

## References

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- Abramowicz, M. (2003). Perfecting patent prizes. *Vanderbilt Law Review*, **56**(1), 114–236.
- Academy of Achievement. (1991). Paul MacCready Interview. Retrieved May 1, 2009, from <http://www.achievement.org/autodoc/page/mac0int-2>
- Aerospace Safety Advisory Panel (ASAP). (2011). ASAP Annual Report for 2010. Washington, DC: Aerospace Safety Advisory Panel.
- Amabile, T.M., DeJong, W., and Lepper, M.R. (1976). Effects of externally imposed deadlines on subsequent intrinsic motivation. *Journal of Personality and Social Psychology*, **34**(1), 92–8.
- Anastas, P.T., and Zimmerman, J.B. (2007). *Why We Need a Green Nano Award & How to Make it Happen*. Woodrow Wilson International Center for Scholars.
- Anton, J.J., and Yao, D.A. (1990). Measuring the effectiveness of competition in defense procurement: a survey of the empirical. *Journal of Policy Analysis & Management*, **9**(1), 60–79.
- Armadillo Aerospace. (2008). Engine Work, Methane Work, Selling Vehicles, Lynx. Retrieved June 22, 2010, from [http://armadilloaerospace.com/n.x/Armadillo/Home/News?news\\_id=357](http://armadilloaerospace.com/n.x/Armadillo/Home/News?news_id=357)
- Astrobotic Technology. (2010). Tranquility Trek. Retrieved December 12, 2010, from <http://astrobotic.net/activities/tranquility-trek/>
- Bacharach, S.B. (1989). Organizational theories: some criteria for evaluation. *Academy of Management Review*, **14**(4), 496–515.
- Bain, P.G., Mann, L., and Pirola-Merlo, A. (2001). The innovation imperative: the relationships between team climate, innovation, and performance in research and development teams. *Small Group Research*, **32**(1), 55–73.
- Baird, F., Moore, C.J., and Jagodzinski, A.P. (2000). An ethnographic study of engineering design teams at Rolls-Royce Aerospace. *Design Studies*, **21**(4), 333–55.
- Balint, T.S., Kolawa, E.A., Cutts, J.A., and Peterson, C.E. (2008). Extreme environment technologies for NASA's robotic planetary exploration. *Acta Astronautica*, **63**(1–4), 285–98.
- Belfiore, M. (2007). *Rocketeers. How a Visionary Band of Business*

- Leaders, Engineers, and Pilots is Boldly Privatizing Space*. New York, NY: HarperCollins Publishers.
- Best, J. (2008). Prize proliferation. *Sociological Forum*, **23**, 1–27.
- Bitten, R.E. (2008). Perspectives on NASA mission cost and schedule performance trends. Retrieved February 2, 2011, from [http://spirit.as.utexas.edu/~fiso/telecon/Bitten\\_7-02-08.pdf](http://spirit.as.utexas.edu/~fiso/telecon/Bitten_7-02-08.pdf)
- Bloomberg Businessweek. (2011). Astrobotic Technology, Inc.: Private Company Information. Retrieved February 23, 2011, from <http://investing.businessweek.com/research/stocks/private/snapshot.asp?privcapId=39444578>
- Boeing, Martin Marietta, General Dynamics, MacDonnell Douglas, Lockheed, & Rockwell. (1994). *Commercial Space Transport Study Final Report (CSTS)*. Sponsored by NASA's Langley Research Center.
- Bond, S., Harnoff, D., and Van Reenen, J. (1999). Investment, R&D and financial constraints in Britain and Germany. Working Paper Series, Institute For Fiscal Studies, **99**(5).
- Bonin, G. (2009). Microspace and human spaceflight. Retrieved February 2011, from <http://www.thespacereview.com/article/1441/1>
- Bower, J.L., and Christensen, C.M. (1995). Disruptive technologies: catching the wave. *Harvard Business Review*, **73**, 43–53.
- Boyle, A. (2004). 'Spaceship team gets its \$10 million prize.' Retrieved Feb 19, 2008, from <http://www.msnbc.msn.com/id/6421889/>
- Brabham, D.C. (2008). Crowdsourcing as a model for problem solving. *Convergence: The International Journal of Research into New Media Technologies*, **14**(1), 75–90.
- Braun, R.D. (2010). NASA Innovation and Technology Preliminary Planning. Retrieved February 2, 2011, from [http://www.spacepolicyonline.com/pages/images/stories/Braun\\_-\\_NASA\\_OCT\\_March\\_9\\_ASEB.pdf](http://www.spacepolicyonline.com/pages/images/stories/Braun_-_NASA_OCT_March_9_ASEB.pdf)
- Broda-Bahm, K.T. (1996). Counterfactual problems: addressing difficulties in the advocacy of counter-to-fact causal claims. *Contemporary Argumentation and Debate*, **17**, 19–31.
- Bromberg, J.L. (2000). *NASA and the Space Industry*. Baltimore and London: The Johns Hopkins University Press.
- Brown, P.J. (2010). India, Russia squeeze Google Moon racers. Retrieved February 2, 2011, from <http://www.atimes.com/atimes/China/LH12Ad03.html>
- Brunt, L., Lerner, J., and Nicholas, T. (2008). *Inducement Prizes and Innovation*. NBER.
- Bugos, G.E., and Boyd, J.W. (2008). Accelerating entrepreneurial space: the case for an NACA-style organization. *Space Policy*, **24**(3), 140–47.
- Bullinger, A.C., Neyer, A.-K., Rass, M., and Moeslein, K.M. (2010).

- Community-based innovation contests: where competition meets cooperation. *Creativity and Innovation Management*, **19**(3), 290–303.
- Byko, M. (2004). SpaceShipOne, the Ansari X Prize, and the materials of the civilian space race. *JOM*, **56**(11), 24–28.
- California Space Education and Workforce Institute. (2009). Regolith Excavation Challenge. Retrieved February 2, 2011, from <http://regolith.csewi.org/>
- Charlton, B.G. (2007). Mega-prizes in medicine: big cash awards may stimulate useful and rapid therapeutic innovation. *Medical Hypotheses*, **68**(1), 1–3.
- Che, Y.-K., and Gale, I. (2003). Optimal design of research contests. *American Economic Review*, **93**(3), 646–71.
- Chesbrough, H.W. (2003). *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Harvard Business Press.
- Chesbrough, H.W. (2006). *Open Business Models. How to Thrive in the New Innovation Landscape*. Boston, MA: Harvard Business School Press.
- Cisco. (2010). Cisco Announces Winner of Global I-Prize Innovation Competition. Retrieved September 19, 2010, from [http://newsroom.cisco.com/dlls/2010/prod\\_062910b.html](http://newsroom.cisco.com/dlls/2010/prod_062910b.html)
- Clark, R.E. (2003). Fostering the work motivation of individuals and teams. *Performance Improvement*, **42**(3), 21–9.
- Cohen, L.R., and Noll, R.G. (1991). *The Technology Pork Barrel*. Washington, DC: The Brookings Institution.
- Cohen, W.M., Nelson, R.R., and Walsh, J.P. (2000). Protecting their intellectual assets: appropriability conditions and why U.S. manufacturing firms patent (or not). NBER Working Paper No. w7552.
- Collins, P.Q., and Ashford, D.M. (1986). Potential economic implications of the development of space tourism. Presented at 37th IAF Congress. Innsbruck.
- Congressional Budget Office (CBO). (2004). A Budgetary Analysis of NASA's New Vision for Space Exploration.
- Congressional Budget Office (CBO). (2007). Federal Support for Research and Development.
- Copenhagen Suborbitals. (2011). Copenhagen Suborbitals. Retrieved February 2, 2011, from <http://www.copenhagensuborbitals.com/>
- Courtland, R. (2009). Contenders square up in battle of the lunar landers. Retrieved April 24, 2010, from <http://www.newscientist.com/article/dn18043-contenders-square-up-in-battle-of-the-lunar-landers.html>
- Creswell, J.W., and Plano Clark, V.L. (2007). *Designing and Conducting Mixed Methods Research*. Thousand Oaks: SAGE Publications.

- Cronin, M. (2011). Fly me to the moon. *The Daily*. Retrieved February 6, 2011, from <http://www.thedaily.com/page/2011/02/06/020611-news-lunar-mining-1of5/>
- Crosland, M., and Galvez, A. (1989). The emergence of research grants within the prize system of the French Academy of Sciences, 1795–1914. *Social Studies of Science*, **19**(1), 71–100.
- Cucit, L., Nosella, A., Petroni, G., and Verbano, C. (2004). Management and organizational models of the European Space Agencies: the results of an empirical study. *Technovation*, **24**(1), 1–15.
- Culver, L., Escudero, L., Grindle, A., Hamilton, M., and Sowell, J. (2007). Policies, incentives, and growth in the newspace industry. Working Paper.
- Daniel, W.W. (1975). Nonresponse in sociological surveys. A review of some methods for handling the problem. *Sociological Methods & Research*, **3**(3), 291–307.
- Danto, E.A. (2008). *Historical Research*. New York: Oxford University Press.
- DARPA. (2006). Report to Congress. DARPA Prize Authority. Fiscal Year 2005 report in accordance with 10 U.S.C. § 2374a: DARPA.
- DARPA. (2008). DARPA Urban Challenge. Fiscal Year 2007 Report.
- Dasgupta, P., and Stiglitz, J. (1980). Uncertainty, industrial structure, and the speed of R&D. *The Bell Journal of Economics*, **11**(1), 1–28.
- Davidian, K. (2005). Prize Competitions and NASA's Centennial Challenges Program, International Lunar Conference 2005: DMG Associates.
- Davidian, K. (2007). *Prizes, Prize Culture, and NASA's Centennial Challenges*. DMG Associates under contract to the National Aeronautics and Space Administration, Headquarters, Washington DC, USA 20546-0001.
- Davidian, K. (2010). Interview with Ken Davidian, Director of Research at the FAA Office of Commercial Space Transportation (AST), September 20, 2010.
- Davis, L., and Davis, J. (2004). How effective are prizes as incentives to innovation? Evidence from three 20th century contests. DRUID Summer Conference 2004. Elsinore, Denmark.
- Davis, L.N. (2002). Should we consider alternative incentives for basic research? Patents vs. prizes. *Industrial Dynamics of the New and Old Economy – Who Is Embracing Whom?* Copenhagen/Elsinore.
- de Laat, E.A.A. (1997). Patents or prizes: monopolistic R&D and asymmetric information. *International Journal of Industrial Organization*, **15**(3), 369–390.
- Diamandis, P. (2004). NASA contests and prizes: How can they help

- advance space exploration? US Congress, 108th Congress, House Committee on Science, 2nd Session. Retrieved February 4, 2010, from [http://commdocs.house.gov/committees/science/hsy94832.000/hsy94832\\_0.HTM](http://commdocs.house.gov/committees/science/hsy94832.000/hsy94832_0.HTM)
- Diamandis, P. (2008). Google Lunar X PRIZE – The BlastOff Story. Retrieved February 3, 2011, from <http://www.youtube.com/watch?v=KfA6hLj2j5U>.
- Diamandis, P. (2009). Using incentive prizes to drive creativity, innovation and breakthroughs. Retrieved in Fall 2009 from [http://ocw.mit.edu/courses/engineering-systems-division/esd-172j-x-prize-workshop-grand-challenges-in-energy-fall-2009/readings/MITESD\\_172JF09\\_Diamandis.pdf](http://ocw.mit.edu/courses/engineering-systems-division/esd-172j-x-prize-workshop-grand-challenges-in-energy-fall-2009/readings/MITESD_172JF09_Diamandis.pdf).
- Dillman, D.A. (2000). *Mail and Internet Surveys. The Tailored Design Method*. (2nd edn). New York: John Wiley & Sons, Inc.
- Discovery Channel. (2005). *Black Sky: The Race for Space & Winning the X-Prize*. 2 DVD Set.
- Dornheim, M.A. (2003). Can \$\$\$ buy time? *Aviation Week & Space Technology*, **158**(21), 56.
- Dosi, G., and Egidi, M. (1991). Substantive and procedural uncertainty. *Journal of Evolutionary Economics*. Springer Science & Business Media B.V.
- Eisenhardt, K.M. (1989). Building theories from case study research. *Academy of Management Review*. Academy of Management.
- English, J.F. (2005). *Prizes, Awards, and the Circulation of Cultural Value*. Cambridge, MA: Harvard University Press.
- Evadot. (2009). Evadot Podcast #4 – An Interview with Team FredNet. Retrieved February 2, 2011, from <http://evadot.com/2009/07/01/evadot-podcast-4-%E2%80%93-an-interview-with-team-frednet/>
- Fink, W., Dohm, J.M., Tarbell, M.A., Hare, T.M., and Baker, V.R. (2005). Next-generation robotic planetary reconnaissance missions: a paradigm shift. *Planetary and Space Science*, **53**(14–15), 1419–26.
- Fullerton, R.L., and McAfee, R.P. (1999). Auctioning entry into tournaments. *Journal of Political Economy*, **107**(3), 573–605.
- Futron Corporation. (2010a). *Commercial Lunar Transportation Study*. Market Assessment Summary.
- Futron Corporation. (2010b). Emerging commercial lunar activities: assessing market size and development. Presentation to the Google Lunar X Prize Summit. Isle of Man, UK.
- Gallini, N., and Scotchmer, S. (2001). *Intellectual Property: When Is It the Best Incentive System?* Berkeley: University of California.
- Gans, J.S., and Stern, S. (2010). Is there a market for ideas? *Industrial and Corporate Change*, **19**(3), 805–37.

- Garcia, R., and Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. *Journal of Product Innovation Management*, **19**(2), 110–32.
- Goldsmith, R. (2009). Team LunaTrex Talk to the Space Fellowship About Rockets, Rovers and GLXP Rules. Retrieved February 1, 2011, from <http://spacefellowship.com/news/art11617/team-lunatrex-talk-to-the-space-fellowship-about-rockets-rovers-and-glxp-rules.html>
- Google Lunar X Prize website (GLXP). (2009). GLXP Forum. Retrieved February 2, 2011, from <http://www.googlelunarxprize.org/lunar/forum-glxp>
- Google Lunar X Prize website (GLXP). (2010a). Isle of Man Summit: Rocket City Space Pioneers Presentation video. Retrieved January 15, 2011, from <http://www.googlelunarxprize.org/lunar/teams/rocket-city-space-pioneers/blog/isle-of-man-summit-rocket-city-space-pioneers-presentation>
- Google Lunar X Prize website (GLXP). (2010b). Synergy Moon. Retrieved February 2, 2011, from <http://www.googlelunarxprize.org/lunar/teams/synergy-moon>
- Google Lunar X Prize website (GLXP). (2011a). RoverX Development Has Been Started. Retrieved February 2, 2011, from <http://www.googlelunarxprize.org/lunar/teams/selene/blog/roverx-development-has-been-started>
- Google Lunar X Prize website (GLXP). (2011b). Update on TALARIS. Retrieved March 8, 2011, from <http://www.googlelunarxprize.org/lunar/teams/next-giant-leap/blog/update-on-talaris>
- Greason, J. (2010). Interview with Jeff Greason, XCOR, November 9, 2010.
- Green, J.R., and Scotchmer, S. (1995). On the division of profit in sequential innovation. *RAND Journal of Economics*, **26**, 20–33.
- Griffin, M.D. (2007). Letter to Dr. Peter H. Diamandis, Chairman and Chief Executive Officer, X PRIZE Foundation. Retrieved February 2, 2011, from [http://www.googlelunarxprize.org/files/downloads/lunar/nasa\\_letter.pdf](http://www.googlelunarxprize.org/files/downloads/lunar/nasa_letter.pdf)
- Grishagin, V.A., Sergeev, Y.D., and Silipo, D.B. (2001). Firms' R&D decisions under incomplete information. *European Journal of Operational Research*, **129**(2), 414–33.
- Gump, D.P. (1990). *Space Enterprise: Beyond NASA*. New York, NY: Praeger Publishers.
- Gupta, A.K., and Wilemon, D. (1990). Accelerating the development of technology-based new products. *California Management Review*, Winter, 24–44.
- Hall, B.H. (1992). Investment and research and development at the firm level: does the source of financing matter? NBER Working Paper Series, 4096.

- Hall, B.H. (2002). The financing of research and development. *Oxford Review of Economic Policy*, **18**(1), 35–51.
- Hawkins, D.F. (1975). Estimation of nonresponse bias. *Sociological Methods & Research*, **3**(4), 461–88.
- Himmelberg, C.P., and Petersen, B.C. (1994). R&D and internal finance: a panel study of small firms in high-tech industries. *Review of Economics & Statistics*, MIT Press.
- Homans, C. (2010). The wealth of constellations. *Washington Monthly* (May/June 2010), 18–26.
- Horrobin, D.F. (1986). Glittering prizes for research support. *Nature*, **324**, 221.
- Hsu, J. (2010). NASA plans new robot generation to explore moon, asteroids. Retrieved January 21, 2011, from <http://www.space.com/8157-nasa-plans-robot-generation-explore-moon-asteroids.html>.
- Hudgins, E.L. (ed.). (2002). *Space: The Free-market Frontier*. Washington, DC: Cato Institute.
- Hudson, F. (2008). Gravity is not the main obstacle for America's space business. Government is. Retrieved February 2, 2011, from [http://www.economist.com/node/11965352?story\\_id=11965352](http://www.economist.com/node/11965352?story_id=11965352).
- Hulsheger, U.R., Anderson, N., and Salgado, J.F. (2009). Team-level predictors of innovation at work: a comprehensive meta-analysis spanning three decades of research. *Journal of Applied Psychology*, **94**(5), 1128–45.
- Hutter, K., Hautz, J., Füller, J., Mueller, J., and Matzler, K. (2011). Communitition: the tension between competition and collaboration in community-based design contests. *Creativity and Innovation Management*, **20**(1), 3–21.
- iMARS. (2008). Preliminary Planning for an International Mars Sample Return Mission. Retrieved February 2, 2011, from [http://mepag.jpl.nasa.gov/reports/iMARS\\_FinalReport.pdf](http://mepag.jpl.nasa.gov/reports/iMARS_FinalReport.pdf)
- Indian Space Research Organization (ISRO). (2010). What is Chandrayaan-2. Retrieved February 2, 2011, from <http://www.chandrayaan-i.com/index.php/chandrayaan-2.html>
- Kalil, T. (2006). *Prizes for Technological Innovation*. Washington, DC: The Brookings Institution.
- Karau, S.J., and Kelly, J.R. (1992). The effects of time scarcity and time abundance on group-performance quality and interaction process. *Journal of Experimental Social Psychology*, **28**(6), 542–71.
- Kay, L. (2010). Notes from team visits and 4th annual GLXP Summit (Isle of Man, UK).
- Kay, L. (2011). Managing innovation prizes in government. IBM Center for the Business of Government.

- Kemp, K. (2007). *Destination Space. How Space Tourism Is Making Science Fiction A Reality*. London: Virgin Books.
- Kessler, E.H., and Chakrabarti, A.K. (1999). Speeding up the pace of new product development. *Journal of Product Innovation Management*, **16**(3), 231–47.
- Kessner, T. (2010). *The Flight of the Century: Charles Lindbergh and the Rise Of American Aviation*. Oxford: Oxford University Press.
- Kieff, S.F. (2001). Property rights and property rules for commercializing inventions. *Minnesota Law Review*, **85**, 697–754.
- Kleemann, F., Voß, G.G., and Rieder, K. (2008). Un(der)paid innovators: the commercial utilization of consumer work through crowdsourcing. *Science, Technology & Innovation Studies*, **4**(1), July.
- Kleiman, M.J. (2010). Licensing intellectual property rights out of this world. Retrieved January 21, 2011, from <http://www.spacenews.com/commentaries/100901-blog-licensing-intellectual-property-rights.html>
- Knowledge Ecology International (KEI). (2008). Selected Innovation Prizes and Reward Programs. Retrieved February 5, 2011, from [http://keionline.org/misc-docs/research\\_notes/kei\\_rn\\_2008\\_1.pdf](http://keionline.org/misc-docs/research_notes/kei_rn_2008_1.pdf)
- Kolodny, L. (2011). Move over, Rover: next giant leap gets \$1 million grant to build hopping moon landers. Retrieved January 21, 2011, from <http://techcrunch.com/2011/01/21/next-giant-leap-gets-1-million-grant-to-build-hopping-moon-landers/>
- Kranz, G. (2000). *Failure Is Not An Option*. New York: Simon & Schuster.
- Kremer, M. (1998). Patent buyouts: a mechanism for encouraging innovation. *Quarterly Journal of Economics*, **113**(4), 1137–67.
- Kremer, M. (2000). Creating markets for new vaccines. Part I: Rationale. NBER Working Paper: National Bureau of Economic Research.
- Levin, R.C., Klevorick, A.K., Nelson, R.R., Winter, S.G., Gilbert, R., and Griliches, Z. (1987). Appropriating the returns from industrial research and development. *Brookings Papers on Economic Activity*, **1987**(3), 783–831.
- Linehan, D. (2008). *SpaceShipOne. An Illustrated History*. Minneapolis, MN: Zenith Press.
- Locke, E.A., and Latham, G.P. (1990). *A Theory of Goal Setting and Task Performance*. New Jersey: Prentice-Hall.
- LunaCorp. (1996). Payfor – LunaCorp. Retrieved February 1, 2011, from <http://web.archive.org/web/199611092200440/www.lunacorp.com/payfor.html>
- Macauley, M.K. (2005). Advantages and disadvantages of prizes in a portfolio of financial incentives for space activities. *Space Policy*, **21**(2), 121–8.
- MacDonald, A., and Marshall, W.S. (2008). The common spacecraft bus



- and lunar commercialization. Retrieved February 2, 2011, from <http://commercialspace.pbworks.com/f/Public+HTV.pdf>
- MacLeod, R.M. (1971). Of medals and men: a reward system in Victorian science, 1826–1914. *Notes and Records of the Royal Society of London*, **26**(1), 81–105.
- Mankins, J.C. (1995). Technology readiness levels. NASA Office of Space Access and Technology.
- Mansfield, E. (1988). The speed and cost of industrial innovation in Japan and the United States – external vs internal technology. *Management Science*, **34**(10), 1157–68.
- Marsh, G. (2011). Interview with George Marsh, Retired Lockheed Martin Space Systems Co. Executive Vice President, January 19, 2011.
- Marshall, W.S., Turner, M.F., Butler, P.H., and Weston, A.R. (2007). Small spacecraft in support of the lunar exploration program. A study effort of the Small Spacecraft Office, NASA-Ames Research Center, Moffett Field, California, 94035, USA.
- Maryniak, G. (2005). When will we see a golden age of spaceflight? *Space Policy*, **21**, 111–19.
- Maryniak, G. (2010). Interview with Gregg Maryniak, X Prize Foundation, October 27, 2010.
- Masten Space Systems. (2009). Masten Space Systems Qualifies for \$1 Million Prize. Retrieved March 4, 2010, from <http://masten-space.com/blog/?p=485>
- Masten Space Systems. (2010). Personnel Updates. Retrieved February, 2011, from <http://masten-space.com/2010/09/10/personnel-updates/>
- Masters, W.A. (2003). Research prizes: a mechanism to reward agricultural innovation in low-income regions. *AgBioForum*, **6**(1&2), 71–4.
- Masters, W.A., and Delbecq, B. (2008). Accelerating innovation with prize rewards: history and typology of technology prizes and a new contest design for innovation in African agriculture. *IPRI Conference on Advancing Agriculture in Developing Countries*. Addis Ababa.
- Maurer, S.M., and Scotchmer, S. (2004). Procuring knowledge. In G. Libecap (ed.), *Intellectual Property and Entrepreneurship: Advances in the Study of Entrepreneurship, Innovation and Growth* (Vol. 15). The Netherlands: JAI Press (Elsevier), pp. 1–31.
- Maxwell, J.A., and Miller, B.A. (2008). Categorizing and connecting strategies in qualitative data analysis. In S. Hesse-Biber and P. Leavy (eds), *The Handbook of Emergent Methods*. New York and London: The Guildford Press.
- McCurdy, H.E. (1994). *Inside NASA. High Technology and Organizational Change in the U.S. Space Program*. Baltimore and London: The Johns Hopkins University Press.

- McDowell, W.H. (2002). *Historical Research. A Guide*. London: Pearson Education Limited.
- McKinsey & Company. (2009). "And the winner is..." *Capturing the promise of philanthropic prizes*.
- Merton, R.K. (1973). *The Sociology of Science. Theoretical and Empirical Investigations*. Chicago: The University of Chicago Press.
- Miles, M.B., and Huberman, A.M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*. Thousand Oaks, CA: SAGE Publications.
- Mokyr, J. (2009). Intellectual property rights, the Industrial Revolution, and the beginnings of modern economic growth. *American Economic Review: Papers & Proceedings*, **99**(2), 349–55.
- Moldovanu, B., and Sela, A. (2001). The optimal allocation of prizes in contests. *American Economic Review*, **91**(3), 542–58.
- Morring, F. (2009). Masten building on X-Prize. Retrieved February 23, 2010, from <http://www.aviationweek.com/aw/generic/story.jsp?id=news/xprize110909.xml&headline=Masten%20Building%20On%20X-Prize%20&channel=space>
- Mowery, D.C., Nelson, R.R., and Martin, B.R. (2010). Technology policy and global warming: why new policy models are needed (or why putting new wine in old bottles won't work). *Research Policy*, **39**(8), 1011–23.
- MSNBC.com. (2007). NASA Extends Mars Rovers' Mission. Retrieved February 2011, from <http://www.msnbc.msn.com/id/21327647/>
- Nalebuff, B.J., and Stiglitz, J.E. (1983). Prizes and incentives: towards a general theory of compensation and competition. *The Bell Journal of Economics*, **14**(1), 21–43.
- NASA. (1997). *Rangers and Surveyors to the Moon*. Pasadena, CA: NASA Jet Propulsion Laboratory.
- NASA. (2009a). Lunar Lander Challenge. Retrieved January 27, 2010, from [http://www.nasa.gov/offices/ipp/innovation\\_incubator/centennial\\_challenges/lunar\\_lander/index.html](http://www.nasa.gov/offices/ipp/innovation_incubator/centennial_challenges/lunar_lander/index.html)
- NASA. (2009b). Mars Exploration Rover Mission: Overview. Retrieved February 2, 2011, from <http://marsrovers.jpl.nasa.gov/overview/>
- NASA. (2009c). Masten and Armadillo Claim Lunar Lander Prizes. Retrieved March 10, 2010, from [http://www.nasa.gov/offices/ipp/innovation\\_incubator/centennial\\_challenges/cc\\_ll\\_feature\\_lv12.html](http://www.nasa.gov/offices/ipp/innovation_incubator/centennial_challenges/cc_ll_feature_lv12.html)
- NASA. (2010a). CCDev Information. Retrieved February 2, 2011, from [http://www.nasa.gov/offices/c3po/partners/ccdev\\_info.html](http://www.nasa.gov/offices/c3po/partners/ccdev_info.html)
- NASA. (2010b). Fiscal Year 2011 Budget Estimates. Retrieved February 2, 2011, from [http://www.nasa.gov/pdf/420990main\\_FY\\_201\\_%20Budget\\_Overview\\_1\\_Feb\\_2010.pdf](http://www.nasa.gov/pdf/420990main_FY_201_%20Budget_Overview_1_Feb_2010.pdf)
- NASA. (2010c). Mars Sample Return Discussions. Retrieved February

- 2, 2011, from <http://www.spacepolicyonline.com/pages/images/stories/PSDS%20Steering%20Cmte%20Feb%202010%20Li-Hayati.pdf>
- NASA. (2010d). NASA Awards Contracts For Innovative Lunar Demonstrations Data. Retrieved February 2, 2011, from [http://www.nasa.gov/home/hqnews/2010/oct/HQ\\_10-259\\_ILDD\\_Award.html](http://www.nasa.gov/home/hqnews/2010/oct/HQ_10-259_ILDD_Award.html)
- NASA. (2010e). NASA Selects Two Firms for Experimental Space Vehicle Test Flights. Retrieved August 30, 2010, from [http://www.nasa.gov/home/hqnews/2010/aug/HQ\\_10-203\\_CRuSR\\_Awards.html](http://www.nasa.gov/home/hqnews/2010/aug/HQ_10-203_CRuSR_Awards.html)
- NASA. (2010f). Solar System Exploration: Missions: By Target: Mars: Past: Mars Pathfinder/Sojourner. Retrieved February 2, 2011, from <http://solarsystem.nasa.gov/missions/profile.cfm?MCode=Pathfinder&Display=ReadMore>
- NASA. (2010g). Surveyor 7. Retrieved February 2, 2011, from <http://nssdc.gsfc.nasa.gov/nmc/spacecraftDisplay.do?id=1968-001A>
- NASA. (2011). NASA – Space Technology Roadmaps (DRAFT). Retrieved February 2, 2011, from <http://www.nasa.gov/offices/oct/home/roadmaps/index.html>
- NASA. (2012). NASA SBIR & STTR: First Time Participant. Retrieved January 13, 2012, from <http://sbir.gsfc.nasa.gov/SBIR/ftp.html>
- National Academy of Engineering (NAE). (1999). *Concerning Federally Sponsored Inducement Prizes in Engineering and Science*. Washington, DC: National Academy of Engineering.
- National Research Council (NRC). (2007). *Innovation Inducement Prizes At The National Science Foundation* (No. 0-309-10465-3). Washington, DC: The National Academies Press.
- National Research Council (NRC). (2008). *A Constrained Space Exploration Technology Program: A Review of NASA's Exploration Technology Development Program*. Washington, DC.
- Newell, R.G., and Wilson, N.E. (2005). Technology prizes for climate change mitigation, Discussion Paper. Washington, DC: Resources For The Future.
- Northrop Grumman. (2007). Northrop Grumman Helps NASA Shape Plans for Affordable Lunar Lander. Retrieved March 3, 2010, from [http://www.irconnect.com/noc/press/pages/news\\_releases.html?d=122412](http://www.irconnect.com/noc/press/pages/news_releases.html?d=122412)
- O'Sullivan, A. (2003). Dispersed collaboration in a multi-firm, multi-team product-development project. *Journal of Engineering and Technology Management*, **20**(1–2), 93–116.
- O'Sullivan, M.A. (2009). Funding new industries: a historical perspective on the financing role of the U.S. stock market in the twentieth century. In N.R. Lamoreaux and K.L. Sokoloff (eds), *Financing Innovation in the United States, 1870 to the Present*. Cambridge, MA: The MIT Press.

- Odyssey Moon. (2008). Preparing for Moon 2.0. Retrieved October 29, 2010, from <http://www.lpi.usra.edu/meetings/leagilewg2008/presentations/YLE/richards.pdf>
- OECD/Eurostat. (1997). *Proposed Guidelines for Collecting and Interpreting Technological Innovation Data – Oslo Manual*. Paris: OECD.
- Parabolic Arc. (2010). NASA SBIR Program Funds Mars Sample Return Technologies. Retrieved February 1, 2011, from <http://www.parabolicarc.com/2010/12/30/nasa-sbir-program-funds-mars-sample-return-technologies/>
- Part Time Scientists (PTS). (2011a). Part-Time-Scientists. Retrieved March 3, 2011, from <http://www.part-time-scientists.com/>
- Part Time Scientists (PTS). (2011b). Third Fan Friday. Retrieved January 28, 2011, from <http://www.part-time-scientists.com/2011/01/28/third-fan-friday/>
- Pedersen, L., Kortenkamp, D., Wettergreen, D., Nourbakhsh, I., and Smith, T. (2002). *NASA Exploration Team (NEXT) Space Robotics Technology Assessment Report*. Moffett Field, CA: NASA.
- Penin, J. (2005). Patents versus ex post rewards: a new look. *Research Policy*, **34**, 641–56.
- Petroni, G., Venturini, K., Verbano, C., and Cantarello, S. (2009). Discovering the basic strategic orientation of big space agencies. *Space Policy*, **25**(1), 45–62.
- Polanyi, M. (1944). Patent reform. *The Review of Economic Studies*, **11**(2), 61–76.
- Pomerantz, W. (2006). Advancements through prizes. NIAC Annual Meeting.
- Pomerantz, W. (2007). NGLLC: early returns. Retrieved February 1, 2010, from <http://www.xprize.org/blogs/wpomerantz/ngllc-early-returns>
- Pomerantz, W. (2010a). Interview with William Pomerantz, Senior Director of Space Prizes, X Prize Foundation, September 17, 2010.
- Pomerantz, W. (2010b). Lessons from NASA's centennial challenges. Retrieved May 28, 2010, from <http://thelaunchpad.xprize.org/2010/03/lessons-from-nasas-centennial.html>
- Pomerantz, W. (2011a). E-mail communication.
- Pomerantz, W. (2011b). Will Pomerantz: a final Q&A. Retrieved February 22, 2011, from <http://thelaunchpad.xprize.org/2011/02/will-pomerantz-final-q.html>
- Poniatowski, K.S., and Osmolovsky, M.G. (1995). Capabilities, costs, and constraints of space transportation for planetary missions. *Acta Astronautica*, **35**(Supplement 1), 587–96.
- Reichhardt, T. (2008). Finding Apollo. Retrieved February 2, 2011, from [http://www.airspacemag.com/space-exploration/Finding\\_Apollo.html](http://www.airspacemag.com/space-exploration/Finding_Apollo.html)

- Ridenoure, R., and Polk, K. (1999). Private, commercial and student-oriented low-cost deep-space missions: a global survey of activity. *Acta Astronautica*, **45**(4–9), 449–56.
- Roese, N.J., and Olson, J.M. (1995). Counterfactual thinking: a critical overview. In N.J. Roese and J.M. Olson (eds), *What Might Have Been: The Social Psychology Of Counterfactual Thinking*. Mahwah, NJ: Erlbaum.
- Rogerson, W.P. (1989). Profit regulation of defense contractors and prizes for innovation. *The Journal of Political Economy*, **97**(6), 1284–1305.
- Rogerson, W.P. (1994). Economic incentives and the defense procurement process. *Journal of Economic Perspectives*, **8**(4), 65–90.
- Rosen, S. (1986). Prizes and incentives in elimination tournaments. *American Economic Review*, **76**(4), 701.
- Ryan, R.M., and Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, **55**(1), 68–78.
- Saar, J. (2006). *Prizes: The Neglected Innovation Incentive*. Lund University.
- Saldaña, J. (2009). *The Coding Manual for Qualitative Researchers*. Thousand Oaks: SAGE Publications Ltd.
- Samuelson, W. (1986). Bidding for contracts. *Management Science*, **32**, 1533–50.
- Sausser, B.J., Shenhar, A.J., and Hoffman, E.J. (2005). Identifying differences in space programs. In T.R. Anderson, T.U. Daim, D.F. Kocaoglu, D.Z. Milosevic, and C.M. Weber (eds), *Technology Management: A Unifying Discipline*. Piscataway, NJ: IEEE Press, pp. 392–402.
- Schroeder, A. (2004). *The Application and Administration of Inducement Prizes in Technology*. Golden, Colorado: Independence Institute.
- Schrunk, D., Sharpe, B., Cooper, B., and Thangavelu, M. (2008). *The Moon. Resources, Future Development, and Settlement*. Berlin: Springer.
- Scotchmer, S. (1999). On the optimality of the patent renewal system. *Rand Journal of Economics*, **30**, 181–96.
- Scotchmer, S. (2005). *Innovation and Incentives*. Cambridge, MA: MIT Press.
- Seeni, A., Schafer, B., and Hirzinger, G. (2010). Robot mobility systems for planetary surface exploration – state of the art and future outlook: a literature survey. In T.T. Arif (ed.), *Aerospace Technologies Advancements*. Croatia: INTECH.
- Shavell, S., and van Ypersele, T. (1999). Rewards versus intellectual property rights. National Bureau of Economic Research (NBER), Working Paper 6956.

- Sidney, S. (1862). On the effect of prizes on manufactures. *Journal of the Society of Arts*, **25**(1), 1–52.
- Sobel, D. (1996). *Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time*. New York: Penguin.
- SpaceRef.com. (2008). Rocket Racing Inc., Armadillo Aerospace and New Mexico Create Joint Venture to Launch Private Suborbital Space Transportation Business. Retrieved March 4, 2010, from <http://www.spaceref.com/news/viewpr.html?pid=26813>
- SpaceX. (2011a). Space Exploration Technologies Corporation – Falcon 1. Retrieved February 2, 2011, from <http://www.spacex.com/falcon1.php>
- SpaceX. (2011b). Space Exploration Technologies Corporation – Falcon 9. Retrieved February 2, 2011, from <http://www.spacex.com/falcon9.php>
- Spear, A.J. (1995). Low cost approach to Mars Pathfinder and small landers. *Acta Astronautica*, **35**(Supplement 1), 345–54.
- Steiner, C.J. (1995). A philosophy for innovation: the role of unconventional individuals in innovation success, *Journal of Product Innovation Management*. Blackwell Publishing Limited.
- Stine, D.D. (2009). Federally funded innovation inducement prizes. Congressional Research Service.
- Surrey Satellite Technology (SSTL). (2011). ‘Smartphone Satellite’ Developed by Surrey Space Researchers. Retrieved February 2, 2011, from <http://www.sstl.co.uk/news-and-events?story=1706>
- Swink, M., Talluri, S., and Pandejpong, T. (2006). Faster, better, cheaper: a study of NPD project efficiency and performance tradeoffs. *Journal of Operations Management*, **24**(5), 542–62.
- Tachikawa, K. (2007). Letter to Dr. Peter H. Diamandis, Chairman and Chief Executive Officer, X PRIZE Foundation. Retrieved February 2, 2011, from [http://www.googlelunarprize.org/files/downloads/lunar/jaxa\\_letter.pdf](http://www.googlelunarprize.org/files/downloads/lunar/jaxa_letter.pdf)
- Taylor, C.R. (1995). Digging for golden carrots: an analysis of research tournaments. *American Economic Review*, **85**(4), 872–90.
- Team Phoenicia. (2011). How Are You Going To Fund Your GLXP Entry? Retrieved February 24, 2011, from <http://www.googlelunarprize.org/lunar/teams/team-phoenicia/blog/how-are-you-going-to-fund-your-glxp-entry>
- TrueZer0. (2008). TrueZer0. Retrieved June 20, 2010, from <http://www.truezer0.com/>
- Vat, K.H. (2003). Toward an actionable framework of knowledge synthesis in the pursuit of learning organization. Paper presented at the Informing Science InSITE.

- von Hippel, E. (1976). The dominant role of users in the scientific instrument innovation process. *Research Policy*, **5**(3), 212–39.
- von Hippel, E. (1977). The dominant role of the user in semiconductor and electronic subassembly process innovation. *IEEE Transactions on Engineering Management*, EM-24(2), 60–71.
- von Hippel, E. (1982). Appropriability of innovation benefit as a predictor of the source of innovation. *Research Policy*, **11**(2).
- von Hippel, E. (1988). *The Sources of Innovation*. New York: Oxford University Press.
- Vorder Bruegge, R.W. (1995). IAA International Conference on Low-Cost Planetary Missions April 12–15, 1994 Conference summary report. *Acta Astronautica*, **35**(Supplement 1), 771–8.
- Waller, M.J., Conte, J.M., Gibson, C.B., and Carpenter, M.A. (2001). The effect of individual perceptions of deadlines on team performance. *Academy of Management Review*, **26**, 586–600.
- Wei, M. (2007). *Should Prizes Replace Patents? A Critique of the Medical Innovation Prize Act of 2005*. SSRN.
- Werner, D. (2010). 1-year deadline extension proposed for Google Lunar X Prize. Retrieved April 14, 2010, from <http://spacenews.com/civil/100412-deadline-extension-google-lunar-prize.html>
- Whitaker, N. (2010). Interview with Norman Whitaker, DARPA Transformational Convergence Technology Office (TCTO), September 13, 2010.
- White Label Space. (2010). PCB Design for Engine Throttle Controller. Retrieved February 20, 2011, from <http://www.whitelabelspace.com/2010/05/pcb-design-for-engine-throttle.html>
- Williams, H. (2010). Incentives, prizes, and innovation. MIT and NBER (draft).
- Wright, B.D. (1983). The economics of invention incentives: patents, prizes, and research contracts. *American Economic Review*, **73**(4), 691.
- X Prize Foundation (XPF). (2004). Ansari X Prize. Retrieved February 4, 2010, from <http://space.xprize.org/ansari-x-prize>
- X Prize Foundation (XPF). (2007). Armadillo Aerospace Nearly Wins Northrop Grumman Lunar Lander Challenge. Retrieved February 1, 2010, from <http://www.xprize.org/llc/press-release/armadillo-aerospace-nearly-wins-northrop-grumman-lunar-lander-challenge>
- X Prize Foundation (XPF). (2008a). Google Lunar X Prize Q & A. Retrieved February 1, 2011, from <http://www.googlelunarxprize.org/lunar/media-center/faq>
- X Prize Foundation (XPF). (2008b). Google Lunar X PRIZE Tech Talk: Will Pomerantz (Part 3 of 5). Retrieved February 2, 2011, from <http://www.youtube.com/watch?v=SoPCyVkJrSM>

- X Prize Foundation (XPF). (2009). Google Lunar X PRIZE Panel at NewSpace 2009 (3 of 7). Retrieved February 2, 2011, from <http://www.youtube.com/watch?v=ObjPANo30MI>
- X Prize Foundation (XPF). (2010). Team ARCA: From Ansari to the Google Lunar X Prize. Retrieved February 2, 2011, from <http://www.youtube.com/watch?v=2WZfHkVc5gw>
- X Prize Foundation (XPF). (2011a). The Launch Pad: Was there ever something planned with the GLXP to do that was not done but would have significantly altered it from what it now is? Did the GLXP become what it was intended to be? Retrieved February 18, 2011, from <http://thelaunchpad.xprize.org/2011/02/was-there-ever-something-planned-with.html>.
- X Prize Foundation (XPF). (2011b). Prize Development. Retrieved February 2, 2011, from <http://www.xprize.org/prize-development>
- Yin, R.K. (2003). *Case Study Research*. Thousand Oaks: SAGE Publications.
- Zakrajsek, J.J., McKissock, D.B., Woytach, J.M., Zakrajsek, J.F., Oswald, F.B., McEntire, K.J., et al. (2005). *Exploration Rover Concepts and Development Challenges*. Cleveland, Ohio: NASA – Glenn Research Center.



