October 2012), pp. 680-689.
- "Employment Growth from the Small Business Innovation Research Program," (with Albert N. Link), *Small Business Economics*, Volume 39, Number 2 (September 2012), pp. 265-287. Reprinted in *Public Support of Innovation in Entrepreneurial Firms*, edited by Albert N. Link (Edward Elgar Publishing, 2013).
- “The Small Business Innovation Research Program,” (with Albert N. Link), *Issues in Science and Technology*, National Academy of Sciences, Summer 2012, pp. 89-92.
- “The Exploitation of Publicly Funded Technology,” (with Albert N. Link), *Journal of Technology Transfer*, Volume 37, Number 3 (June 2012), pp. 375-383. Reprinted in *Public Support of Innovation in Entrepreneurial Firms*, edited by Albert N. Link (Edward Elgar Publishing, 2013).

- “Thoughts about the Diversity of Evaluations,” (with Albert N. Link), in *The Economics of Evaluation in Public Programs*, edited by Albert N. Link and John T. Scott (Cheltenham, U.K.; Northampton, Massachusetts, U.S.A.: Edward Elgar Publishing, 2011), pp. xiii-xviii.
- “Government as Entrepreneur: Evaluating the Commercialization Success of SBIR Projects,” (with Albert N. Link), *Research Policy*, Volume 39, Issue 5 (June 2010), pp. 589-601. Reprinted in *Public Support of Innovation in Entrepreneurial Firms*, edited by Albert N. Link (Edward Elgar Publishing, 2013).
- “Cost-Benefit Analysis for Global Public-Private Partnerships: An Evaluation of the Desirability of Intergovernmental Organizations Entering into Public-Private Partnerships,” *Journal of Technology Transfer*, Volume 34, Number 6 (December 2009), pp. 525-559.
- “Evaluating Public-Sector Intramural Research Programmes: The Case of the U.S. Advanced Technology Program’s Intramural Research Initiative,” (with Albert N. Link), *International Journal of Public Policy*, Volume 4 (2009), pp. 532-548.
- “Private Investor Participation and Commercialization Rates for Government-sponsored Research and Development: Would a Prediction Market Improve the Performance of the SBIR Programme?” (with Albert N. Link), *Economica*, Volume 76, Issue 302 (April 2009), pp. 264-281. Reprinted in *Public Support of Innovation in Entrepreneurial Firms*, edited by Albert N. Link (Edward Elgar Publishing, 2013). Reprinted in *Recent Developments in the Economics of Science and Innovation*, edited by Albert N. Link and Cristiano Antonelli (Edward Elgar Publishing, 2014).
- “Competition in Research and Development: A Theory for Contradictory Predictions,” *Review of Industrial Organization*, Volume 34, Number 2 (March 2009), pp. 153-171.
- “Intelligent Machine Technology and Productivity Growth,” (with David P. Leech), *Economics of Innovation and New Technology*, Volume 17, Issues 7 & 8, (October & November 2008), pp. 677-687. Reprinted in *The Economics of Evaluation in Public Programs*, edited by Albert N. Link and John T. Scott (Cheltenham, U.K.; Northampton, Massachusetts, U.S.A.: Edward Elgar Publishing, 2011), pp. 362-372. Reprinted in *Technology Infrastructure*, edited by Cristiano Antonelli, Albert N. Link, and Stan Metcalfe (London; New York: Routledge, 2009; 2013), pp. 61-71.
- “The National Cooperative Research and Production Act,” in *Issues in Competition Law and Policy*, vol. II, Wayne D. Collins, ed. (Chicago: American Bar Association, 2008), pp. 1297-1317, also available online at: <http://ssrn.com/abstract=1295460>.

- “Multimarket Contacts,” in *Issues in Competition Law and Policy*, vol. II, Wayne D. Collins, ed. (Chicago: American Bar Association, 2008), pp. 1553-1573, also available online at: <http://ssrn.com/abstract=1295487>.
- “The Economics of University Research Parks,” (with Albert N. Link), *Oxford Review of Economic Policy*, Volume 23, Number 4 (Winter 2007), pp. 661-674. Reprinted in *Recent Developments in the Economics of Science and Innovation*, edited by Albert N. Link and Cristiano Antonelli (Edward Elgar Publishing, 2014).
- “U.S. University Research Parks,” (with Albert N. Link), *Journal of Productivity Analysis*, Volume 25, Number 1 (April 2006), pp. 43-55.
- “In Memoriam: Paul A. Geroski,” *Review of Industrial Organization*, Volume 28, Number 2 (March 2006), p. 81.
- “An Economic Evaluation of the Baldrige National Quality Program,” (with Albert N. Link), *Economics of Innovation and New Technology*, Volume 15, Issue 1 (January 2006), pp. 83-100. Reprinted in *The Economics of Evaluation in Public Programs*, edited by Albert N. Link and John T. Scott (Cheltenham, U.K.; Northampton, Massachusetts, U.S.A.: Edward Elgar Publishing, 2011), pp. 181-198.
- “Opening the Ivory Tower’s Door: An Analysis of the Determinants of the Formation of U.S. University Spin-off Companies,” (with Albert N. Link), *Research Policy*, Volume 34, Issue 7 (September 2005), pp. 1106-1112.
- “Corporate Social Responsibility and Environmental Research and Development,” *Structural Change and Economic Dynamics*, Volume 16, Issue 3 (September 2005), pp. 313-331.
- “Public Policy and Environmental Research and Development,” in *Essays in Honor of Edwin Mansfield: The Economics of R&D, Innovation, and Technological Change*, edited by Albert N. Link and F. M. Scherer (New York: Springer Science, 2005), pp. 109-127.
- “Universities as Partners in U.S. Research Joint Ventures,” (with Albert N. Link), *Research Policy*, Volume 34, Issue 3 (April 2005), pp. 385-393.
- “Evaluating Public Sector R&D Programs: The Advanced Technology Program’s Investment in Wavelength References for Optical Fiber Communications,” (with Albert N. Link), *The Journal of Technology Transfer*, Vol. 30, Nos. 1-2 (January 2005), pp. 241-251. Reprinted in *Essays in Honor of Edwin Mansfield: The Economics of R&D, Innovation, and Technological Change*, edited by Albert N. Link and F. M. Scherer (New York: Springer Science, 2005), pp. 87-97. Reprinted in *The Economics of Evaluation in Public Programs*, edited by Albert N. Link and John T. Scott (Cheltenham, U.K.; Northampton, Massachusetts, U.S.A.: Edward Elgar Publishing, 2011), pp. 351-361.

- Review of Claes Brundenius, ed., *Technological Change and the Environmental Imperative: Challenges to the Copper Industry* (Cheltenham, U.K.: Edward Elgar, 2003). *The Journal of Technology Transfer*, Vol. 29 (2004), pp. 385-386.
- “U. S. Science Parks: The Diffusion of an Innovation and Its Effects on the Academic Missions of Universities,” (with Albert N. Link), *International Journal of Industrial Organization*, Vol. 21, Issue 9 (November 2003), pp. 1323-1356.
- “Absorptive Capacity and the Efficiency of Research Partnerships,” *Technology Analysis & Strategic Management*, Vol. 15, No. 2 (June 2003), pp. 247-253.
- “Universities as Research Partners,” (with Bronwyn H. Hall and Albert N. Link), *The Review of Economics and Statistics*, Vol. 85, No. 2 (May 2003), pp. 485-491. Reprinted in *Entrepreneurship and Technology Policy*, edited by Albert N. Link (Edward Elgar, 2006). An earlier version is available as NBER Working Paper No. 7643 at <http://papers.nber.org/papers>.
- “The Growth of Research Triangle Park,” (with Albert N. Link), *Small Business Economics*, Volume 20, (March 2003), pp. 167-175.
- “Explaining Observed Licensing Agreements: Toward a Broader Understanding of Technology Flows,” (with Albert N. Link), *Economics of Innovation and New Technology*, Vol. 11, no. 3, (2002), pp. 211-231.
- “Public/Private Technology Partnerships: Evaluating SBIR-Supported Research,” (with David B. Audretsch and Albert N. Link), *Research Policy*, vol. 31, issue 1 (January 2002), pp. 145-158. Reprinted in *Entrepreneurship and Technology Policy*, edited by Albert N. Link (Edward Elgar, 2006). Reprinted in *The Economics of Innovation Policy*, Vol. 1, *Foundations of Innovation Policy*, edited by Albert N. Link (Edward Elgar Publishing, 2008). Reprinted in *Public Support of Innovation in Entrepreneurial Firms*, edited by Albert N. Link (Edward Elgar Publishing, 2013).
- “Strategic Research Partnerships: What Have We Learned?,” in U.S. National Science Foundation, Division of Science Resources Studies, *Strategic Research Partnerships: Proceedings from an NSF Workshop*, NSF 01-336 (Arlington, Virginia: U.S. National Science Foundation, 2001), pp. 195-205.
- “Designing Multimarket-Contact Hypothesis Tests: Patent Citations and Multimarket Contact in the Product and Innovation Markets of the Chemicals Industry,” in *Multinunit Organization and Multimarket Strategy ; Advances in Strategic Management*, Vol. 18, (edited by Joel A. C. Baum and Henrich R. Greve), Oxford, UK: JAI/Elsevier Science, 2001, pp. 175-202.
- “Public/Private Partnerships: Stimulating Competition in a Dynamic Market,” (with Albert N. Link), *International Journal of Industrial Organization*, vol. 19, issue 5

- (April 2001), pp. 763-794. Reprinted in *Entrepreneurship and Technology Policy*, edited by Albert N. Link (Edward Elgar, 2006). Reprinted in *The Economics of Innovation Policy*, Vol. 2, *Innovation Policies and Social Impact*, edited by Albert N. Link (Edward Elgar Publishing, 2008). Reprinted in *The Economics of Evaluation in Public Programs*, edited by Albert N. Link and John T. Scott (Cheltenham, U.K.; Northampton, Massachusetts, U.S.A.: Edward Elgar Publishing, 2011), pp. 373-404. Reprinted in *Recent Developments in the Economics of Science and Innovation*, edited by Albert N. Link and Cristiano Antonelli (Edward Elgar Publishing, 2014).
- “Barriers Inhibiting Industry from Partnering with Universities: Evidence from the Advanced Technology Program,” (with Bronwyn H. Hall and Albert N. Link), *Journal of Technology Transfer*, vol. 26 (2001), pp. 87-98. Reprinted in *The Economics of Innovation Policy*, Vol. 2, *Innovation Policies and Social Impact*, edited by Albert N. Link (Edward Elgar Publishing, 2008).
- “An Assessment of the Small Business Innovation Research Program in New England: Fast Track Compared with Non-Fast Track Projects,” in *The Small Business Innovation Research Program: An Assessment of the Department of Defense Fast Track Initiative* (edited by Charles W. Wessner), Washington, DC: National Academy Press, 2000, pp. 104-140.
- "Estimates of the Social Returns to Small Business Innovation Research Projects," (with Albert N. Link) in *The Small Business Innovation Research Program: An Assessment of the Department of Defense Fast Track Initiative* (edited by Charles W. Wessner), Washington, DC: National Academy Press, 2000, pp. 275-290.
- "Statistical Analysis of the National Academy of Sciences Survey of Small Business Innovation Research Awardees: Analyzing the Influence of the Fast Track Program," (with David B. Audretsch and Albert N. Link), in *The Small Business Innovation Research Program: An Assessment of the Department of Defense Fast Track Initiative* (edited by Charles W. Wessner), Washington, DC: National Academy Press, 2000, pp. 291-306.
- “The Directions for Technological Change: Alternative Economic Majorities and Opportunity Costs,” *Review of Industrial Organization*, Volume 17, No. 1 (August 2000), pp. 1-16.
- "The Nature of Innovation Market Failure and the Design of Public Support for Private Innovation," (with Stephen Martin), *Research Policy*, Vol. 29, Nos. 4-5 (April 2000), pp. 437-447. Reprinted in *The Economics of Innovation Policy*, Vol. 1, *Foundations of Innovation Policy*, edited by Albert N. Link (Edward Elgar Publishing, 2008).
- “R&D and Government Initiatives,” in *The Knowledge-Based Economy: The Global Challenges of the 21<sup>st</sup> Century*, edited by Antoni Kuklinski and Witold M.

- Orlowski, Science and Government Series, volume 4 (Warsaw: State Committee for Scientific Research, Republic of Poland, 2000) pp. 62-68.
- "The Service Sector's Acquisition and Development of Information Technology: Infrastructure and Productivity," *Journal of Technology Transfer*, Vol. 24, No. 1 (April 1999), pp. 37-54.
- "Financing and Leveraging Public/Private Partnerships: The Hurdle-Lowering Auction," *STI (Science, Technology, Industry) Review*, No. 23, Paris, OECD, 1998, pp. 67-84. Reprinted in *The Economics of Innovation Policy*, Vol. 1, *Foundations of Innovation Policy*, edited by Albert N. Link (Edward Elgar Publishing, 2008).
- "Assessing the Infrastructural Needs of a Technology-Based Services Sector: A New Approach to Technology Policy Planning" (with Albert N. Link), in *STI (Science, Technology, Industry) Review*, No. 22, Paris, OECD, 1998, pp. 171-207.
- "Schumpeterian Competition and Environmental R&D," *Managerial and Decision Economics*, Vol. 18, No. 6 (September 1997), pp. 455-469.
- "Evaluating Technology-Based Public Institutions: Lessons from the National Institute of Standards and Technology" (with Albert N. Link), in *Policy Evaluation in Innovation and Technology: Towards Best Practices*, OECD Proceedings from a conference on 26-27 June 1997, edited by George Papaconstantinou and Wolfgang Polt (Paris: OECD, 1997), pp. 255-277.
- "Environmental Research Joint Ventures among Manufacturers," *Review of Industrial Organization*, Vol. 11, No. 5 (October 1996), pp. 655-679.
- Review of *The Economics of Localized Technological Change and Industrial Dynamics*, by Cristiano Antonelli, (Dordrecht, The Netherlands: Kluwer Academic Publishers, 1995), in *Empirica*, Vol. 22 (1995), pp. 245-249.
- "Diversification and Industry Evolution," *Review of Industrial Organization*, Vol. 10, No. 5 (October 1995), pp. 607-611.
- "The Damoclean Tax and Innovation," *Journal of Evolutionary Economics*, Vol. 5, No. 1 (February 1995), pp. 71-89. Reprinted in *The Economics of Innovation Policy*, Vol. 1, *Foundations of Innovation Policy*, edited by Albert N. Link (Edward Elgar Publishing, 2008).
- "Multimarket Contact Among Diversified Oligopolists," *International Journal of Industrial Organization*, Vol. 9, No. 2 (June 1991) pp. 225-238.
- "Research Diversity Induced by Rivalry," chapter 9, pp. 132-151, in *Innovation and Technological Change*, edited by Zoltan J. Acs and David B. Audretsch (London: Harvester-Wheatsheaf, 1991) (Co-published with the University of Michigan Press).



- "Purposeful Diversification of R & D and Technological Advancement," pp. 7-28, *Advances in Applied Micro-economics*, Vol. 5, edited by Albert N. Link and V. Kerry Smith, (Greenwich, CT; London, England: JAI Press Inc., 1990).
- "Purposive Diversification as a Motive for Merger," *International Journal of Industrial Organization*, Vol. 7, No. 1 (March 1989), pp. 35-47.
- "Historical and Economic Perspectives of the National Cooperative Research Act," pp. 65-84 in *Cooperative Research and Development: The Industry-University-Government Relationship*, edited by Albert N. Link and Gregory Tassef (Boston: Kluwer Academic Publishers, 1989).
- Review of *Economic Policy and Technological Performance*, edited by Partha Dasgupta and Paul Stoneman, (Cambridge: Cambridge University Press, 1987), in *Review of Industrial Organization*, Vol. 4, No. 1 (Spring 1989), pp. 159-160.
- "Diversification versus Co-operation in R&D Investment," *Managerial and Decision Economics*, Vol. 9, No. 3 (September 1988), pp. 173-186.
- "Purposive Diversification of R&D in Manufacturing," *The Journal of Industrial Economics*, Vol. 36, No. 2 (December 1987), pp. 193-205 (with George Pascoe).
- "Beyond Firm and Industry Effects on Profitability in Imperfect Markets," *The Review of Economics and Statistics*, Vol. 68, No. 2 (May 1986), pp. 284-292 (with George Pascoe).
- "Comment" on Michael Spence's "Capital Structure and the Corporation's Product Market Environment," in *Corporate Capital Structures in the United States*, ed. Benjamin M. Friedman, pp. 378-382 (Chicago: University of Chicago Press for the National Bureau of Economic Research, 1985).
- "Scale Economies in Research and Development: A Reply," *The Journal of Industrial Economics*, Vol. 33, No. 3 (March 1985), p. 363 (with Meir Kohn).
- "Capital Costs and Profitability," *International Journal of Industrial Organization*, Vol. 2, No. 3 (September 1984), pp. 217-233 (with George Pascoe).
- "Firm Versus Industry Variability in R&D Intensity," in *R&D, Patents, and Productivity*, ed. Zvi Griliches, chapter 10, pp. 233-245 (Chicago: University of Chicago Press for the National Bureau of Economic Research, 1984).
- "Multimarket Contact and Economic Performance," *The Review of Economics and Statistics*, Vol. 64, No. 3 (August 1982), pp. 368-375.

- "Scale Economies in Research and Development: the Schumpeterian Hypothesis," *The Journal of Industrial Economics*, Vol. 30, No. 3 (March 1982), pp. 239-249 (with Meir Kohn).
- "The Pure Capital-Cost Barrier to Entry," *The Review of Economics and Statistics*, Vol. 63, No. 3 (August 1981), pp. 444-446.
- "Homogenizing Deconcentration: Estimation and Simulation," *The Review of Economics and Statistics*, Vol. 62, No. 4 (November 1980), pp. 612-15.
- "Corporate Finance and Market Structure," Chapter 13 of *Competition in the Open Economy: A Model Applied to Canada*, by Richard E. Caves, et al. (Cambridge: Harvard University Press, 1980), pp. 325-359.
- Review of *Factors in Business Investment*, by Robert Eisner, in *Southern Economic Journal*, Vol. 46, No. 3 (January 1980), pp. 992-93.
- "Economies of Scale and the Profitability of Marginal-Cost Pricing: A Note," *The Quarterly Journal of Economics* (November 1979), pp. 741-742.
- Review of *Understanding Capital Markets*, Volume II . . . , edited by Arnold W. Sametz and Paul Wachter, in *Southern Economic Journal*, Vol. 45, No. 2 (October 1978), pp. 663-64.
- "Nonprice Competition in Banking Markets," *Southern Economic Journal*, Vol. 44, No. 3 (January 1978), pp. 594-605.
- "Industrial Organization and the Market for Corporate Funds" and "Risk and Financial Structure: Determinants and Relation to Profitability," in Richard E. Caves et al., *Studies in Canadian Industrial Organization* (Ottawa: Canadian Royal Commission on Corporate Concentration, 1977), pp. 204-238.
- "Public Policy Toward Competition in Banking," *New England Economic Review*, Federal Reserve Bank of Boston, July/August 1977, pp. 44-50.
- "Changes in Bank Lending Practices, 1976," *Federal Reserve Bulletin*, Vol. 63, No. 4 (April 1977), pp. 341-46.

### **Consulting/Contract Research Reports**

*Financing and Leveraging Public/Private Partnerships* (with Stephen Martin), a report on financial engineering for technology and innovation policy prepared for the Working Group on Technology and Innovation Policy, Division of Science and Technology, OECD, January 30, 1998.

*Economic Assessment of the NIST Thermocouple Calibration Program*, NIST Planning Report # 97-1, prepared for the Program Office, Strategic Planning and Economic Analysis Group, National Institute of Standards and Technology (NIST), U.S. Department of Commerce (with Michael L. Marx and Albert N. Link). NIST, U.S. Department of Commerce, Technology Administration, July 1997, and TASC, Inc., Arlington, Virginia. (The Report is available at <http://www.nist.gov/director/planning/upload/report97-1.pdf> )

*Economic Assessment of the NIST Alternative Refrigerants Research Program*, NIST Planning Report # 98-1, prepared for the Program Office, Strategic Planning and Economic Analysis Group, National Institute of Standards and Technology (NIST), U.S. Department of Commerce (with Matthew T. Shedlick and Albert N. Link). NIST, U.S. Department of Commerce, Technology Administration, January 1998, and TASC, Inc., Arlington, Virginia. (The Report is available at <http://www.nist.gov/director/planning/upload/report98-1.pdf> )

*The Economics of a Technology-Based Service Sector*, NIST Planning Report # 98-2, A Planning Report for the National Institute of Standards and Technology, Program Office, Strategic Planning and Economic Analysis Group, (with David P. Leech, Albert N. Link, and Leon S. Reed). NIST, U.S. Department of Commerce, Technology Administration, January 1998, and TASC, Inc., Arlington, Virginia. (The Report is available <http://www.nist.gov/director/planning/upload/report98-2.pdf> )

*Economic Assessment of the NIST Ceramic Phase Diagram Program*, NIST Planning Report # 98-3, prepared for the Program Office, Strategic Planning and Economic Analysis Group, National Institute of Standards and Technology (NIST), U.S. Department of Commerce (with Michael L. Marx and Albert N. Link). NIST, U.S. Department of Commerce, Technology Administration, February 1998, and TASC, Inc., Arlington, Virginia. (The Report is available at <http://www.nist.gov/director/planning/upload/report98-3.pdf> )

*Overcoming Market Failure: A Case Study of the ATP Focused Program on Technologies for the Integration of Manufacturing Applications (TIMA)*, (with Albert N. Link), a report to the Advanced Technology Program, National Institute of Standards and Technology, October 1998.

*Development of an Industrial Database on Licensing Patterns*, (with Albert N. Link), Final Report submitted to the National Science Foundation, Division of Science Resources Studies, Research and Development Statistics Program, SGER Project 9615976, July 1999.

*Economic Impact Assessment: NIST – EEEL Laser and Fiberoptic Power and Energy Calibration Services*, NIST Planning Report #00-3, prepared for the Program Office, Strategic Planning and Economic Analysis Group, National Institute of Standards and Technology (NIST), U.S. Department of Commerce (with Michael L. Marx and Stephen M. Fry). NIST, U.S. Department of Commerce, Technology Administration, August

2000, and TASC, Inc., Arlington, Virginia. (The Report is available at <http://www.nist.gov/director/planning/upload/report00-3.pdf> )

*Economic Evaluation of the Baldrige National Quality Program*, NIST Planning Report #01-3, prepared for the Program Office, Strategic Planning and Economic Analysis Group, National Institute of Standards and Technology (NIST), U.S. Department of Commerce (with Albert N. Link). NIST, U.S. Department of Commerce, Technology Administration, October 2001. (The Report is available at <http://www.nist.gov/director/planning/upload/report01-3.pdf> )

*Universities as Research Partners*, (with Bronwyn H. Hall and Albert N. Link), NIST GCR 02-829, Economic Assessment Office, Advanced Technology Program, National Institute of Standards and Technology, June 2002. (The Report is available at <http://www.atp.nist.gov/eao/gcr02-829/front.htm> or <http://www.atp.nist.gov/eao/gcr02-829/gcr02-829.pdf> )

“The Role of Public Research Institutions in a National Innovation System: An Economic Perspective,” (with Albert N. Link), Final Report prepared for The World Bank, August 2004.

*Evaluation of ATP’s Intramural Research Awards Program*, (with Albert N. Link), National Institute of Standards and Technology Report #04-866 (NIST GCR 04-866), Advanced Technology Program, National Institute of Standards and Technology, Gaithersburg, Maryland, December 2004. (The Report is available at <http://www.atp.nist.gov/eao/gcr04-866/gcr04-866.pdf> )

“Cost-Benefit Analysis for Global Public-Private Partnerships: Determining the Desirability of Intergovernmental Organizations Entering into Public-Private Partnerships,” a paper prepared for the United Nations Development Programme’s Office of Development Studies, February 10, 2006.

*The Theory and Practice of Public-Sector R&D Economic Impact Analysis*, NIST Planning Report #11-1, January 2012, National Institute of Standards and Technology (NIST), U.S. Department of Commerce (with Albert N. Link). (The Report is available at <http://www.nist.gov/director/planning/upload/report11-1.pdf>.)

*Economic Evaluation of the Baldrige Performance Excellence Program*, NIST Planning Report #11-2, December 16, 2011, National Institute of Standards and Technology (NIST), U.S. Department of Commerce (with Albert N. Link). (The Report is available at <http://www.nist.gov/director/planning/upload/report11-2.pdf>.)

*The Economic Impacts of Documentary Standards: A Case Study of the Flat Panel Display Measurement Standard (FPDM)*, NIST Planning Report #12-1, December 2011, National Institute of Standards and Technology (NIST), U.S. Department of Commerce (with David P. Leech). (The Report is available at <http://www.nist.gov/director/planning/upload/report12-1.pdf>)

*The Economic Impacts of Early Stage Consensus Standards Development: A Case Study of Nanotechnology Documentary Standards*, (2014), Report to the National Institute of Standards and Technology (NIST), U.S. Department of Commerce (with David P. Leech).