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Department of Economics
London School of Economics
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EDUCATION

| | |
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| Ph.D. Economics | Harvard University |
| M.A. Economics | Harvard University |
| B.A., Economics | Brandeis University |
| Magna cum laude, Phi Beta Kappa, Feldberg Prize in Economics | |

PRESENT EMPLOYMENT

Managing director, Berkeley Research Group
Professor of Economics, London School of Economics, 1987–present
M.Sc. Economics Program Director, London School of Economics, 2014–present
Research fellow, Center for Economic Policy Research, 1999–present
Research associate, Centre for Economic Performance, London School of Economics, 2005–present

PREVIOUS POSITIONS

University of Arizona, 2007–2009 (on leave of absence from London School of Economics)
Professor of Economics, Muzzy Chair in Entrepreneurship, executive director of the McGuire Center for Entrepreneurship, and Presidential Scholar

London School of Economics
Research director, Program on Productivity and Innovation, Centre for Economic Performance, 2006–2007

European Bank for Reconstruction and Development,
Senior advisor to the Office of the Chief Economist, 1998–2003
Director of Policy Studies, 1995–1998

National Bureau of Economic Research
Research associate, 1982–1994

World Bank: Africa Technical Department
Senior economist, 1992–1993

New York University
Assistant professor, Department of Economics, 1978–1987

AREAS OF SPECIALIZATION

Intellectual property rights, innovation, industrial organization, emerging economies

JOURNAL EDITORSHIP

Editorial Advisory Council, *Journal of Industrial Economics*, 2007–present
Editor, *Economics of Transition*, 1998–2012
Associate editor, *RAND Journal of Economics*, 2007–2012
Associate editor, *Journal of Industrial Economics*, 1989–1994
Co-editor, *Economica*, 1989–1991

VISITING PROFESSORSHIPS

- Visiting professor of Economics, Institute of Innovation Research, Hitotsubashi University (Tokyo), June–September 2013
- Visiting scholar, University of Texas at Austin, School of Law and Department of Economics, 2012–2013
- Lady Davis Visiting Professor, Department of Economics, Hebrew University of Jerusalem, January–June 2007
- Vodafone Visiting Professor of Economics, Sant' Anna School of Advanced Studies, University of Pisa, September 2004
- Visiting scholar, Haas School of Business, University of California, Berkeley, 1997–1998
- Visiting professor, Department of Economics, University of Brussels, Fall 1991

SELECTED KEYNOTE ADDRESSES

- Keynote Address: 50th Anniversary of the Institute for Advanced Studies, Vienna, May 2014
- Keynote Address: International Workshop on Innovation and IPRs, Institute of Innovation Research, Tokyo, June 2013

- Keynote Address: Incentives and Knowledge for Pharmaceutical Innovation: Industry–University–Government Collaborative Workshop, Tokyo, September 2013
- Keynote Address: International Max Planck–Ludwig Maximilian University Research School of Competition and Innovation, Workshop for Junior Researchers on the Law and Economics of Intellectual Property, Ringberg Castle, Germany, June 2012
- Keynote Address: Conference on Patents, Centre for Economic Research (ZEW), Mannheim, Germany, May 2008
- Beesley Lecture on Regulation (London Business School): “The Economics of Patent Reform: Improving the Design of Incentives and Mechanisms for Enforcement, November 2007
- Keynote Address: International Telecommunications Society Conference, Sydney, June 1994

PUBLIC SERVICE

- U.S. Patent and Trademark Office, Economics Lecture Series: Understanding the Innovation Economy, “Global Diffusion of New Drugs: The Role of Patent Policy, Price Controls and Institutions,” December 2011
- U.S. Patent and Trademark Office, Presentation to the Director and Executive Working Group: on “Designing Patent Fees,” August 2011
- Expert Advisory Panel for Hargreaves Independent Review of Intellectual Property and Growth (commissioned by the UK Government), 2010–2011
- Grant Review Panel, Science of Science and Innovation Policy, U.S. National Science Foundation, 2010
- Strategic Advisory Board for Intellectual Property Policy, UK Government, 2009
- Expert Advisory Group, Gower Review of Intellectual Property, UK Government, 2006
- Economic Advisory Group, European Patent Office (Munich, Germany), 2006

RECENT RESEARCH AND POLICY PAPERS

- “Patents and the Global Diffusion of New Drugs,” with Iain Cockburn and Jean Lanjouw, under review at journal. Available as NBER Working Paper 20492 (September 2014) and CEPR Discussion Paper 10149, September 2014.
- “Government Funding for R&D Start-Ups,” with Saul Lach and Zvika Neaman, LSE mimeo, October 2014.
- “Economic Principles for Efficient Public Procurement in Information Technology,” with Jacques Cremer, *Submission to the U.K. Cabinet Office in connection with the Open Standards Consultation*, May 2012, <http://ssrn.com/abstract=2143096>

RESEARCH IN PROGRESS

- “Patent Rights and Research Trajectories,” with Alberto Galasso
“Patent Screening, Renewal Fees and the Courts,” with Florian Schuett

PUBLICATIONS

BOOKS

- (1) *The Comingled Code: Open Source and Economic Development*, with Josh Lerner, Cambridge, MA: MIT Press, October 2010. Paperback edition issued in 2013. Reviewed in *The Economist*, 13 January 2011; excerpts published in *European Financial Review*, December 2011–January 2012: 40–44. Korean edition: Acorn Publishing, 2013. Polish edition, Free Media Publishing: Warsaw, forthcoming. Chinese edition: CITIC Press, forthcoming.

PUBLISHED ARTICLES

- (2) “Patents and Cumulative Innovation: Causal Evidence from the Courts,” with Alberto Galasso, forthcoming in *Quarterly Journal of Economics*. Also available as *NBER Working Paper 20269*, June 2014, and *CEPR Discussion Paper 9458*, June 2014.
- (3) “Motivation and Sorting of Human Capital in Open Innovation,” with Sharon Belenzon, forthcoming in *Strategic Management Journal*, available online at <http://onlinelibrary.wiley.com/doi/10.1002/smj.2284/pdf>.
- (4) “Identifying Technology Spillovers and Product Market Rivalry,” with Nick Bloom and John Van Reenen, *Econometrica* 81:4, 2013, 1347–1393. Supplementary appendices published on *Econometrica* website: 1–33.
- (5) “Trading and Enforcing Patent Rights,” with Alberto Galasso and Carlos Serrano, *RAND Journal of Economics* 44:2, Summer 2013, 275–312.
- (6) “Spreading the Word: Geography, Policy and Knowledge Spillovers,” with Sharon Belenzon, *Review of Economics and Statistics* 95:3, 2013, 884–903.
- (7) “Strategic Patenting and Software Innovation,” with Michael Noel, *Journal of Industrial Economics* LXI:3, 2013, 481–520
- (8) Editor and “Introduction to Symposium on Patents, Entrepreneurship and Innovation,” *Journal of Industrial Economics* LXI:3, 2013, 471–480.
- (9) “Patent Thickets, Courts and the Market for Innovation,” with Alberto Galasso, *RAND Journal of Economics* 41:3, 2010, 472–503.
- (10) “University Knowledge Transfer: Private Ownership, Incentives and Local Development Objectives,” with Sharon Belenzon, *Journal of Law and Economics* 52, 2009, 111–144.
- (11) “Improving Patent Incentives and Enforcement,” *Journal of Intellectual Property Law and Practice*, September 2009, 11–23.
- (12) “Comments on ‘A Policy Shaped Research Agenda on the Economics of Science and Technology Policy,’” in Dominique Foray (ed.), *The New Economics of Technology Policy*, Cheltenham: Edward Elgar Publishing, 2009, 122–26.

- (13) "Incentives and Invention in Universities," with Saul Lach, *RAND Journal of Economics* 39:2, 2008, 403–433. Reprinted in Alison Wolf and Sandra McNally (eds.), *Education and Economic Performance*, Edward Elgar Publishing, 2011.
- (14) "On the Welfare Effects and Political Economy of Competition-Enhancing Policies," with Philippe Aghion, *Economic Journal* 114, October 2004, 804–824.
- (15) "Royalty Sharing and Technology Licensing in Universities," with Saul Lach, *Journal of the European Economic Association* 2:2/3, April–May 2004, 252–264.
- (16) "Protecting Patent Rights: Are Small Firms Handicapped?" with Jean Lanjouw, *Journal of Law and Economics* 48:1, April 2004, 45–74.
- (17) "Patent Quality and Research Productivity: Measuring Innovation with Multiple Indicators," with Jean Lanjouw, *Economic Journal*, April 2004, 441–465.
- (18) "Idiosyncratic and Common Shocks to Investment Decisions," *Economic Journal*, October 2002, 766–785.
- (19) "An Empirical Analysis of the Enforcement of Patent Rights in the United States," with Jean Lanjouw, in *Patents in the Knowledge-Based Economy* Wesley Cohen and Steven Merrill (eds.), National Academy Press: Washington, DC, 2003, 145–179.
- (20) "Damages and Injunctions for Protecting Intellectual Property," with Suzanne Scotchmer, *RAND Journal of Economics*, 2001, 199–221.
- (21) "Characteristics of Patent Litigation: A Window on Competition," with Jean Lanjouw, *RAND Journal of Economics*, 2001, 129–151. Reprinted in Robert Merges (ed.), *Economics of Intellectual Property Law*, Edward Elgar Publishing, 2007.
- (22) "Intervention, Corruption and Capture: The Nexus between Enterprises and the State," with Joel Hellman, *Economics of Transition*, 2000, 545–576.
- (23) "Patent Renewals and R&D Incentives," with Francesca Cornelli, *RAND Journal of Economics*, 1999, 17–34.
- (24) "Comments in R&D Roundtable," in Samuel Kortum (ed.), "An R&D Roundtable," *Economics of Innovation and New Technology* 13:4, 2004, 349–363.
- (25) "Competition, Entry and the Social Returns to Infrastructure in Transition Economies," with Philippe Aghion, *Economics of Transition*, March 1999, 79–104.
- (26) "Governance in Transition," *Transition Report: Enterprise Performance and Growth*, European Bank for Reconstruction and Development, Her Majesty's Stationery Office: London, 1999, Chapter 6, 48–59.
- (27) "How Valuable is Patent Protection? Estimates by Technology Field," *RAND Journal of Economics* 29:1, 1998, 77–107.
- (28) "Enterprise Restructuring and Social Benefits," with Simon Commander, *Economics of Transition* 5:1, 1997, 1–24.
- (29) "Growth in Transition Economies: Sources and Obstacles," with Philippe Aghion, in *Transition Report: Enterprise Performance and Growth*, European Bank for Reconstruction and Development, Her Majesty's Stationery Office: London, 1997, Chapter 3, 48–59.
- (30) "Symmetric Regulation for Competitive Telecommunications," *Information Economics and Policy* 8, 1996, 3–23.
- (31) *Transition Report: Investment and Enterprise Development*, European Bank for Reconstruction and Development, distributed by Her Majesty's Stationery Office: London, 1995, editor and co-author of three chapters: "Transition: measurement and indicators," Chapter 2, 14–32; "Transition Impact of Investment Projects," Chapter 7,

- 118–126; "Ownership, Governance and Restructuring," with Philippe Aghion, Chapter 8, 128–138.
- (32) "Exploiting New Market Opportunities in Telecommunications," with V. Bishop and A. Mody, in *Infrastructure Delivery: Private Initiatives and the Public Good*, Ashok Mody (ed.), Washington, DC: World Bank, 1997, 37–78.
- (33) "Measurement of the Value of Patent Rights and Inventive Output Using Patent Renewal Data," *Science and Technology Indicators Review*, Paris: OECD, 1991, 101–122.
- (34) "Dynamics of R&D and Investment in the Scientific Sector," with Saul Lach, *Journal of Political Economy*, August 1989, 880–904.
- (35) "Estimates of the Value of Patent Rights in European Countries During the Post-1950 Period," with Ariel Pakes, *Economic Journal*, December 1986, 1052–1076. Reprinted in Robert Merges (ed.), *Economics of Intellectual Property Law*, Edward Elgar Publishing, 2007.
- (36) "A Test of static Equilibrium Models and Rates of Return to Quasi-Fixed Factors, with an Application to the Bell System", with M.I. Nadiri, *Journal of Econometrics*, October/November 1986, 97–118.
- (37) "Estimating the Effects of R&D on Bell System Productivity: A Model of Embodied Technical Change", with Roger Gordon and Richard Spady, in M. Peston and R. Quandt (eds.), *Prices, Competition and Equilibrium*, Oxford: Philip Allan Press, 1986, 164–190.
- (38) "Valeur et obsolescence des brevets: une analyse des statistiques de renouvellement des brevets Européens," *Revue Economique: Economie de la Recherche-Développement*, September 1985, 917–942.
- (39) "An Exploration into the Determinants of Research intensity", with Ariel Pakes, in Z. Griliches (ed.), *R&D, Patents and Productivity*, Chicago: University of Chicago Press, 1984, 209–233.
- (40) "Investment in R&D, Costs of Adjustment and Expectations", with M.I. Nadiri, in Zvi Griliches (ed.), *R&D, Patents and Productivity*, Chicago: University of Chicago Press, 1984, 315–338.
- (41) "The Rate of Obsolescence of Patents, Research Gestation Lags, and the Private Rate of Return to Research Resources," with Ariel Pakes, in Zvi Griliches (ed.), *R&D, Patents and Productivity*, Chicago: University of Chicago Press, 1984, 98–112.
- (42) "Comment on Long Run Trends in Patents", in Zvi Griliches (ed.), *R&D, Patents and Productivity*, University of Chicago Press, 1984.
- (43) "Technical Change, Returns to Scale, and the Productivity Slowdown," with M.I. Nadiri, *American Economic Review*, May 1981, 314–319.
- (44) "The Structure of Production, Technological Change, and Total Factor Productivity Growth in the Bell System," with M.I. Nadiri, in T. Cowing and R. Stevenson (eds.), *Productivity Measurement in Regulated Industries*, New York: Academic Press, 1981, 219–24.
- (45) "The Effects of Double Counting and Expensing on the Measured Returns to R&D," *Review of Economics and Statistics*, August 1981, 454–459.
- (46) "Identical Bids and Cartel Behavior," with William Comanor, *Bell Journal of Economics and Management Science*, Spring 1976, 281–286.
- (47) "Common Costs in Pharmaceutical Research and Development: Implications for Direct Price Regulation", in Samuel Mitchell and Emery Link (eds.), *Impact of Public*

Policy on Drug Innovation and Pricing, American University Press: Washington, 1976, 3–26.

BOOK REVIEWS

- (48) Adam Jaffe and Manuel Trajtenberg, *Patents, Citations and Innovations: A Window on the Knowledge Economy*, MIT Press: Cambridge, MA, 2002, in *Economic Journal* 113, November 2003, 653–654.
- (49) Maxim Boyko, Andrei Shleifer, and Robert Vishny, *Privatizing Russia*, MIT Press: Cambridge, MA, 1995, in *Journal of Economic Literature*, June 1997, 818–820.
- (50) Partha Dsgupta and Paul Stoneman (eds.), *Economic Policy and Technological Performance*, Cambridge University Press, 1987, in *Journal of Economic Literature*, June 1990.
- (51) James Tobin, *Asset Accumulation and Economic Activity*, in *Giornale Economisti*, September/October 1984.
- (52) Robert Amman and Michael Cooper (eds.), *Industrial Innovation in the Soviet Union*, in *Giornale Economisti*, September/October 1984.

OTHER RESEARCH PAPERS

- “Public Support for Research in Universities: Some Discussion Points,” invited discussion paper for the UK Economic and Social Research Council, March 2006.
- “Blended Finance and Subsidies: An Economic Analysis of the Use of Grants and Other Subsidies in Project Finance of Multilateral Development Banks,” with Willem Buiter, European Bank for Reconstruction and Development, working paper, June 2002.
- “Blended Finance and Grants: An Accounting Framework for Enhanced Transparency in the Use of Grants in Projects,” with Willem Buiter and Maria Vagliasindi, European Bank for Reconstruction and Development, January 2003.
- “An Analytical Framework for Evaluating Transition Impact of Infrastructure Projects,” with Philippe Aghion, European Bank for Reconstruction and Development, Working Paper No. 57, October 2000.
- “Corruption and Regulation: Theory and Evidence,” London School of Economics, mimeo, December 2001. Presented at the EBRD Tenth Anniversary Conference on Transition, London.
- “Measuring Governance, Corruption and State Capture: How Firms and Bureaucrats Shape the Business Environment in Transition Economies,” with J. Hellman, G. Jones and D. Kaufmann, World Bank Working Paper No. 2312, 2000.
- “Symmetric Regulation,” with Len Waverman and Lorenzo Pupillo, paper presented at European Telecommunications Conference, Stockholm, June 1999.

- "Evaluating the Need for Broadband Open Access Policies," with Len Waverman and Carlo Cardilli, 1998.
- "Investment Appraisal, Policy Reform and the Transition Process," with Robin Burgess and Nicholas Stern, presented at the Conference on Policy Studies to Promote Private Sector Development, EBRD, April 1996.
- "Shackles or Shillings: Constraints to Kenyan Private Sector Development," mimeo, World Bank, 1992.
- "The Private Value of Patent Rights in France, 1969–1987: An Empirical Study of Patent Renewal Data," Final Report, Division of Science and Technology Indicators, U.S. National Science Foundation, January 1990.

RESEARCH GRANTS

- National Foreign Trade Council Foundation, 2012–2014, "Global Diffusion of New Drugs: Patent Policy, Price Regulation and Health Institutions," with Iain Cockburn
- The British Academy, 2006: "Explaining Open Source Software Development: Reputation Effects, Tacit Reciprocation and Motivated Agents"
- Microsoft Corporation, 2004: "Strategic Patenting and Innovation in Software"
- Neaman Institute for Advanced Studies in Science and Technology Policy, Israel Institute of Technology, 2004: "Incentives, Constraints and Objectives in Technology Licensing Offices and the Effectiveness of Technology Transfer Activities"
- U.S. National Academy of Sciences: Board on Science, Technology and Economic Policy, 2000: "Enforcing Intellectual Property Rights: the Incidence and Outcomes of Patent Suits"
- Director, Policy Studies for the Economic Analysis of Project Preparation and Appraisal in Transition Economies, Grant to the Office of the Chief Economist from European Commission to the EBRD, 1996, ECU 589,500
- Director, Policy Studies to Promote Private-Sector Development, Grant to Office of the Chief Economist from the Japan-Europe Cooperation Fund to the EBRD, 1994, £480,000
- Nuffield Foundation, 1995: "Patent Litigation and the Value of Patent Protection"
- Suntory-Toyota Center for Economics and Related Disciplines, London School of Economics, 1995: "Patent Litigation and the Value of Patent Protection"
- U.S. National Science Foundation, Division of Science and Technology Indicators, 1986: "The Private Value of Patent Rights in France"
- Bell Laboratories, 1983: "Economic Effects of R&D in the Bell System"
- American Telephone and Telegraph Company, 1979: "Production Structure and Technical Change in the Bell System"

INVITED UNIVERSITY COURSES (SELECTED)

- Advanced Institute on Science and Education, Steyr, Austria, July 2006
- Vodafone Visiting Professor, Sant' Anna School of Advanced Studies, University of Pisa: Doctoral Program in Economics and Management, Lectures on R&D and Intellectual Property, September 2004
- Institute for Advanced Studies, Vienna, Austria: Transition in Eastern Europe and the Former Soviet Union, 1997
- Bocconi University, Milan, Italy: (1) Applied Duality Analysis, 1987; (2) Panel Data with Applications to R&D, 1991
- Hebrew University, Jerusalem, Israel: Panel Data Analysis, 1990
- Gothenberg University, Gothenberg, Sweden: Panel Data Analysis, 1989

INVITED CONFERENCE PRESENTATIONS (SELECTED)

- ZEW Workshop on Empirical Economics of Innovation and Patenting, Mannheim, Germany, March 2011
- European Policy for Intellectual Property, Sixth Annual Conference on Intellectual Property Rights, Maastricht, Netherlands, September 2010
- European Policy for Intellectual Property, Third Annual Conference on Intellectual Property Rights, Bern, Switzerland, October 2008
- International Association for the Protection of Intellectual Property, London, UK, July 2008
- World Intellectual Property Organization (WIPO), National Roundtable on the Economics of Intellectual Property, New Delhi, India, March 2007
- European Policy for Intellectual Property, First Annual Conference on Intellectual Property Rights, Munich, Germany, October 2006
- San Francisco Federal Reserve Bank, Conference on Productivity: Causes and Consequences, November 2005
- ZEW Workshop on Empirical Economics of Innovation and Patenting, Mannheim, Germany, March 2003
- San Francisco Federal Reserve Bank, Conference on Productivity, November 2003
- NBER Summer Institute, Cambridge, USA, July 2003, 2007, 2008, 2010

Corporate Expert Testimony and Consulting Activities in Development/Emerging Markets (details available on request)

- World Bank, Washington DC (worked in Ghana, Kenya, Zimbabwe and South Africa)
- European Bank for Reconstruction and Development, London
- World Intellectual Property Organization (WIPO), Geneva
- General Telephone and Electronics (GTE)
- Organization for Economic Co-operation and Development (OECD)
- Pacific Gas and Electric Company, California

- Telecom Italia
- Telewest
- Bell Canada

ACADEMIC REFERENCES

Philippe Aghion: Department of Economics, Harvard University
Ariel Pakes: Department of Economics, Harvard University
John Sutton: Department of Economics, London School of Economics