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Maximizing the Return from Genome Research*

Thomas G. Field, Jr.**

Only fourteen years ago, the U.S. Supreme Court was asked to find the fruits of genetic research unpatentable:¹

...The briefs present a gruesome parade of horrors. Scientists, among them Nobel laureates, are quoted suggesting that genetic research may pose a serious threat to the human race.... We are told that genetic research... may spread pollution and disease, ...result in a loss of genetic diversity, and... tend to depreciate the value of human life. These arguments are forcefully, even passionately, presented; they remind us that, at times, human ingenuity seems unable to control fully the forces it creates — that with Hamlet, it is sometimes better “to bear those ills we have than fly to others that we know not of.”

The Court concluded that such arguments were best addressed to Congress. Congressional failure to take the action urged upon the Court, coupled with major support for the human genome project,

* Earlier versions of most papers appearing here were presented at a July 1993 conference. Gianna Julian-Arnold, J.D., M.I.P., then a Research Fellow at Franklin Pierce Law Center (FPLC), played a critical role in organizing it. Also, the Department of Energy played a critical role in covering, e.g., the expenses of several speakers. Also, with regard to this symposium, Timothy S. Odykirk, J.D., and others named on the inside front cover made important contributions.

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¹ *Diamond v. Chakrabarty* 447 U.S. 303, 315 (1980). See also, *Animal Legal Defense Fund v. Quigg*, 18 U.S.P.Q.2d 1677 (Fed. Cir. 1991).

Risk has reviewed books raising similar issues. See, e.g., Sheldon Krinsky *Biotechnology and Society...*, (1991), reviewed 3 Risk 185 (1992); *The Code of Codes: Scientific and Social Issues in the Human Genome Project*, (Daniel J. Kevles and Leroy Hood eds. 1992), reviewed 3 Risk 261 (1993) and Elaine Draper, *Risky Business: Genetic Testing and Exclusionary Practices in the Hazardous Workplace* (1991), reviewed 3 Risk 267 (1993).

seems to indicate, e.g., belief that potential benefits outweigh potential hazards and that inappropriate uses of genetic technology can be foreclosed as they arise.² The last is buttressed by considering, e.g., that, as copyrights do not permit sale of obscene books, patents do not permit illegal uses of inventions — nor is one engaged in forbidden types of research apt to admit it in a patent application. Thus, these papers reflect a shift to R&D policy management to achieve positive health, safety and environmental objectives.

As Dr. Cook-Deegan notes in the lead article,³ we lack knowledge that may be necessary to fine tune the intellectual property system.⁴ Yet, these papers may make some things clearer to people unfamiliar with intellectual property or private and public technology transfer, e.g., that private firms will not invest in R&D, or anything else, without confidence of being able to recoup their investments when they succeed. The symposium should therefore be useful in other attempts to fashion public incentives for private firms to contribute to reducing the risks of natural and artificial hazards.⁵



² Those interested in more integration of ethical and intellectual property issues should consider *The Genetic Frontier: Ethics, Law and Policy* (Mark S. Frankel & Albert Teich, eds. 1994) — a 259 pp. paperback published by AAA Press in January (\$22.95) — also containing papers by Dr. Cook-Deegan and Dr. Murashige.

³ *Infra*, at 118.

⁴ See generally, *Industrial Innovation: Joint Hearings Before the Senate Comm. on Commerce, Science and Transportation, and Select Comm. on Small Business, and House Comms. on Science and Technology, and Small Business*, 96th Cong., 1st Sess., Parts 1 and 2 (1979). As part of a lively exchange, Dr. Frank Press stated, “For 25 years the question of innovation and Americans’ ability to innovate has been... around; it’s been studied to death.” Part 1, at 40. This suggests too much; see, e.g., J. G. Tewksbury et al., *Measuring the Societal Benefits of Innovation*, 209 *Science* 658 (1980) “A sample which was as representative as possible... would have been desirable.... [I]nformation... was so difficult to obtain that availability of data became dominant in the selection of cases.”

⁵ For example, just before these papers went to press, *The Greening of Technology Transfer...*, another FPLC conference considered how best to use intellectual property and technology transfer in global pursuit of biodiversity and environmental goals.