

Zucker and Darby Major High Tech Publications December 2010

The following list of the most relevant publications includes research on biotech, nanotech, and, most recently, all technologies, and touches on three main themes, identified by associated numbers in parentheses after each publication: (1) Founding of new firms, focused on role of star scientists' intellectual human capital; (2) Success at the scientist, organization, and region/nation levels, focused on knowledge flows between other organizations (primarily universities) and firms; and (3) Financial success of firms and industries (new and pre-existing), focused on knowledge flows as in (2) above.

Lynne G. Zucker and Michael R. Darby, "Star Scientists, Innovation and Regional and National Immigration," in David B. Audretsch, Robert E. Litan, and Robert J. Strom, eds., *Entrepreneurship and Openness: Theory and Evidence*, volume 2 in the series *Industrial Dynamics, Entrepreneurship and Innovation*, Cheltenham, UK, and Northampton, MA: Edward Elgar, 2009. [ISBN 978 1 84720 779 1, pp. 181-211]
Available electronically as a 2008 NBER Working Paper at:
<http://www.nber.org/papers/w13547.pdf>

Christine Ogilvie Robichaud, Ali Emre Uyar, Michael R. Darby, Lynne G. Zucker, and Mark R. Wiesner, "Estimates of Upper Bounds and Trends in Nano-TiO₂ Production As a Basis for Exposure Assessment," *Environmental Science and Technology*, June 15, 2009, 43(12): 4227-4233. (1, used to estimate Nano-TiO₂ production increase over time)
[doi:10.1021/es8032549](https://doi.org/10.1021/es8032549)

Lynne G. Zucker and Michael R. Darby, "Virtuous Circles in Science and Commerce," *Papers in Regional Science*, August 2007, 86(3): 445-471. (3)
[doi:10.1111/j.1435-5957.2007.00133.x](https://doi.org/10.1111/j.1435-5957.2007.00133.x)

Lynne G. Zucker, Michael R. Darby, Jonathan Furner, Robert C. Liu, and Hongyan Ma, "Minerva Unbound: Knowledge Stocks, Knowledge Flows and New Knowledge Production," *Research Policy*, July 2007, 36(6): 850-863. (1, 2)
<http://dx.doi.org/10.1016/j.respol.2007.02.007>
or
http://www.sciencedirect.com/science?_ob=MIimg&_imagekey=B6V77-4NMCV0M-1-4&_cdi=5835&_user=4423&_pii=S0048733307000455&_origin=search&_zone=rslt_list_item&_coverDate=07%2F31%2F2007&_sk=999639993&wchp=dGLbVtz-zSkzV&md5=9352ce3632d12fea3a9d56f95d8ee519&ie=/sdarticle.pdf

Michael R. Darby and Lynne G. Zucker, "Grilichesian Breakthroughs: Inventions of Methods of Inventing in Nanotechnology and Biotechnology," *Annales d'Economie et Statistique*, July/December 2005, 79/80: 143-164. (1)
Available electronically as a 2003 NBER Working paper at:
<http://www.nber.org/papers/w9825.pdf>

Michael R. Darby, Qiao Liu, and Lynne G. Zucker, "High Stakes in High Technology: High-tech Market Values as Options." *Economic Inquiry*, July 2004, 42(3): 351-369. (2,3)
<http://www3.interscience.wiley.com/cgi-bin/fulltext/120806630/PDFSTART>

Michael R. Darby, Lynne G. Zucker, and Andrew Wang, "Joint Ventures, Universities, and Success in the Advanced Technology Program." *Contemporary Economic Policy*, April 2004, 22(2): 145-161. (2)
<http://cep.oupjournals.org/cgi/reprint/22/2/145.pdf>

Michael R. Darby and Lynne G. Zucker, "Growing by Leaps and Inches: Creative Destruction, Real Cost Reduction, and Inching Up." *Economic Inquiry*, January 2003, 41(1): 1-19. (1, 2)
<http://ei.oupjournals.org/cgi/reprint/41/1/1.pdf>

Lynne G. Zucker, Michael R. Darby, and Máximo Torero, "Labor Mobility from Academe to Commerce." *Journal of Labor Economics*, 2002, 20(3): 629-660. (2)
<http://www.jstor.org/stable/3653475>

Lynne G. Zucker, Michael R. Darby, and Jeff Armstrong, "Commercializing Knowledge: University Science, Knowledge Capture, and Firm Performance in Biotechnology." *Management Science*, January 2002, 48(1): 138-153. (2)
<http://pubsonline.informs.org/main/index.php?user=58459>

Lynne G. Zucker and Michael R. Darby, "Capturing Technological Opportunity Via Japan's Star Scientists: Evidence from Japanese Firms' Biotech Patents and Products." *Journal of Technology Transfer*, January 2001, 26(1/2): 37-58. (2)
<http://ipsapp008.lwwonline.com/content/getfile/4952/6/4/fulltext.pdf>

Lynne G. Zucker and Michael R. Darby, "Star Scientist Linkages to Firms in APEC and European Countries: Indicators of Regional Institutional Differences Affecting Competitive Advantage." *International Journal of Biotechnology*, 1 (no month) 1999: (2) 119-131. DOI: 10.1504/IJBT.1999.004479
<http://www.inderscience.com/browse/index.php?journalID=4&year=1999&vol=1&issue=1>

Lynne G. Zucker and Michael R. Darby, "Present at the Biotechnological Revolution: Transformation of Technical Identity for a Large Incumbent Pharmaceutical Firm." *Research Policy*, 1997, 26: 429-446. (2, 3)
<http://www.sciencedirect.com/>
http://www.sciencedirect.com/science?_ob=MImg&_imagekey=B6V77-3T7CJCN-3-2&_cdi=5835&_user=4423&_pii=S0048733397000176&_origin=search&_zone=rslt_list_item&_coverDate=12%2F31%2F1997&_sk=999739995&wchp=dGLbVtb-zSkzV&md5=12f43908bf58d4cd68dff5423a0a5024&ie=/sdarticle.pdf

Lynne G. Zucker, Michael R. Darby, and Marilyn B. Brewer, "Intellectual Human Capital and the Birth of U.S. Biotechnology Enterprises." *American Economic Review* 88 (March) 1998: 290-306. (1)
<http://www.jstor.org/stable/116831>

Lynne G. Zucker, Michael R. Darby, and Jeff Armstrong, "Geographically Localized Knowledge: Spillovers or Markets?" *Economic Inquiry*, 36 (January) 1998: 65-86. (2)
<http://www3.interscience.wiley.com/cgi-bin/fulltext/119940782/PDFSTART>

Lynne G. Zucker and Michael R. Darby, "Star Scientists and Institutional Transformation: Patterns of Invention and Innovation in the Formation of the Biotechnology Industry." *Proceedings of the National Academy of Sciences* 93 (November 12) 1996: 12709-12716. (1,2)
<http://www.pnas.org/cgi/content/full/93/23/12709> or
<http://www.jstor.org/stable/40685>

Julia Porter Liebeskind, Amalya Oliver, Lynne G. Zucker, and Marilyn B. Brewer, "Social Networks, Learning, and Flexibility: Sourcing Scientific Knowledge in New Biotechnology Firms." *Organization Science* 7 (July/August) 1996: 428-443. (2)
<http://www.jstor.org/stable/2635102>

California-specific policy relevant publications:

Michael R. Darby and Lynne G. Zucker, "Formation and Transformation of Industries: Nanotechnology," in California Council on Science and Technology" *Nanoscience and Nanotechnology: Opportunities and Challenges in California*, Sacramento, CA: California Council on Science and Technology, 2004. [pp. 27-44] (1, 2)
<http://www.ccst.us/ccst/pubs/nano/NanoReport.pdf>

Lynne G. Zucker and Michael R. Darby, *Universities and Colleges in California*, A Report Prepared for the California Council on Science and Technology, February 2002, Sacramento, CA: California Council on Science and Technology, 2002. [ISBN 1-930117-19-1] (1, 2 - Quality of higher education in California, comparative analysis)
http://www.ccst.us/cpa/download/CPA_3_DarbyZucker.pdf

Lynne G. Zucker and Michael R. Darby, *California's Inventive Activity: Patent Indicators of Quantity, Quality, and Organizational Origins*, A Report to the California Council on Science and Technology, October 11, 1999, Sacramento, CA: California Council on Science and Technology, 1999. [ISBN 1-930117-10-8] (1,2)
<http://www.ccst.us/crest/pubs/pireports/08zd.html>

Michael R. Darby and Lynne G. Zucker, *California's Science Base: Size, Quality and Productivity*, A Report to the California Council on Science and Technology, February 3, 1999, Sacramento, CA: California Council on Science and Technology, 1999. [ISBN 1-930117-08-6] (1,2)
<http://www.ccst.us/crest/pubs/pireports/09dz.html>