

# Professor Fiona E. Murray CBE

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## EDUCATION

Ph.D.	Applied Sciences	Harvard University	1996
A.M.	Applied Sciences	Harvard University	1992
M.A.	Chemistry	Merton College University of Oxford	1990
B.A.	Chemistry (1 <sup>st</sup> )	Merton College University of Oxford	1989

## PRINCIPAL ACADEMIC FIELDS OF EXPERTISE

Entrepreneurship & Innovation Policy, Innovation-driven Entrepreneurship, Science, Innovation & Economic Growth, Economics of Innovation & Technical Change, National Systems of Innovation, Commercialization.

## EMPLOYMENT HISTORY

William Porter (1967) Professor of Entrepreneurship, MIT Sloan School of Management	9/13-
Co-Director, MIT Innovation Initiative, Reporting to MIT Provost	9/13 -
Associate Dean of Innovation, MIT Sloan School of Management	7/15-
Faculty Director Legatum Center for Entrepreneurship and Development	7/15 -
National Bureau of Economic Research Appointment to Research Associate	7/11 – 5/12
Visiting Associate Professor in Entrepreneurship, Harvard Business School	7/09 – 5/15
Faculty Director Martin Trust Center for MIT Entrepreneurship	7/06 – 6/13
Associate Professor (tenured in 2007) Management of Technological Innovation & Entrepreneurship	7/06 – 9/13

Assistant Professor 7/00- 6/06  
Management of Technological Innovation & Entrepreneurship

Lecturer in Management of Science, University of Oxford Said 7/96-6/00  
Business School & Fellow of St. Catherine's College

## MIT ACTIVITIES

Faculty Director & Founder (9/10-present). MIT Regional Entrepreneurship Acceleration Program focused on accelerating innovation-driven entrepreneurship through multi-stakeholder engagement in regions worldwide.

Co-Chair (2013-2016), MIT School of Engineering-Sloan School of Management Taskforce for an Institute-wide Undergraduate Minor in Entrepreneurship.

Member (2012-2015) MIT Standing Committee on Intellectual Property.

Member (2009-present) Committee on Executive Education (MIT Sloan).

Member (2010-2011) MIT Deshpande Center for Technological Innovation Grant Selection Committee.

Member (2008-2012) MIT Standing Committee on the Undergraduate Program

Member (2002-2010), Faculty Committee for Biomedical Enterprise Program (MBA-MS) Harvard-MIT Division of Health Science & Technology.

## POLICY/GOVERNMENT ENGAGEMENT

Member, British Prime Minister's Council on Science and Technology 9/2014 -

Advisory Group for Entrepreneurs Campaign, No. 10 (including hosting the PM visit to MIT, May 2013). 1/2013

Advisory to British Government project on accelerating entrepreneurship (for No. 10 and UKTI) 9/2012-2/2013

Congressional Testimony to the House Committee on Science and Technology 6/2008-9/2008

NAS Center for Education Research on Future Skill Demands in Knowledge work 1/2007-09/2007

## **CORPORATE/NOT-FOR-PROFIT ENGAGEMENT**

Board Member	PRIME Foundation. A not-for-profit foundation focused on providing alternative philanthropic financial models for funding start-ups in energy and beyond with environmental, social and economic potential.
Global Advisory Board Member	MassChallenge. Global accelerator founded in Boston, MA to support entrepreneurship acceleration and job growth and expanded into over 5 countries worldwide.
Faculty	Extensive custom executive education on topics of innovation and corporate entrepreneurship, including a customized program on “Innovation-Driven Entrepreneurial Advantage” (IDEA Program) with large global corporations including OCP (Morocco), BP (UK), Moller-Maersk (Denmark), Vale (Brazil).
Faculty Co-Director	Open enrollment executive education on innovation strategy for US-based R&D Directors, VP Innovation and VP Technology Strategy.
Faculty Co-Lead	Open enrollment executive education on entrepreneurship for the global entrepreneurial community through the MIT Entrepreneurship Development Program.

## SELECTED PUBLICATIONS

### REFEREED JOURNAL ARTICLES

- L. Frolund, **F. Murray**, M. Riedel (2018). "Developing Successful Strategic Partnerships with Universities". *Sloan Management Review Winter 2018*.
- S. Cohen, D. Fehder, Y. Hochberg & **F. Murray** (2018). "The Design and Evaluation of Start-Up Accelerators". *Research Policy (R&R)*.
- S. Burger, **F. Murray**, S. Kearney & L. Ma (2018). The Investment Gap that Threatens the Planet. *Stanford Social Innovation Review Winter 2018*.
- Claudel M, Massaro E, Santi P, **Murray F**, Ratti C (2017) An exploration of collaborative scientific production at MIT through spatial organization and institutional affiliation. *PLoS ONE*12(6): e0179334.
- Lederman, O., Calacci, D., MacMullen, A., Fehder, D. C., **Murray, F.**, & Pentland, A. S. (2017). Open badges: A low-cost toolkit for measuring team communication and dynamics. In *Human-Computer Interaction: Social, Cultural, and Behavioral Modeling*.
- Huang, K.G. and **F. Murray** (2016). Does Patent Strategy Shape the Long-run Supply of Public Knowledge. In K.C. Liu, U. Racherla (Eds.), *Innovation and IPRs in China and India: Myths, Realities and Opportunities*, Chapter 4, Springer.
- M. Burstein and **F. Murray** (2016). Governing Innovation Prizes. *Harvard Journal of Law and Technology*. Vol 29 (2).
- F. Murray**, P. Aghion, M. Dewatripont, J. Kolev & S. Stern (2016). "Of Mice and Academics: The Role of Openness in Science". *American Economic Journal*. And NBER Working Paper #14819.
- J. Krieger, **F. Murray**, J. Roberts, R. Green. (2016). The Impact of Personal Genomics on Risk Perceptions & Medical Decision Making. *Nature Biotechnology*. Vol. 34(9), 912-918.
- P. Azoulay, J. Furman, J. Krieger and **F. Murray** (2015). Retractions. *RESTAT*, Vol.97(5): 1118-1136. And National Bureau of Economic Research Working Paper #18499.
- M. Bikard, J. Gans & **F. Murray** (2015). "Exploring Trade-offs in the Organization of Scientific Work: Collaboration and Scientific Reward". *Management Science* Vol.61 Issue 7, 1473-1495. And NBER Working Paper #18958.
- S. Kearney, **F. Murray** & M. Nordan (2014). A New Vision for Funding Science. *Stanford Social Innovation Review Fall 2014*.

- A. Brooks, L. Huang, S. Kearney and **F. Murray** (2014). Entrepreneurial Attraction: Investors Prefer Entrepreneurial Ventures Pitched By Attractive Men. *Proceedings of the National Academy of Science*.
- D. Fehder, **F. Murray** & S. Stern (2014). "Intellectual Property and Scientific Journals as Knowledge Platforms". *International Journal of Industrial Organization*. Prepared for the NBER Conference on Patents, Standards and Innovation.
- A. MacCormack, **F. Murray** & E. Wagner (2013). How Competition can Spark Innovation. *Sloan Management Review* Fall 2013.
- F. Murray**, S. Stern, G. Campbell & A. MacCormack (2012). "Grand Innovation Prizes: A Theoretical, Normative and Empirical Evaluation". *Research Policy*, 41(10):1779-1792.
- W. Ding, **F. Murray** & T. Stuart (2012). "From Bench to Board: Gender Differences in University Scientists' Participation in Commercial Science." *Academy of Management Journal (ACAD MANAGE J amj.2011.0020; published ahead of print October 9, 2012)* (As reviewed in Nature (2013) Bared from the Board Room).
- J. Furman, **F. Murray** & S. Stern (2012). "Growing Stem Cells: The Impact of U.S. Policy on the Organization of Scientific Research". *Journal of Policy Analysis and Management*.
- J. Furman, K. Jensen & F. Murray (2012). "Governing Knowledge Production in the Scientific Community: Quantifying the Impact of Retractions". *Research Policy*. 41:276– 290.
- F. Murray J. Gans & M. Craven (2011). "How Does the Republic of Science Shape the Patent System? Broadening the Institutional Analysis of Policy Levers for Innovation and Knowledge Disclosure," *UC Irvine Law Review*, Vol.1 No.2, 2011, pp.359-395.
- J. Furman, **F. Murray** and S. Stern (2011). "More for the Research Dollar". *Nature* Vol. 468: 475-478.
- Smith-Doerr, L., G. Kemekline, R. Teutonico, L. Lange, L. Villa-Komaroff & **F. Murray** (2011). A Global Need for Women's Leadership. *Nature Biotechnology* Vol 29:948-949.
- Aghion, P., Dewatripont, M., Kolev, J., **Murray, F.** and Stern, S. (2010) "The Public and Private Sectors in the Process of Innovation: Theory and Evidence from the Mouse Genetics Revolution." *American Economic Review (Papers & Proceedings)* 100(2), pp. 153-158.

- F. Murray** (2010). "The Oncomouse that Roared: Hybrid Exchange Strategies as a Source of Productive Tension at The Boundary Of Overlapping Institutions". *American Journal of Sociology*, Vol 116(2): 341-388.
- K. Huang & **F. Murray** (2010). "Entrepreneurial Experiments in Science Policy: Analyzing the Human Genome Project." *Research Policy*, Vol. 39:5, pp. 567-582.
- K. Huang & **F. Murray** (2009). "Does Patent Strategy Shape the Long-Run Supply of Public Knowledge: Evidence from Human Genetics." *Academy of Management Journal*, Vol. 52:6, pp. 1193-1221. (And *Academy of Management 2008 Best Paper Proceedings*)
- F. Murray** & S. O'Mahony (2007). "Exploring the Foundations of Cumulative Innovation: Implications for Organization Science." *Organization Science*, Vol. 18, pp. 1006-1021.
- F. Murray** & S. Stern (2007). "Do formal Intellectual Property Rights Hinder the Free Flow of Scientific Knowledge? *Journal of Economic Behavior and Organization*, Vol. 63:4, pp. 648-687. Reprinted in Critical Concepts in Intellectual Property Law: Intellectual Property and Biotechnology. Ed: Arti K. Rai, Elsevier Press.
- F. Murray** & L. Graham (2007). "Buying Science & Selling Science: Gender Stratification in Commercial Science." *Industrial and Corporate Change Special Issue on Technology Transfer*, Vol. 16:4, pp. 657-689.
- F. Murray** (2007). "The Stem Cell Market: Patents & the Pursuit of Scientific Progress." *New England Journal of Medicine*, Vol. 356:23, pp. 2341-2343.
- F. Murray** & D. Spar (2006). China and Stem Cell Research: Bit-Player or Powerhouse? *New England Journal of Medicine*, Vol. 355:12, pp. 1191-1194.
- W. Ding, **F. Murray** & T. Stuart (2006). "An Empirical Study of Gender Differences in Patenting among Academic Life Scientists." *Science*, Vol. 313, pp. 665-667.
- M. G. Edwards, **F. Murray**, and R. Yu (2006). "Gold in the Ivory Tower: Equity Rewards of Out-Licensing." *Nature Biotechnology*, Vol. 24(5), pp. 509-515.
- K. Jensen & **F. Murray** (2005). "The Intellectual Property Landscape of the Human Genome". *Science*, Vol. 310, 14 October 2005, pp. 239-240.
- F. Murray** (2004). "The Role of Academic Inventors in Entrepreneurial Firms: Sharing in the Laboratory Life." *Research Policy*, Vol. 33, Issue 4, pp. 643-659.
- L. Schiff & **F. Murray** (2004). "Biotechnology financing dilemmas and the role of special purpose entities." *Nature Biotechnology*, Vol. 22, (3) pp. 271-277.
- M. Edwards, **F. Murray** & R. Yu (2003). "Value creation and sharing among universities, biotechnology and pharma." *Nature Biotechnology*, Vol. 21, No. 6 pp.618-624.

**F. Murray** (2002). "Innovation as co-evolution of scientific and technological networks: exploring tissue engineering". *Research Policy*, Vol. 31, Issues 8-9 pp: 1389-1403.

#### CHAPTERS IN REFEREED BOOKS

J Furman, **F E Murray**, S Stern, H Williams. (2017). Standing on the Shoulders of Scotchmer: The Empirical Economics of Cumulative Innovation. In Standing on the Shoulders of Scotchmer. Cambridge University Press.

**F. Murray** & J. Kolev. (2014). "An Entrepreneurs Guide to the University" In Albert Link, Donald S. Siegel, and Mike Wright (eds). Handbook of University Technology Transfer, Chicago, IL: University of Chicago Press.

J. Gans & **F. Murray** (2014). "Credit History: The Changing Nature of Scientific Credit". *Prepared for the NBER Special Conference on The Changing Frontier: Rethinking Science and Innovation Policy*. In The Changing Frontier: Rethinking Science and Innovation Policy, Jaffe and Jones. 2014.

**F. Murray** (2012). "Evaluating the Role of Science Philanthropy in American Universities" in J. Lerner, and S. Stern, eds., Innovation Policy and the Economy, Vol. 13, pp. 23-59, University of Chicago Press for the National Bureau of Economic Research.

J. Gans & **F. Murray** (2012). "Funding Scientific Knowledge: Selection, Disclosure and the Public-Private Portfolio". Chapter 1 in *The Rate and Direction of Inventive Activity: A New Agenda*, University of Chicago Press.

**F. Murray** (2010). "Patenting Life: How the Oncomouse Patent Changed the Lives of Mice & Men" in Con/Texts of Invention: Creative Production in Legal and Cultural Perspective M. Biagioli, P. Jaszi, M. Woodmansee eds. University of Chicago Press.

**F. Murray** & S. Stern (2007). "When Ideas are Not Free: The Impact of Patenting on Academic Science" in A. Jaffe, J. Lerner, and S. Stern, eds., Innovation Policy and the Economy, Vol. 7, pp. 33-69, MIT Press for the National Bureau of Economic Research.

S. Casper & **F. Murray** (2004). "Examining the marketplace for ideas: How local are Europe's biotechnology clusters?" Chapter 12 in Economic Dynamics of Modern Biotechnology McKelvey et al (eds). Cheltenham, UK: Edward Elgar Publishing.

**F. Murray** & M. Tripsas (2004). "The Exploratory Processes of Entrepreneurial Firms: The role of purposeful experimentation." In J.A.C. Baum & A.M. McGahan, *Business Strategy over the Industry Life Cycle: Advances in Strategic Management*, 21. Oxford UK: JAI/Elsevier.

## WORKING PAPERS

Budden, P. & F. Murray “A systematic MIT approach for assessing ‘innovation-driven entrepreneurship’ in ecosystems (iEcosystems)” 2017. MITii Lab for Innovation Science/Policy working paper. Available to download at <https://innovation.mit.edu/documents-library/>.

Budden, P. & F. Murray “Kendall Square’s Innovation Ecosystem.” MIT Innovation Initiative Lab for Innovation Science and Policy Case Series. Available to download at <https://innovation.mit.edu/documents-library/>.

Budden, P. & F. Murray “The London Innovation Ecosystem: ‘Tech City’ and accelerating entrepreneurship.” MIT Innovation Initiative Lab for Innovation Science and Policy Case Series. Available to download at <https://innovation.mit.edu/documents-library/>.

Budden, P. & F. Murray “The Singapore Innovation Ecosystem.” MIT Innovation Initiative Lab for Innovation Science and Policy Case Series. Available to download at <https://innovation.mit.edu/documents-library/>.

Gans, Joshua S. and Murray, Fiona, Markets for Scientific Attribution (November 5, 2014). Rotman School of Management Working Paper No. 2519603. Available at SSRN: <http://ssrn.com/abstract=2519603> or <http://dx.doi.org/10.2139/ssrn.2519603>

B. Aulet and **F. Murray** (2013). A Tale of Two Entrepreneurs: Understanding Differences in the Types of Entrepreneurship in the Economy. Kauffman Foundation Working Paper.

V. Kuo, **F. Murray** & Y. Huang (2012). Standing on Chinese Shoulders: The Impact of Scientific Knowledge Produced in China”. *Working Paper*.

J. Gans, **F. Murray** & S. Stern (2011). Contracting Over the Disclosure of Scientific Knowledge: Intellectual Property Protection and Academic Publication”. Accessible at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1559871](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1559871)