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Curriculum Vitae
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Date of Birth: March 1, 1945

Education: B.A., Physics, Wellesley College, 1966
Ph.D., Economics, Stanford University, 1988
[M.A., Oxford University, 1996]

CURRENT POSITIONS

2016-: Chercheur Associé, Centre de l'économie de l'innovation, College de France, Paris.
2015-: Visiting Professor, Max Planck Institute, Munich.
2012-: Visiting Fellow, National Institute of Social and Economic Research, London.
1995-: International Research Associate, Institute for Fiscal Studies, London.
1988-: from Faculty Research Fellow to Research Associate, National Bureau of Economic Research, Member, Programs on Productivity and Technical Change; Industrial Organization
1987-: from Assistant Professor to Full Professor Emerita of Economics, University of California at Berkeley.

PAST POSITIONS:

2005 to 2015: Professor of Technology and the Economy, University of Maastricht, Netherlands and Professorial Research Fellow, UNU-MERIT.
1977 to 2012: Founder, Owner, and Partner, TSP International, a computer software firm that maintained, distributed, and did continuing development on the TSP econometrics package.
1996 to 2001: Temporary Professor of Economics, Oxford University, and Professorial Fellow, Nuffield College.
[**1963-1983:** computer programmer at Berkeley Lawrence Laboratory; Lyman Laboratory and Department of Economics, Harvard University].

PUBLICATIONS

"Patents, Innovation, and Development." (2022). SOAS Penrose Lectures, *International Review of Applied Economics* 36: 1-26.
[Earlier version: NBER Working Paper No. 27203].

"Tax Policy and Innovation." (2021). In A. Goolsbee and B. F. Jones (eds.), *Innovation and Public Policy*. NBER Conference Volume, University of Chicago Press.
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[Earlier versions: “IP use in middle income countries: The case of Chile,” NBER Working Paper No. 24348. WIPO Economic Research Paper No. 43.]

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[NBER Working Paper No. 22473. Revised April 2017.]

“Measuring Science, Technology, and Innovation: A Review” (2018), with Adam Jaffe. *Annals of Science and Technology Policy* 2 (1): 1-74. doi: **10.1561/110.00000005**.
[Report for the Panel on Developing Science, Technology, and Innovation Measures for the Future, National Academy of Science (May 2012).]

“The Market Value of R&D in Emerging Economies: Evidence from India” (2017), with Sunil Kanwar. *B. E. Journal of Economic Analysis and Policy* 17(1), doi: **10.1515/bejeap-2016-0103**.
[NBER Working Paper No. 21196 (May).]

“Financing constraints, R&D investments and innovative performances: new empirical evidence at the firm level for Europe” (2016), with Pietro Moncada-Paterno-Castello, Sandro Montresor, and Antonio Vezzani, *Economics of Innovation and New Technology* 25 (3): 183-196.

“Patents as Quality Signals? The Implications for Financing Constraints on R&D” (2017), with Dirk Czarnitzki (KU Leuven) and Hanna Hottenrott (DICE, Heine Universitaet, Dusseldorf). *Economics of Innovation and New Technology* 25 (3): 197-217. doi: **10.1080/10438599.2015.1076200**.
[NBER Working Paper No. 19947; UNU-MERIT wp2014-013; NIESR Discussion Paper No. 430.]

“Appropriability mechanisms, innovation and productivity: Evidence from the UK,” with Vania Sena, University of Essex (2017). **Economics of Innovation and New Technology** 26 (1-2): 42-62.

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[UNU-MERIT Working Paper No. 2013-021]

“The importance (or not) of patents to UK firms,” with Christian Helmers, Mark Rogers, and Vania Sena (2013). **Oxford Economic Papers** 65 (3): 603-629. **doi:10.1093/oep/gpt012**.

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[Paper presented at the Workshop on Drivers and Impacts of Corporate R&D in SMEs, Seville, September 18, 2008; NBER Working Paper No. 14594; Banca d’Italia Temi di discussione (Economic working papers) 718]

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[Universite Paris I, CREST-ENSAE, and UC Berkeley, June 2005. Revised version of paper presented at the Conference in Memory of Keith Pavitt, SPRU, University of Sussex, UK, November 2003. NBER Working Paper No. 11739; UNU-MERIT Working Paper No. 2006-042]

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[Paper presented at the Zvi Griliches Memorial Conference, Paris, August 2003 and the Tor Jakob Klette Memorial Conference, Oslo, Norway 2004, IFS Working Paper No. 06/23, NBER Working Paper No. 13473 (September 2007)].

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[NBER, UC Berkeley, Oxford University, Brandeis University, and Tel Aviv University. Université Paris I: Cahiers de l'Innovation 1998 (April), revised May 2000 and June 2001. NBER Working Paper No. 7741 (June 2000). University of California Dept of Economics Working paper No. E01-304 (August 2001)]

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[Nuffield College, Oxford, UC Berkeley, INSEE-CREST, and NBER: September 1999. Revised version presented at the World Congress of the Econometric Society, Seattle, August 2000 and the Conference in Honor of T. Rothenberg, University of California at Berkeley, August 2001.]

“Exploring the Patent Explosion” (2005), **Journal of Technology Transfer** 30: 35-48.

[invited lecture at the ZEW Workshop on Empirical Economics of Innovation and Patenting, Mannheim, Germany, March 14/15, 2003. NBER Working Paper No. 10605 (July 2004). University of Cambridge: Cambridge Business Research Working Paper No. 292 (September 2004).]

“University-Industry Research Partnerships in the United States” (2004), in Contzen, Jean-Pierre, David Gibson, and Manuel V. Heitor (eds.), **Rethinking Science Systems and Innovation Policies**, Proceedings of the 6th International Conference on Technology Policy and Innovation, Connecticut: Greenwood Press.

[Paper presented in Kansai, Japan, August 2002, European University Institute ECO-WP Number 2004/14.]

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Graham, Dietmar Harhoff, and David C. Mowery. **Innovation Policy and the Economy**, Volume 4: 115-143.

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[NBER Working Paper No. W9730. UC Berkeley Department of Economics Working Paper No. E03-330.]

“Universities as Research Partners” (2003), with Albert N. Link and John T. Scott. **Review of Economics and Statistics** 85: 485-491.

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[Paper prepared for presentation at the ASSA Meetings, Boston, Mass., January 7-9, 2000. UC Berkeley, Oxford University, University of North Carolina, and Dartmouth College. NBER Working Paper No. 7643 (March 2000).]

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Mowery and J. Fagerberg (eds.), **Innovation, Technology and Economic Change**, Cheltenham, UK: Edward Elgar (2014).

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SHORTER PAPERS AND COMMENTS

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"Do patent thickets have real effects," with Georg von Graevenitz and Christian Helmers (2013), **CCP Research Bulletin** 25: 11-13.

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"Patents" (2008), entry for L. Blume and S. Durlauf (eds.), **New Palgrave Dictionary of Economics**, 2nd edition. Palgrave Macmillan.

"Comment on Fraumeni and Okubo: R&D in the National Income and Product Accounts" (2005), in Corrado, Haltiwanger, and Sichel (eds.), **Measuring Capital in the New Economy**, Chicago: CRIW conference volume, University of Chicago Press.

"The Global Nature of IP Protection: Discussion" (2006), in **Intellectual Property and Innovation in the Knowledge-Based Economy**, Toronto: Industry Canada, digitally published at <http://strategis.ic.gc.ca/epic/internet/inippd-dppi.nsf/en/ip01236e.html> [Presentation to the Industry Canada Conference on Intellectual Property, Toronto, Canada, May 23-24, 2001].

"Models of Research Funding: Discussion" (2003), in A. Guena, A. Salter, and W. E. Steinmueller (eds.), **Science and Innovation: Rethinking the Rationales for Funding and Governance**. Edward Elgar.

"University-Industry Research Partnerships and Intellectual Property – A View from the United States" (2001), in Granstrand, Ove (ed.), **IPR Aspects of Internet Collaborations**, European Commission (DG Research) Workshop Report (March).

"Investment and Taxation in Germany - Evidence from Firm-Level Panel Data by Harhoff and Ramb: Discussion" (2001), in Herrman, Heinz, and Rolf Strauch (eds.), **Investing Today for the World of Tomorrow**, Springer Verlag.

"Tax Policy and Investment Incentives, by Kevin Hassett and Glenn Hubbard: Comment" (1996), in Auerbach, Alan (ed.), **Fiscal Policy: Lessons from Economic Research**, Cambridge, Mass.: MIT Press.

"Valuing Intangible Assets" (1997). Nuffield College, Oxford University: photocopied.

"Incremental Tax Credits for R&D: The United States Experience" (1005), presentation to the Save British Science meeting on measures to encourage innovation in industry, Milton Hill, Abingdon, UK, June 3.

“Fiscal Policy Towards R&D in the United States: Recent Experience” (1995), presentation to the OECD meeting on Fiscal Measures to Promote R&D, Paris, France, January 19.

“On the Sensitivity of R&D to Delicate Tax Changes: The Behavior of U.S. Multinationals in the 1980s, by James R. Hines, Jr.: Comment” (1995), in Slemrod, Giovannini, and Hubbard (eds.), **International Aspects of Taxation**, NBER Conference Volume, University of Chicago Press, Chicago, Ill.

“Empirical Analysis of the Size Distribution of Farms: Discussion” (1987), **American Journal of Agricultural Economics**, May.

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“Innovation and Industrial Dynamics” (2019), with Alex Coad, Nicola Grassano, Pietro Moncada-Paterno-Castello, and Antonio Vezzani, **Structural Change and Economic Dynamics** 50 (Sept): 126-131. *doi: 10.1016/j.strueco.2019.06.008*.

“Financing constraints, R&D investments and innovative performances: new empirical evidence at the firm level for Europe” (2016), with Pietro Moncada-Paterno-Castello, Sandro Montresor, and Antonio Vezzani, **Economics of Innovation and New Technology** 25 (3).

Intellectual Property for Economic Development: Issues and Policy Implications, (2013), with Sanghoon Ahn and Keun Lee, Korean Development Institute. Cheltenham: Edward Elgar.

“Empirical studies of employment and performance of scientists and engineers” (July 2010), with Andries de Grip and Wendy Smits, **Economics of Innovation and New Technology** 19 (5).

Handbook of the Economics of Innovation (2010), with Nathan Rosenberg, Elsevier.

“Property and the Pursuit of Knowledge: IPR issues affecting scientific research” (2006), with Paul A. David, **Research Policy** 35 (6).

“Empirical studies of innovation in the knowledge driven economy: An introduction” (2006), with Jacques Mairesse. **Economics of Innovation and New Technology** 15(4/5). [NBER Working Paper No. w12320; UNU-MERIT Working Paper No. 2006-028]

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“Technology Policy: The Assessment” (2002), **Oxford Review of Economic Policy** 18 (1).

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“The Effects of Technology and Innovation on Firm Performance, Employment, and Wages: Introduction” (1998), with Francis Kramarz. Introduction to a special volume of **Economics of Innovation and New Technology**, Volume 5 (2/4).

UNPUBLISHED WORKING PAPERS

“Assessing the Effectiveness of the Eco-Patent Commons: A Post-mortem Analysis (2018), with Jorge Contreras and Christian Helmers. Waterloo, Canada: CIGI Working Paper No. 161. Max Planck Institute for Innovation and Competition Research Paper No. 19-02. NBER Working Paper No. 25271.

“IP use in middle income countries: The case of Chile (2018), with Carsten Fink and Christian Helmers. WIPO, Geneva. NBER Working Paper No. 24348. WIPO Economic Research Paper No. 43.

“Smart Specialisation: From academic idea to political instrument, the surprising career of a concept and the difficulties involved in its implementation,” with Dominique Foray and Paul A. David. EPFL MTEI Working Paper 2011-001.

“The market value of patents and R&D: Evidence from European firms,” with Grid Thoma and Salvatore Torrisi, UC Berkeley and University of Maastricht, University of Camerino, University of Bologna, and CESPRI, October 2006, NBER Working Paper No. 13426 (September 2007), revised 2010.

“The Use and Value of Patent Rights,” in UK IPO (eds.), *The Economic Value of Intellectual Property: An Agenda for Policy-Relevant Research*, Report of a forum hosted by David Lammy, Minister of State for Intellectual Property, June 2009.

“Do R&D Tax Credits Increase Innovation? Panel Evidence from US Firms,” with Nicholas Bloom (Stanford University), Chiara Criscuolo (LSE), and John Van Reenen (LSE),” first draft, April 2008, for presentation at the International Conference on Knowledge for Growth, Toulouse, July 7-9, 2008.

“Which firms participate in open source software development? A study using data from Debian,” with Rishab Ghosh and Kirsten Haaland, UNU-MERIT, The Netherlands, May 2008, presented at the DIME- DRUID Fundamental on Open and Proprietary Innovation Regimes, Copenhagen, June 2008.

“An Empirical Analysis of Patent Litigation in the Semiconductor Industry,” with Rosemarie Ham Ziedonis, paper presented at the ASSA meetings, Chicago, IL, 4-7 January 2007, and the EPIP Annual Conference, Lund, Sweden, September 2008.

“Innovation in Non-bank Payment Systems,” (2007). [Paper presented at the Federal Reserve Bank of Kansas City 2007 Payments Conference, Santa Fe, New Mexico, May 2-4, 2007].

“Comparing the Market Valuation of Innovative Assets in U.S. and German Firms,” with Dirk Czarnitzki, paper presented at the International Industrial Organization Conference, Chicago, April 23-24, 2004 and the Applied Econometrics Association Conference, Singapore, July 2004. *under revision*

“Incentives for Knowledge Production with Many Producers,” paper presented at the European Commission/NSF/OECD Conference on Networks of Knowledge: Research and Policy for the Knowledge-Based Economy, Brussels, June 7/8, 2004.

“A Note on Measurement Error and Proxy Variables,” May 2004.

"Business Method Patents, Innovation, and Policy," paper prepared for the Financial Markets Conference of the Atlanta Federal Reserve Bank, Sea Island, Georgia, April 3-5, 2003. NBER Working Paper No. W 9717. UC Berkeley Department of Economics Working Paper No. E03-331 and Competition Policy Center Working Paper No. CPC03-039.

"Universities as Partners in ATP-Funded Research Projects," with Albert N. Link and John T. Scott. Report to the Advanced Technology Program. UC Berkeley, Oxford University, University of North Carolina, and Dartmouth College. (Final version 2002; Preliminary version April 1998).

"Intellectual Property Strategy in the Global Cosmetics Industry," with Dietmar Harhoff. 2002. Ludwig-Maximilians-Universität München and UC Berkeley.

"Redefining the Takeover Target: An Empirical Investigation Using Duration Models," with Constance Phelizon. UC Berkeley and Université Paris I: Photocopied.

"Mergers and R&D Revisited." Paper prepared for an NBER Conference on Mergers and Productivity, Key Largo, Florida, January 1997; revised for a Eurofin Conference on Restructuring in Science-Based Industries, Milano, Italy, May 1999 and the UC Berkeley/NSF Symposium on Quasi-experimental Methods in Economics, August 1999.

"Differences in Reported R&D Data on the NSF/Census RD-1 Form and the SEC 10-K Form: A Micro-Data Investigation," with William F. Long. NBER, UC Berkeley, Oxford University, and BPRA. Photocopied (October 1997, revised October 1999).

"Market Value, Market Share, and Innovation," with Katrin Vopel. NBER, the University of California at Berkeley, and the University of Mannheim. Photocopied (May 1996, revised May 1997).

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"Firm-Level Investment with Liquidity Constraints: What Can the Euler Equations Tell Us?" NBER and the University of California at Berkeley (April 1991).

"Investment and Research and Development at the Firm Level: Does the Source of Financing Matter?" Paper presented at the International Conference on Quantitative Economics and Its Applications to Chinese Economic Development and Reform in the 1990s, Beijing, People's Republic of China, June 24-28, 1990 (published in Chinese), and at the North American Winter Meetings of the Econometric Society, Washington D.C., December 28-30, 1990. IBER Working Paper No. 92-194 (May 1992). NBER Working Paper No. 4096 (June 1992).

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Assessing the Effectiveness of the Eco-Patent Commons: A post-mortem analysis (2017), with Jorge Contreras and Christian Helmers. Waterloo, Canada: Center for International Governance of Innovation Report No. 161.

The use of intellectual property in Chile, with Maria Jose Abud, Carsten Fink, and Christian Helmers. INAPI-WIPO Report, Economic Research Working Paper No. 11 (July 2013).

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Government Policy for Innovation in Latin America, a Report to the World Bank, May 2005.

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Effectiveness of Research and Experimentation Tax Credits: Critical Literature Review and Research Design, Report written for the Office of Technology Assessment, U.S. Congress, Washington, DC, June 1995.

DATA, DATA DOCUMENTATION, AND COMPUTATIONAL PUBLICATIONS

“Methods and software for the harmonization and integration of datasets: A test based on IP-related data and accounting databases with a large panel of companies at the worldwide level,” 2010, with G. Thoma, S. Torrisi, A. Gambardella, D. Guellec, and D. Harhoff. Paris, France: NBER Working Paper No. 15851. OECD/DSTI Working Paper DSTI/DOC(2010)99, available at www.oecd.org/sti/working-papers [paper presented at the EPO/OECD Conference on Patent Statistics for Policy Decision Making, Vienna, Austria, 3-4 September, 2008.]

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TSP Handbook to accompany Pindyck and Rubinfeld, *Econometric Models and Economic Forecasts*, Irwin-McGraw-Hill, 1997 (with Sergio L. Schmukler).

"The Manufacturing Sector Master File: 1959-1987." NBER Working Paper No. 3366 (1990).

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"The R&D Master File: Documentation," with C. Cummins, E. S. Laderman, and J. Mundy. August 1982; revised 1983, 1984, 1985, 1988. NBER Technical Working Paper No. 72 (December 1988).

"Software for Computation of Tobit Model Estimates." **Journal of Econometrics** 24 (1984): 215-22.

"Historical R&D Panel: 1957-1977 Public Use Correlation Matrices." Computer tape documentation, September 1984.

"Census R&D Data Match Project: A Progress Report," with Zvi Griliches. Paper presented at the Workshop on the Development and Use of Longitudinal Establishment Data, Bureau of the Census, Washington, D.C., January 14-15, 1982.

"A General Framework for the Time Series-Cross Section Estimation." Paper presented at the INSEE-CNRS Conference on the Economics of Panel Data, Paris, France, August 1977. **Annales de l'INSEE** 30-31, Avril-Sept.1978.

"The Canadian Industrial Organization Data Base." Cambridge, Mass.: Harvard Institute of Economic Research Technical Paper No. 15 (October 1977), (with Richard E. Caves).

FELLOWSHIPS, HONORS, AND VISITING POSITIONS

TIM Distinguished Scholar, Academy of Management, 2021.

Special award from CONCORDi 2019, Seville, Spain, for scholarship and contributions to past and current conferences.

National Associate of the National Research Council, 2016-present.

Università Luigi Bocconi, Milano, Italy, Spring 2012.

Center for Advanced Studies, Norwegian Academy of Science, Oslo, Norway, Spring 2008.

Visiting Professor, Hitotsubashi University, Tokyo, Japan, Winter 2008.

Senior Visiting Fellow, Institute of Advanced Studies, Università di Bologna, Italy, Spring 2007.

Visiting Researcher, Ente "Luigi Einaudi", Bank of Italy, Rome, Spring 2006.

Visiting Professor, Ludwig-Maximilians University of Munich, Germany, December 2005.

Visiting Professor, Katholieke Universitat Leuven, Belgium, September 2005.

Fulbright Distinguished Visiting Professor, EUI, Florence, Winter 2004.

Deloitte Distinguished Visitor, Judge Institute of Management, Cambridge, UK, 2004.

Visiting Fellow, Sidney Sussex College, Cambridge, UK, 2004.

Visiting Professor of Economics, Scuola Sant'anna Superiore, Pisa, June 2003.

TIM Visiting Professor of Economics, Scuola Sant'anna Superiore, Pisa, June 2002.

Omnitel Professor of Economics, Scuola Sant'anna Superiore, Pisa, June 2001.

Visiting Research Professor, Wissenschaftszentrum Berlin, May 2000.

Resident, Bellagio Study and Conference Center of the Rockefeller Foundation, April 1998.
 Temporary Professor of Economics and Fellow of Nuffield College, Oxford University, 1996-2001.
 Visiting Professor, New Economics School, Moscow, March-April 1996.
 Economics Visitor, Nuffield College, Oxford University, Spring Term 1995; May 1996.
 Visiting Researcher, CREST/INSEE, Paris, April-June 1987; January-July 1991; January-March 1995; June 1996.
 Invited lecturer on Panel Data Econometrics, Complutense University, Madrid, March 1993.
 Invited visitor, MERIT, University of Limburg, Maastricht, The Netherlands, October 1992.
 Hoover Institution National Fellow, 1992-1993.
 Alfred P. Sloan Dissertation Fellowship, 1985-1986.
 Full Member, Sigma Xi Society, 1966-present.
 Who's Who in Economics, 1995-present.
 Who's Who, 1997-present.

PROFESSIONAL SERVICE

Steering committee, Innovation Information Initiative (I³), MIT and NBER, 2019-
 International Advisory Panel, Te Punaha Matatini Centre of Research Excellence, New Zealand, 2014-
 Member, Conference on Income and Wealth, 1988-
 Series Editor, *Practical Econometrics*, Oxford University Press.
 Scientific Committee (2021-), Associate Editor (2008-2021), *Industrial and Corporate Change*
 Science Board (2021-), Advisory Editor (2006-2012), *Research Policy*
 Editorial Advisory Board (2021-), *Journal of Wine Economics*
 Associate Editor (1994-), Member, Editorial Board (1989-1994), *Economics of Innovation and New Technology*

Panel member, European Research Council Advanced Grant evaluation panel, 2014/2016/2018
 International Advisory Board, Solvay School of Economics and Management, Univ Libre de Bruxelles, 2014-2017
 Advisory Board member, National Institute of Social and Economic Research, London UK, 2014-2016
 Panel member, Science of Research, Innovation and Enterprise programme, Singapore National Science Foundation, 2014-2015
 Scientific Advisory Board, DIW (German Institute of Economic Research), Berlin, 2010-2015
 Economic and Scientific Advisory Board, European Patent Office, 2012-2015
 Panel Member, European Research Council Consolidator Grant evaluation panel, 2012-2013
 Scientific Advisory Committee, SIMPATIC research network, EU 7th Framework program, 2012-2014
 Committee to Assess the Value of Research in Advancing National Goals, National Research Council, US National Academies, 2012-2014
 Board of Management, International Schumpeter Society, 2010-2014
 Scientific Council, Solvay School of Economics and Management, Univ Libre de Bruxelles, 2009-2014
 Consultant, WIPO, Geneva, 2009; 2011-2013
 Advisory Board member, Innovation Research Centre, Imperial College, University of London, and University of Cambridge, 2009-2013
 International Scientific Board, SEEK, ZEW, Mannheim, Germany, 2010-2013
 Founding board member, European Policy for Intellectual Property Association, 2005-2012
 High Level Panel on Innovation Indicators, DG Research, European Commission, Brussels, 2010-2011
 Research Advisory Council, Deutsche Bundesbank, 2005-2011

STEP Board Committee on Comparative Innovation Policy, 2005-2011
 Co-Chair, STEP/COSEPUP Committee on Measuring the Impacts of Federal Investments in R&D, National Research Council, 2010-2011
 Review panel member, ESRC, UK, 2008
 Expert Panel on Business Innovation, Council of Canadian Academies, 2007-2009
 Expert Group, "Knowledge for Growth", European Commission, 2007-2009
 Advisory Board, BCLT Kauffman Project on Patent Reform and Entrepreneurship, 2006-2010.
 Reviewer, various National Research Council volumes
 Federal Economic Statistics Advisory Committee (FESAC), Washington, DC, 2005-2011
 International Advisory Board, New Economics School, Moscow, 1997-2007
 Science, Technology, and Economic Policy Board, National Research Council, 1999-2005
 STEP Board Committee on Measuring and Sustaining the New Economy, 2003-2006
 Chair, STEP Board Committee on R&D Statistics, 2002-2004
 NRC CNSTAT Committee on R&D Statistics, 2002-2004
 STEP Board Committee on Intellectual Property, 2000-2004
 Board of CSWEP, American Economic Association 1998-2001.
 Advisory Board, HeroArts, Emeryville, Calif., a privately held crafts company
 Board member, California Census Research Data Center (CCRDC) at Berkeley
 Nominating Committee of the Royal Economic Society, UK, 1997-1999.
 Census Advisory Committee of the American Economic Association, 1990-1995.
 Nominating Committee of the American Economic Association, 1994-1996.
 Executive Committee, CAED (Comparative Analysis of Enterprise Data), 2005-2007.
 Scientific Committee, LEM, Scuola Sant'anna Superiore, Pisa, 2003-2005.
 Committee scientifique, Les Enjeux Economiques de l'Innovation, CNRS, Paris, France, 1997-2002.
 NRC Committee to Assess the Portfolio of the Science Resources Studies Division of NSF, 1998-1999.
 Scientific Committee, European Network on Financing and Innovation, 1997-2000.
 Steering Group on Industrial Research and Innovation Indicators, National Research Council, 1997.
 NRC Steering Committee for a Workshop on Industrial Science and Technology Indicators, 1995-1996.
 Steering Committee, European Productivity and Innovation Network, 1994-1999.
 Advisory Committee to the Panel Study of Entrepreneurial Dynamics, Institute for Social Research, University of Michigan, 1993-1996.
 Advisory Committee of Economists to the Inter-University Consortium for Political and Social Research, 1990-1991.
 Data Base Review Committee of the Small Business Administration, 1984-1985.

 Testimony before the FTC Hearings on the Evolving IP Marketplace, Haas School of Business, UC Berkeley, May 4, 2009.
 Testimony before the FTC/DOJ (Antitrust) hearings on Intellectual Property, Competition, and Innovation, Haas School of Business, UC Berkeley, February 2002.
 Testimony before the House Subcommittee on Science, Space, and Technology of the Committee on Technology, etc., Washington, D.C., July 1989.

 Associate Editor, *Journal of Economic Behavior and Organization*, 2001-2007
 Member, Advisory Board, *International Finance*, 1997-2005

 Referee for *American Economic Review*, *Berkeley Economics Journals*, *BMC Medicine*, *Canadian Journal of Agricultural Economics*, *Economic Inquiry*, *Economic Journal*, *Economics of Innovation and New Technology*, *European Economic Review*, *Financial Management*, *Industrial and Corporate Change*, *International Journal of Electronic Business*, *Journal of Business*, *Journal of Development*

Economics, Journal of Econometrics, Journal of Economic History, Journal of Economics and Management Strategy, Journal of the European Economic Association, Journal of Financial Economics, Journal of Industrial Economics, Journal of Labor Economics, Journal of Law and Economics, Journal of Law, Economics, and Organization, Journal of Policy Analysis and Management, Journal of Political Economy, Journal of Policy Analysis and Management, Journal of Productivity Analysis, Journal of Public Economics, Management and Development Economics, Management Science, MIT Press, National Tax Journal, Oxford Bulletin of Economics and Statistics, Oxford Economic Papers, Oxford University Press, Quarterly Journal of Economics, Princeton University Press, Rand Journal of Economics, Research Policy, Review of Economics and Statistics, Review of Economic Studies, Review of Finance, Science and Public Policy, Scottish Journal of Political Economy, Structural Change and Economic Dynamics, University of Chicago Press.

CONFERENCE ORGANIZATION

Scientific Committee, Concordi 2021 Conference on Corporate R&D, ITPS, European Commission, Seville, Spain, November 2019
 First Technical Working Group Meeting, I3, Cambridge, MA, December 2019.
 Scientific Committee, Concordi 2019 Conference on Corporate R&D, ITPS, European Commission, Seville, Spain, September 2019
 Scientific Committee, Patent Statistics for Decision Makers Conference, Alicante, Spain, October 2018
 Scientific Committee and Rapporteur, Concordi 2018 Conference on Corporate R&D, ITPS, European Commission, Seville, Spain, September 2018
 Scientific Committee and Rapporteur, Concordi 2017 Conference on Corporate R&D, ITPS, European Commission, Seville, Spain, September 2017
 Scientific Committee, Patent Statistics for Decision Makers Conference, Tokyo, November 2015
 Scientific Committee, Patent Statistics for Decision Makers Conference, Rio de Janeiro, November 2013
 Scientific Committee, 7th Conference on Micro Evidence on Innovation and Development (MEIDE), Santiago de Chile, November 6-8, 2013
 Scientific Committee and Rapporteur, Concord 2013 Conference on Corporate R&D, ITPS, European Commission, Seville, Spain, September 2013
 European Policy for Intellectual Property (EPIP) Annual Conference, Leuven, Belgium, September 2012
 Rapporteur, Concord 2011 Conference on Corporate R&D, ITPS, European Commission, Seville, Spain, October 2011
 Scientific Committee, Patent Statistics for Decision Makers Conference, USPTO, Washington, DC, 16-17 November 2011
 Scientific Committee, 4th ZEW Conference on Economics of Innovation and Patenting & Finale Conference COST Network STRIKE, Mannheim, Germany, May 2011.
 European Policy for Intellectual Property (EPIP) Annual Conference, Maastricht, Netherlands, September 2010
 Scientific Committee, Knowledge for Growth/Pour une croissance intensive en connaissance, Toulouse, France, 7-9 July 2008
 Scientific Committee, AEA Conference on Economic Insights into the Patent System, RIETI, Tokyo, Japan, December 2008
 NIESR/ROA Conference on the Labor Market for Scientists and Engineers, Maastricht, Netherlands, May 2008
 European Policy for Intellectual Property (EPIP) Workshop, Pisa, Italy, April 2004
 Conference on Intellectual Property Economics, History, and Policy, Berkeley, California, September 2001
 Coordinator with J. Mairesse, CREST-NBER Franco-American Seminar, shared organization of the

Conference on Technological policy and innovation: Economic and historical perspectives,
Paris, November 2000
R&D and Technology Conference, Urbino, Italy, 1998
Scientific Committee, The Economics and Econometrics of Innovation, 10th Intl ADRES Conference,
Strasbourg, France, June 1996

RESEARCH GRANTS

National Science Foundation, Grant #SES 8908521, 1989-1991.
National Science Foundation, Grant #SES 9022686, 1991-1993.
National Science Foundation, Grant #INT 9217489, 1993-1996 (with Zvi Griliches, intl. travel only).
National Science Foundation, Grant #SBR 9415252, 1994-1997 (with William F. Long).
National Science Foundation, Grant #SBR 9320973, 1994-1998 (with Adam Jaffe and Manuel
Trajtenberg).
National Science Foundation, Grant #SBR 9510269, 1995-1996 (doctoral dissertation grant to
Adela Luque).
National Science Foundation, Grant #INT 97....., 1998-2001 (with Zvi Griliches, intl. travel only)
National Institute of Science and Technology, ATP Program, 1997-1999 (with Albert Link and John
Scott).
National Science Foundation, Grant #INT 00....., 2000-2004 (with Paul David, intl. Travel only)
STEP Board, National Academies of Science and Engineering, 2000-2002 (with David Mowery and
Dietmar Harhoff).
Ewing Marion Kauffman Foundation, 2005-2006, graduate student support.
National Science Foundation, Grant #SES-0527657 "Harnessing Patent Data for Social Science
Research," 2005-2007 (with Iain Cockburn, Boston U., Walter Powell, Stanford U., and
Manuel Trajtenberg, Tel Aviv U.).
Ewing Marion Kauffman Foundation, 2008, patent data project.

TEACHING EXPERIENCE

Econometrics
Applied econometrics
Applied industrial organization
Economics of innovation
all at both the graduate and undergraduate levels

GRADUATE STUDENTS SUPERVISED

First reader (UC Berkeley Economics):

Michael St. John, 1989
Daniel Ryan, 1992
Sharman Haley, 1993
David Austin, 1993
My Caohuy, May 1996
Haru Connolly, August 1997
Rika Mortimer, April 1998
Suzanne Majewski, September 1998
Adela Luque, May 1999
Alan Marco, August 2000
Megan Macgarvie, August 2003
Jesse Giummo, August 2003
Beethika Khan, May 2004
Galen Hancock, August 2013

Second or third reader (UC Berkeley):

Kate Rockett, Economics, 1988
 Aslan Cohen, Economics, 1989
 Armando Pinheiro, Economics, 1989
 Hua Cheng Chang, Engineering and Electrical Computing Systems, 1989
 David Parsley, Economics, 1989
 Melanie Mauldin, Economics, 1990
 Richard Howarth, Energy & Resource Economics, 1990
 Achia Rosen, Economics, 1990
 Barney Cohen, Economics, 1990
 Freddie Balfour, Economics, 1991
 James Angel, Haas School of Business, 1991
 Lenny Sofer, Haas School of Business, 1991
 Robert Uhlaner, Economics, 1992
 Seung-Hee Choi, Economics, July 1994
 Brian Silverman, Haas School of Business, June 1995
 Joanne Oxley, Haas School of Business, July 1995
 Peter Klein, Economics, September 1995
 Thomas Starrs, Energy & Resource Economics, December 1996
 Renato da Fonseca, Economics, May 1996
 John Wald, Economics, May 1996
 Hank Chesbrough, Haas School of Business, May 1997
 Melissa Appleyard, Economics, May 1997
 Marilyn Garcia, Economics, August 1997
 Janet Berkowitz, Haas School of Business, December 1999
 Rosemarie Ham Ziedonis, Haas School of Business, December 2000
 Arvids Ziedonis, Haas School of Business, April 2001
 Best dissertation in technology management 2001-2002, INFORMS (Institute for Operations Research and the Management Sciences).
 Chris Boerner, Haas School of Business, July 2001
 Steven Puller, Economics, August 2001
 Jennifer Kuan, Haas School of Business, August 2001
 Jeffrey Macher, Haas School of Business, September 2001
 Deepak Somaya, Haas School of Business, April 2002
 Best Dissertation Award at the Academy of Management, 2002.
 Gregory Graff, Agricultural and Resource Economics, August 2002
 Carlo Cafiero, Agricultural and Resource Economics, August 2002
 Petra Moser, Economics, October 2002
 Gerschenkron Prize for best dissertation in economic history, Economic History Association, 2002.
 Patrick Moreton, Haas School of Business, December 2002
 Anna Gueorguieva, Agricultural and Resource Economics, June 2003
 Robert Lowe, Haas School of Business, 2003
 Stuart Graham, Haas School of Business, 2004
 Olga Khessina, Haas School of Business, 2004
 Tim Simcoe, Haas School of Business, 2004
 Daniel Snow, Haas School of Business, 2004
 Lamar Pierce, Haas School of Business, 2005
 Kira Markiewicz Fabrizio, Haas School of Business, 2005
 Ronnie Chatterji, Haas School of Business 2006

Sara Boettiger, ARE, 2006

Evan Rawley, Haas School of Business, 2007

Simon Wakeman, Haas School of Business, 2007

Ian Larkin, Haas School of Business, 2007

one of top 3 student papers, Business Policy & Strategy Division, Academy of Management
2006

Chieh-Yu Hsiao, Transportation Engineering, 2008

Deepak Hegde, Haas School of Business, 2010

Ed Egan, Haas, UC Berkeley, 2012

Brian Hong, Haas, UC Berkeley, 2012

Sharat Raghavan, Haas, UC Berkeley, 2012

Gisela Rua, Economics, UC Berkeley, September 2012

Neil Thompson, Haas, UC Berkeley, December 2012

Michel Serafinelli, Economics, UC Berkeley, Fall 2013

Other institutions (not including external examining):

Hugo Krüninger, Maastricht University, November 1996

Michele Cincera, Université Libre de Bruxelles, April 1998

Daehwan Kim, Harvard University, May 2000

Katrin Hussinger, KU Leuven, September 2007

Rodolfo Lauterbach, UNU-MERIT, December 2012 (first reader)

Visiting scholar supervision:

Katrin Vopel (Cremers), ZEW Mannheim, Germany, 1997

Juergen Bitzer, DIW Berlin, Germany, 1999

Constance Phelizon, Université Paris I, France, 2000

Raffaele Oriani, Università di Bologna, Italy, 2000-2001

Markus Reitzig, Ludwig-Maximilians Universität München, Germany, 2001

Dirk Czarnitzki, ZEW Mannheim, Germany, 2002; 2004

Carmine Ornaghi, U Carlos Tercera, Madrid, Spain, 2002

Otto Toivanen, Helsinki School of Economics, Finland, 2003-2004

Lotta Väänänen, ETLA, Finland, 2004

Andrea Gallice, EUI, Florence, Italy, 2004-2005

Wang Hongwei, Chinese Academy of Social Sciences, Beijing, China, 2006-2007

Patrick Beschorner, U of Mannheim, Germany, 2008-2009

Ana Paula R P Faria, Universidade do Minho, Portugal, 2008-2009

Ling Wang, Chinese Academy of Social Sciences, Beijing, China, 2009-2011

Christian Helmers, Oxford University, UK, 2009-2010

Timo Fischer, Technical University of Munich, Germany, 2010-2011

Yanbing Wu, Chinese Academy of Social Sciences, Beijing, China, 2010-2011

Giovanni Marin, LEM, Lucca, Italy, 2011

Antonio della Malva, University of Maastricht, The Netherlands, 2011