

FRANK R. LICHTENBERG

**Curriculum Vitae
June 2007**

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Columbia University
Graduate School of Business
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Home

91 Greenacres Avenue
Scarsdale, NY 10583

Home office (voice & fax):
(914) 713-4373

Date of birth: 11/22/51

Married, two children.
Conversant in French.

CURRENT POSITIONS

Courtney C. Brown Professor of Business, Columbia University Graduate School of Business

Research Associate, National Bureau of Economic Research
Productivity and Health Care Programs

Research Fellow, CESifo (Center for Economic Studies/Ifo Institute for Economic Research), Munich, Germany

Associate Editor, *Management Science*

Associate Editor, *Economics*

Editorial Board member, *Journal of Evolutionary Economics*

Editorial Board member, *Defence and Peace Economics*

Member, Conference on Research in Income and Wealth

Affiliate, LECG, LLC (economic consulting services firm)

AWARDS

Winner of the 2003 Milken Institute Award for Distinguished Economic Research for the paper, *Pharmaceutical Knowledge-Capital Accumulation and Longevity*.

Winner of the 1998 Schumpeter Prize for the paper, *Pharmaceutical Innovation as a Process of Creative Destruction*.

Margaret Chandler Memorial Award for Commitment to Excellence ("Best Teacher Award") by the Columbia Business School Executive MBA Class of 1994-II.

EDUCATION

Ph.D. Economics, University of Pennsylvania, 1982

Dissertation: Training, Tenure, and Productivity

Graduate Honors received: University Fellow, Teaching Fellow, Graduate Group Fellow

M.A. Economics, University of Pennsylvania, 1976

B.A. with Honors, History, University of Chicago, 1973

National Merit Scholar Finalist, 1969

attended University of Warwick (England), Fall 1972

PREVIOUS TEACHING AND RESEARCH POSITIONS

Member, Advisory Committee, Division of Information Management, New York Academy of Medicine

Visiting Scholar, Federal Trade Commission, Fall 1997

Visiting Scholar, Center for Economic Studies, University of Munich, July 1997

Columbia University Graduate School of Business

Head of Economics Group, 1994-96

Professor, 1992-95

Associate Professor, 1986-92

Assistant Professor, 1983-86

Visiting Scholar, Wissenschaftszentrum Berlin, July 1995

Visiting Scholar, Kiel (Germany) Institute of World Economics, August 1993

National Bureau of Economic Research

Faculty Research Fellow, 1982-86

Research Economist, 1980-82

Jerome Levy Economics Institute at Bard College

Research Fellow, 1989-90

American Statistical Association/National Science Foundation/Census Bureau

Research Fellow, 1986-87

Columbia University, Center for Education and the American Economy

Senior Research Associate, 1985-87

University of Adelaide (Australia)

Visiting Lecturer, 1982

Harvard University

Instructor, 1982

U.S. Bureau of Labor Statistics, Office of Economic Growth

Dissertation Fellow, 1979-80

Brookings Institution

Research Fellow in Economics, 1978-79

University of Pennsylvania, Wharton School
Instructor, 1978

U.S. Congressional Budget Office, Budget Analysis Division
Intern, 1977

U.S. Department of Justice, Antitrust Division
Intern, 1976

Henry Dreyfuss Associates (Industrial Designers), Production Manager, 1973-75

PUBLICATIONS

Book

Corporate Takeovers and Productivity (Cambridge: MIT Press, 1992).

Articles

“The impact of Medicare Part D on prescription drug use by the elderly: evidence from a large retail pharmacy chain,” with Shawn Sun, *Health Affairs*, forthcoming.

“Importation and innovation,” *Economics of Innovation and New Technology*, forthcoming.

“Pharmaceutical-embodied technical progress, longevity, and quality of life: drugs as ‘equipment for your health,’” with Suchin Virabhak, *Managerial and Decision Economics*, forthcoming.

“The Effect Of Education On Medical Technology Adoption: Are The More Educated More Likely To Use New Drugs?,” with Adriana Lleras-Muney, *Annales d’Economie et de Statistique*, forthcoming.

“The Effect of Using Newer Drugs on the Longevity of Koreans: Evidence from National Health Insurance Data,” with KeeTaig Jung and Jeongyoon Kim, *Korean Journal of Health Policy and Administration*, forthcoming.

“International differences in cancer survival rates: the role of new drug launches,” *International Journal of Healthcare Technology and Management*, forthcoming.

“Effects of new drugs on overall health spending: Frank Lichtenberg responds.,” *Health Affairs* 26(3), May-June, 887-90.

“The effect of using newer drugs on admissions of elderly Americans to hospitals and nursing homes: state-level evidence from 1997-2003,” *Pharmacoeconomics* 24 Suppl 3, 2006, 5-25.

“The Impact of New Drugs on U.S. Longevity and Medical Expenditure, 1990-2003,” *American Economic Review* 97 (2), May 2007, 438-443.

“Ensuring the future supply of vaccines: Is a National Vaccine Authority the answer?,” in *Pharmaceutical Innovation: Incentives, Competition, and Cost-Benefit Analysis in International Perspective*, ed. by Chee-Ruey Hsieh and Frank Sloan (Cambridge University Press, 2007), 127-52.

“The impact of increased utilization of HIV drugs on longevity and medical expenditure: an assessment based on aggregate U.S. time-series data,” *Expert Review of Pharmacoeconomics and Outcomes Research*, Volume 6, Number 4, August 2006, 425-436.

“Did CMS’ Functional Equivalence Decision Result in Equitable Payments?,” *Journal of Pharmaceutical Finance, Economics & Policy* 15(1), 2006, 7-20.

“Has using newer drugs reduced admissions to hospitals and nursing homes?,” *Swiss Journal of Economics and Statistics* 142, pp. 69-75.

“The Benefits to Society of New Drugs: A Survey of the Econometric Evidence,” in *Engaging the New World: Responses to the Knowledge Economy*, edited by Bhajan S. Grewal and Margarita Kumnick, Melbourne University Press, Melbourne, 2006.

“Pharmaceutical Innovation as a Process of Creative Destruction,” in *Knowledge Accumulation and Industry Evolution: The Case of Pharma-Biotech*, ed. by Mariana Mazzucato and Giovanni Dosi (Cambridge University Press, 2006), pp. 21-72.

"Pharmaceutical innovation and the burden of disease in developing countries," *Journal of Medicine and Philosophy* 30(6), December 2005.

“Pharmaceutical Knowledge-Capital Accumulation and Longevity,” in *Measuring Capital in the New Economy*, ed. by Carol Corrado, John Haltiwanger, and Dan Sichel, pp. 237-269 (University of Chicago Press, 2005).

"Availability of new drugs and Americans' ability to work," *Journal of Occupational and Environmental Medicine* 47 (4), April 2005, 373-380.

“The Effect of Access Restrictions on the Vintage of Drugs Used by Medicaid Enrollees,” *American Journal of Managed Care* 11, Special Issue, 2005, SP7-SP13.

"The impact of new drug launches on longevity: evidence from longitudinal disease-level data from 52 countries, 1982-2001," *International Journal of Health Care Finance and Economics* 5, 2005, pp. 47-73.

“Sources of U.S. Longevity Increase, 1960-2001,” *Quarterly Review of Economics and Finance* 44(3), pp. 369-389 (July 2004).

“Public policy and innovation in the U.S. pharmaceutical industry,” in *Public Policy and the Economics of Entrepreneurship*, ed. by Douglas Holtz-Eakin and Harvey S. Rosen (MIT Press, 2004), pp. 83-113.

“The Effect of New Drugs on HIV Mortality in the U.S., 1987-1998,” *Economics and Human Biology* 1 (2003) 259-266.

“Pharmaceutical Innovation, Mortality Reduction, and Economic Growth,” in *Measuring the Gains from Medical Research: An Economic Approach*, ed. by Kevin M. Murphy and Robert H. Topel (Chicago: University of Chicago Press, 2003), pp. 74-109.

“The Dual Effects of Intellectual Property Regulations: Within- and Between-Patent Competition in The US Pharmaceuticals Industry,” with Tomas Philipson, *Journal of Law & Economics* 45, pp. 643-672, 2002.

“The Effects of Medicare on Health Care Utilization and Outcomes,” *Frontiers in Health Policy Research*, Vol. 5, ed. by Alan Garber (MIT Press, 2002).

“Are the Benefits of Newer Drugs Worth Their Cost? Evidence from the 1996 MEPS,” *Health Affairs* 20(5), September/October 2001, 241-51.

"Does foreign direct investment transfer technology across borders?," with Bruno van Pottelsberghe de la Potterie, *The Review of Economics and Statistics*, Aug 2001; Vol. 83, Iss. 3; pp. 490-7.

"The Allocation of Publicly Funded Biomedical Research," in *Medical Care Output and Productivity*, Studies in Income and Wealth Volume 62, ed. by Ernst Berndt and David Cutler (University of Chicago Press, 2001), 565-89.

"The Effect of Pharmaceutical Utilisation and Innovation on Hospitalisation and Mortality," in *Productivity, Technology, and Economic Growth*, ed. by B. van Ark, S. K. Kuipers and G. Kuper (Kluwer Academic Publishers, 2000).

"The European Strategic Programme for Research in Information Technologies (ESPRIT): An Ex-Post Analysis," in *The Political Economy of Industrial Policy*, ed. by D. Neven and Lars-Hendrik Roller (Wissenschaftszentrum Berlin and Edition Sigma).

"Managerial Ownership and Firm Performance: A Re-examination Using Productivity Measurement," with Darius Palia, *Journal of Corporate Finance: Contracting, Governance and Organization* 5(4), December 1999, 323-39.

"Information Technology and Its Impact on Productivity: Firm-level Evidence from Government and Private Data Sources, 1977-1993," with Bill Lehr, *Canadian Journal of Economics* 32(2), April 1999, 335-62.

"Computer Use and Productivity Growth in Federal Government Agencies, 1987-92," with Bill Lehr, *Journal of Industrial Economics* 46(2), June 1998, 257-79.

"International R&D Spillovers: A Comment," with Bruno van Pottelsberghe de la Potterie, *European Economic Review* 42(8), September 1998, 1483-91.

"The Impact and Organization of Publicly-Funded Research and Development in the European Community," with Maryann Feldman, *Annales d'Economie et Statistique* 0(49-50), (in English), Jan.-June 1998, 199-222.

"Technology Investment is Driving Economic Growth," in *The Rising Tide*, ed. by Jerry Jasinowski (New York: Wiley, 1998), 163-9.

"Commentary: Shoring up Government Support," in *The Future of Biomedical Research*, ed. by Claude Barfield and Bruce Smith (Washington: American Enterprise Institute and Brookings Institution, 1997), 67-72.

"Do (More and Better) Drugs Keep People Out of Hospitals?," *American Economic Review* 86, May, 1996, 384-8.

"Labour Market Institutions, Liquidity Constraints, and Macroeconomic Stability," *Journal of Economic Behavior and Organization* 28 (1995), 145-54.

"The Output Contributions of Computer Equipment and Personnel: A Firm-Level Analysis," *Economics of Innovation and New Technology* 3 (1995), 201-17.

"The Economics of Defense R&D," in *The Handbook of Defense Economics*, Volume 1, ed. by K. Hartley and T. Sandler. Handbooks in Economics, vol. 12. (Amsterdam, New York and Oxford: Elsevier, 1995), 431-57.

"Ownership Structure and Corporate Performance in Japan," with George Pushner, *Japan and the World Economy* 6 (1994), 239-61.

"Testing the Convergence Hypothesis," *Review of Economics and Statistics* 76(3), August 1994, 576-9.

"An Industry-Level Analysis of Import Relief Petitions Filed by U.S. Manufacturers, 1958-1985," with Hong Tan, in *Troubled Industries in the United States and Japan*, ed. by Hong Tan and Haruo Shimada (New York: St. Martin's Press, 1994), 161-88.

"Have International Differences in Educational Attainment Levels Narrowed?," in *Convergence of Productivity: Cross-National Studies and Historical Evidence*, ed. by W. Baumol, R. Nelson, and E. Wolff (New York: Oxford University Press, 1994), 225-42.

"R&D Investment and International Productivity Differences," in *Economic Growth in the World Economy*, ed. by Horst Siebert (Tubingen: J. C. B. Mohr, 1993), 89-110.

"Industrial De-Diversification and Its Consequences for Productivity," *Journal of Economic Behavior and Organization* 18 (1992), 427-38.

"A Perspective on Accounting for Defense Contracts," *The Accounting Review* 67 (4), 742-53, October 1992.

"Asset Stripping," in *The New Palgrave Dictionary of Money and Finance*, J. Eatwell, M. Milgate, and P. Newman, eds. (London: Macmillan, 1992).

"The Managerial Response to Regulation of Financial Reporting for Segments of a Business Enterprise," *Journal of Regulatory Economics* 3 (1991), 241-9.

"The Age of Technology and Its Impact on Employee Wages," with Ann Bartel, *Economics of Innovation and New Technology* 1 (1991), 215-31.

"The Impact of R&D Investment on Productivity: New Evidence Using Linked R&D-LRD Data," with Donald Siegel, *Economic Inquiry* 29 (1991), April, 203-28.

"The Effect of Leveraged Buyouts on Productivity and Related Aspects of Firm Behavior," with Donald Siegel, *Journal of Financial Economics* 26 (1990), 165-94.

"The Effect of Ownership Changes on the Employment and Wages of Central-Office and Other Personnel," with Donald Siegel, *Journal of Law and Economics* 33 (1990), October, 383-408.

"U.S. Government Subsidies to Private Military R&D: The Defense Department's Independent R&D Policy," *Defense Economics* 1 (1990), 149-58.

"Aggregation of Variables in Least-Squares Regression," *American Statistician* 44 (1990), 169-71.

"Issues in Measuring Industrial R&D," *Research Policy* 19 (1990), 157-63.

"How Elastic is the Government's Demand for Weapons?," *Journal of Public Economics* 40 (1989), 57-78.

"The Effect of Control Changes on the Productivity of U.S. Manufacturing Plants," with Donald Siegel, *Journal of Applied Corporate Finance*, August 1989, 60-7.

"Contributions to Federal Election Campaigns by Government Contractors," *Journal of Industrial Economics* 38, September 1989, 31-48.

"IR&D Project Data and Theories of R&D Investment," *Journal of Economic Dynamics and Control* 13, 1989, 271-82.

"Errors of Measurement in Output Deflators," with Zvi Griliches, *Journal of Business and Economic Statistics* 7, Jan. 1989, 1-9.

"The Impact of the Strategic Defense Initiative on U.S. Civilian R&D Investment and International Competitiveness," *Social Studies of Science* 19(2), 1989; also published (in French) in J.J. Salomon (ed.), *Science, Guerre et Paix* (Paris: Economica, 1989), 137-56.

"Managerial Economics," in *The Portable MBA*, Mary Anne Devanna and Eliza G.C. Collins, eds. (New York: Wiley, 1989).

"Estimation of the Internal Adjustment Costs Model Using Longitudinal Establishment Data," *Review of Economics and Statistics* 70(3), August 1988, 421-30.

"The Private R&D Investment Response to Federal Design and Technical Competitions," *American Economic Review* 78(3), June 1988, 550-9.

"Productivity Improvements from Changes in Ownership," *Mergers and Acquisitions* 23(2), Sept./Oct. 1988, 48-50.

"Assessing the Impact of Federal Industrial R&D Expenditure on Private R&D Activity in the U.S.," in *The Relation Between Defence and Civil Technologies*, Philip Gummett and Judith Reppy, eds. (Dordrecht: Kluwer Academic Publishers, 1988), 68-87.

"Productivity and Changes in Ownership of Manufacturing Plants," with Donald Siegel, *Brookings Papers on Economic Activity*, 1987:3, 643-73.

"The Effect of Government Funding on Private Industrial Research and Development: A Re-Assessment," *Journal of Industrial Economics* 36(1), Sept. 1987.

"Changing Market Opportunities and the Structure of R&D Investment: The Case of Energy," *Energy Economics* 9(3), July 1987, 154-8.

"The Comparative Advantage of Educated Workers in Implementing New Technology," with Ann Bartel, *Review of Economics and Statistics* 69(1), Feb. 1987, 1-11.

"The Skill Distribution and Competitive Trade Advantage of High-Technology Industries," with Ann Bartel, in *Advances in Industrial and Labor Relations*, Vol. 4, D. Lewin, D. Lipsky, and D. Sockell, eds. (JAI Press, 1987).

"The Duration and Intensity of Investment in Independent Research and Development Projects," *Journal of Economic and Social Measurement* 14, 1986, 207-18.

"Energy Prices and Induced Innovation," *Research Policy* 15, 1986, 67-75.

"Interindustry Technology Flows and Productivity Growth: A Re-Examination," with Zvi Griliches, *Review of Economics and Statistics* 66(2), May 1984.

"The Relationship Between Federal Contract R&D and Company R&D," *American Economic Association Papers and Proceedings* 74(2), May 1984.

"R&D and Productivity at the Industry Level: Is There Still a Relationship?," with Zvi Griliches, in *R&D, Patents, and Productivity*, Zvi Griliches, ed. (Chicago: Univ. of Chicago Press, 1984), pp. 465-496.

Other Publications

"Clinical Laboratory Innovation Means Better Health, Longer Lives," *Laboratory Medicine* 36 (8), p. 452+, August 2005.

"Cover These Treatments ," *Washington Post* (op-ed article), August 20, 2004, page A19 (also appeared in *Houston Chronicle*).

"Longer Living Through Chemistry," *The Milken Institute Review* 6 (1), First Quarter 2004, 16-26.

"The Value of New Drugs," *The Milken Institute Review* 6 (1), Fourth Quarter 2003, 17-25.

"The Economic and Human Impact of New Drugs," *Journal of Clinical Psychiatry* 64, Supplement 17, 2003, 15-18.

"The Benefits to Society of New Drugs: A Survey of the Econometric Evidence," in *Science & Cents: Exploring the Economics of Biotechnology*, ed. By John Duca and Mine Yucel (Dallas: Federal Reserve Bank of Dallas, 2003), 43-59.

"Probing the Link Between Gross Profitability and R&D Spending," *Health Affairs* 20(5), September/October 2001, 221-2.

Comment on Papers by Frank and Salkever and by Skinner and Wennberg, in *The Changing Hospital Industry: Comparing Not-for-Profit and For-Profit Institutions*, edited by David M. Cutler, The University of Chicago Press, 2000

Comment on Paper by Barro and Cutler, in *Mergers and Productivity*, edited by Steven N. Kaplan, The University of Chicago Press, 2000

Comment on Paper by McGuckin, Nguyen, and Reznick, in *Labor Statistics Measurement Issues* edited by John Haltiwanger, Marilyn E. Manser, and Robert Topel, The University of Chicago Press, 1998.

"Do (more and better) medicines keep people out of hospitals?" (Pfizer Forum), *The Economist*, October 26, 1996, p. 63.

Review of *The Performance of Companies*, by Stephen Nickell (Oxford, U.K.: Blackwell, 1995), in *The Journal of Economics*.

Comment on "Efficiency in manufacturing and the need for global competition," by Martin Baily and Neil Gersbach, *Brookings Papers on Economic Activity: Microeconomics* 1995.

"Rejoinder to Comment by Maarten Vendrik," *Journal of Economic Behavior and Organization* 28, Dec. 1995. p. 455.

Comment on " Productivity levels in Germany, Japan, and the United States: Differences and causes," by Bart van Ark and Dirk Pilat, *Brookings Papers on Economic Activity: Microeconomics* 1993.

"Another Way to Measure IT's Productivity Contribution," *The Brookings Review* 12, Fall 1994, 2.

Review of *International High-Technology Competition*, by F. M. Scherer, in *The Journal of Economic Literature* XXXI (4), Dec. 1993, 2015-7.

Comment on "Decade of Debt: Lessons from LBOs in the 1980s," by William Long and David Ravenscraft, in *The Deal Decade: What Takeovers and Leveraged Buyouts Mean for Corporate Governance*, edited by Margaret Blair (Washington: Brookings, 1993), 230-234.

"In a Downturn, Cut Profits Before Jobs" *New York Times* (Sunday Business Section), Feb. 16, 1992, Section 3, p. 13.

"Want More Productivity? Kill That Conglomerate," *Wall Street Journal* (editorial page article), Jan. 16, 1990.

"The Issues in Restructuring," *Institutional Investor*, June 1989.

"In Takeover Wars, Everyone Wins," *New York Times* (Business Forum article), June 18, 1989.

"Takeovers Slash Corporate Overhead," *Wall Street Journal* (editorial page article), Feb. 7, 1989.

"What Makes Plant Productivity Grow?," *Wall Street Journal* (editorial page article), Dec. 24, 1987; also published (in Italian) in *Il Sole 24 Ore* (Milan), Jan. 20, 1988.

Review of *The Burden of Government*, by Edwin S. Mills (Stanford: Hoover Institution Press, 1986) in *Journal of Comparative Economics* 12(2), June 1988, 304-5.

"Military R&D Depletes Economic Might," *Wall Street Journal* (editorial page article), Aug. 21, 1986; reprinted in *Impact*, newsletter of the Institute of Electrical and Electronic Engineers 11(1), May 1987.

RESEARCH IN PROGRESS

NBER Working Paper No. 10884, [The Effect of Drug Vintage on Survival: Micro Evidence from Puerto Rico's Medicaid Program](#) November 2004

NBER Working Paper No. 10328, [The Expanding Pharmaceutical Arsenal in the War on Cancer](#) February 2004

"Better information, better health: the value of clinical laboratory innovation"

CONGRESSIONAL TESTIMONY

Testified before the House Committee on Science, Space, and Technology in hearings on "Corporate Restructuring and Its Effects on R&D," July 13, 1989.

SOURCES OF RESEARCH GRANTS, FELLOWSHIPS, AND CONTRACTS

- | | |
|---|---------------------------------|
| American Assembly of Collegiate Schools of Business | Merck and Co. |
| American Enterprise Institute | National Institute of Education |
| American Statistical Association | National Pharmaceutical Council |
| Federal Trade Commission | National Science Foundation |
| French-American Foundation | Pfizer, Inc. |
| Fulbright Commission | RAND Corporation |
| German Academic Exchange Service | Research Triangle Institute |
| German Marshall Fund of the U.S. | Securities Industry Association |
| Jerome Levy Economics Institute | Alfred P. Sloan Foundation |
| MacArthur Foundation | U.S. Bureau of the Census |

CONSULTING AND REVIEWING ACTIVITIES

Reviewer for:

- | | |
|----------------------------------|---------------------------------|
| Administrative Science Quarterly | Journal of Industrial Economics |
| American Economic Review | Journal of Labor Economics |
| Commonwealth Fund | Journal of Peace Research |
| Econometrica | Journal of Political Economy |

Economic Letters	Journal of Policy Analysis and Management
Economica	Journal of Productivity Analysis
Economics of Innovation and New Technology	Journal of Public Economics
European Economic Review	Journal of the American Medical Association
Financial Management	Medical Care
Health Affairs	MIT Press
Health Economics	National Science Foundation
Industrial Relations	Oxford University Press
International Journal of Epidemiology	Population Studies
International Journal of Industrial Organization	Prentice Hall
Journal of Comparative Economics	Princeton University Press
Journal of Development Economics	Quarterly Journal of Economics
Journal of Economic Behavior and Organization	Rand Journal of Economics
Journal of Econometrics	Research Policy
Journal of Economic Literature	Review of Income and Wealth
Journal of Health Economics	Science
Journal of Health Politics, Policy and Law	University of Chicago Press

Consultant to:

Amer. Fed. of State, County, and Municipal Employees	New York City Water Board
American Hospital Association	New York State Dept. of Econ. Devel.
American Society for Clinical Oncology	OECD
Barr Laboratories	Pennie and Edmonds
Community Preservation Corporation	RAND Corporation
Consortium on Productivity in the Schools	Research Triangle Institute
Economic Policy Institute/Union of Concerned Scientists	Skadden, Arps, Slate, Meagher, & Flom
Gellman Research Associates	Touche, Ross, and Co.
Institute of Medicine	U.S. Bureau of the Census
Internal Revenue Service	Wachtell, Lipton, Rosen & Katz
National Institute of Standards & Technology	Weil, Gotshal, & Manges
National Science Foundation	World Health Organization
New York Attorney General	