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## Commission on Research Integrity Report Sparks Debate on Science and Ethics

By Kenneth J. Ryan

[The November 1995 report of the Commission on Research Integrity has generated considerable debate within the scientific and science policy communities. PER asked the Commission's Chair, Dr. Kenneth J. Ryan, to respond to many of the criticisms and to clarify the Commission's position on a number of issues. Readers are invited to submit responses to his essay for possible publication in the next issue. - Ed.]

In the 1993 NIH Revitalization Act the Congress called for the creation of a Commission on Research Integrity (CRI) to address the continuing failure of scientific institutions and the PHS to deal adequately with research misconduct and the protection of whistleblowers who often are subject to retaliation even when they came forward in good faith with well founded claims. The Commission, consisting of twelve appointees with the diverse backgrounds in science, law, university administration, social sciences and ethics held public hearings in the Washington, D.C. area and at Universities in California, Illinois, Alabama and Massachusetts over a fifteen month period. The Commission's mandate was to make recommendations on: a definition for research misconduct, an assurance process for institutional compliance with federal regulations, administrative processes for both academic institutions and the Public Health Service to use in dealing with misconduct, and the development of regulations to protect whistleblowers.

The CRI report *Integrity and Misconduct in Research* was sent to the Secretary of Health and Human Services and Congressional oversight committees on November 3, 1995, but two government shut-downs and last winter's paralyzing snow storms delayed wide release until the beginning of 1996. However, the suddenness and polarization of the highly charged commentary on the report when it was finally distributed seemed to compensate adequately for any delay in its dissemination. The judgments on the CRI report ranged from a quote of the editor of *Lancet* that it was "a superb piece of analysis about the impact of misconduct on the scientific community" to a characterization of the report by the president of the Federation of American Societies of Experimental Biology (FASEB) as "an attack on American science."<sup>1</sup> A subsequent editorial in *Science* warned that the CRI appeal to a principle that scientists be truthful and fair in the conduct of research and the dissemination of research results might interfere with scientific creativity because it didn't account for the inherent ambiguity in scientific practice.<sup>2</sup> At the very least, one hoped for response to the report may be realized: getting the attention of the scientific community and provoking a wider debate than previous reports or Congressional hearings had thus far been able to achieve. The first Congressional hearings on misconduct occurred in 1981, and in the early 1990's, the issues were still being revisited by John Dingell's Committee on Energy and Commerce. There have been several reports on research misconduct from the National Academy complex, the most recent by an NAS panel in 1992 entitled *Responsible Science, Ensuring the Integrity of the Research Process*.<sup>3</sup> Several institutions in response to the experience of embarrassing cases have developed better ways of dealing with misconduct and have even developed guidelines for sound research practices.<sup>4</sup> In spite of all of this, there was no sense, at least in the Congress, that the problem had been adequately addressed, and thus the Commission was created.

After the first flurry of journal editorials and articles on the CRI report were released, I thought that a scholarly discussion of the issues would be more constructive than trading hyperbole. This article is one attempt to deal with the areas of controversy. Also, with the help of FASEB, I was able to meet with a coalition of scientists representing some

forty-four major biomedical organizations to discuss the concerns that they had with the CRI report. What astounded me was that about one fourth of the scientists attending the meeting knew very little about the Commission's activities and hadn't read the report until the meeting was called. The discussion that ensued covered largely criticisms of the Commission's definition of research misconduct and the Whistleblower's Bill of Rights. I came away from the meeting with the strong feeling that many scientists had not given much prior thought to the issues and that there were fundamental differences of opinion on whether there really was a problem versus a public relations issue. In the criticisms offered, the National Academy Panel's recommendations<sup>3</sup> were often cited as preferable alternatives to those of the Commission. The two reports have much in common but quite marked differences in the recommendations, so they become paradigms for a debate on how to deal with the issues.

The concerns about the definition of misconduct start with the one in use now by the Public Health Service. Currently, scientific misconduct means fabrication, falsification, plagiarism, or other practices that seriously deviate from those that are commonly accepted within the scientific community for proposing, conducting, or reporting research. It does not include honest error or honest differences in interpretations or judgments of data.<sup>5</sup> The phrase "other practices that seriously deviate from those that are commonly accepted within the scientific community" is felt by many scientists and the NAS report panel to be too vague and to offer an opportunity for abuse in treating novel or unorthodox practices as misconduct. The Commission decided to approach the question with an open mind. There has in fact been no evidence that the "other practices" clause has occasioned any case of treating novel research as misconduct. This has clearly been a straw man in the argument about changing the definition, but one had to ask what role a definition should play. The Commission chose in its definition to stress an ethical approach to behavior rather than trying to use it merely for "serving as a vehicle for containing or expanding the basis for blame or legal action." As a matter of fact, the Commission didn't make progress on the definition until the members agreed on the ethical principle on which it should be based. This ultimately was identified as the principle that scientists should be honest and fair. At first the Commission considered including this in the definition but on reflection realized it was too vague for a regulation. The NAS report listed similar principles that guide scientists, such as respect for the integrity of knowledge, collegiality, honesty, objectivity and openness. These are similar to the Commission's principles but more expansive. These are the same principles that are supposed to stifle creativity according to the Science editorial noted previously, when made explicit, but are not a source of concern as long as they are informal, unwritten and (?) ignored. It is as if there is a cynicism about such principles and an embarrassment to recognize them as simple virtues that might be practiced and taught.

The Commission then went on to use a narrative description of misconduct as "significant misbehavior that improperly appropriates the intellectual property or contributions of others, that intentionally impedes the progress of research, or that risks corrupting the scientific record or compromising the integrity of scientific practices." This has been criticized because of its nonspecificity without reference to the specific and legally enforceable language that follows it with the examples of misappropriation, interference and misrepresentation:

**Misappropriation:** An investigator or reviewer shall not intentionally or recklessly

- a. plagiarize, which shall be understood to mean the presentation of the documented words or ideas of another as his or her own, without attribution appropriate for the medium of presentation; or
- b. make use of any information in breach of any duty of confidentiality associated with the review of any manuscript or grant application.

**Interference:** An investigator or reviewer shall not intentionally and without authorization take or sequester or materially damage any research-related property of another, including without limitation the apparatus, reagents, biological materials, writings, data, hardware, software or any other substance or device used or produced in the conduct of research.

The inclusion of interference by the Commission was a substitute for the "other practices clause" of the current definition, and the examples used are based in part on cases brought to the Commission's attention. We didn't think these issues were or could be dealt with easily by invoking laws on vandalism, that they were serious and should not be tolerated as acts committed by individuals with federal research funding.

**Misrepresentation:** An investigator or reviewer shall not with intent to deceive or in reckless disregard for the truth,

- a. state or present a material or significant falsehood; or
- b. omit a fact so that what is stated or presented as a whole states or presents a material or significant falsehood.

These examples have been criticized for being too legalistic on the one hand and too subject to misinterpretation on

the other. The legal members of the Commission commented that misconduct cases usually end up involving attorneys and the use of these "legalisms" are often introduced as a defense on behalf of the accused. Scientists as well as all well-educated citizens should be familiar with common legal terms such as "intent" and "material." One interesting criticism brought up at the meeting of the coalition of biomedical scientists was about the inclusion of b. "omit a fact" under misrepresentation. Several of the representatives of scientific organizations offered a vigorous defense for the practice of omitting a good deal in reporting research and it was characterized as being so much a part of the natural practice of research that the definition proposed would cause enormous harm even though by the Commission's definition the omission has to be enough to make the whole report false. The NAS panel report actually also deals with this very clearly as follows: "Responsible practice requires that scientists disclose the basis for omitting or modifying data in their analyses or research results, especially when such omissions or modifications could alter the interpretation or significance of their work." The criticism of the inclusion of this in the Commission definition and lack of criticism for it as a standard buried in the NAS panel report again points out that scientists seem to be ambivalent about their ethical principles and what they mean in practice. The NAS panel "believes that the existing self regulatory system in science is sound. But modifications are necessary to foster integrity in a changing research environment, to handle cases of misconduct in science and to discourage questionable research practices." The Commission was less sanguine that the system was so sound and that the modifications would come with the bland and mostly optional recommendations of the NAS panel. The NAS panel and most scientists that criticize the Commission report want to confine the definition of research misconduct to fabrication, falsification and plagiarism and to make a sharp distinction between these obvious cases of misconduct and "questionable research practices" such as "failing to retain significant research data for a reasonable period; maintaining inadequate research records, especially for results that are published or are relied on by others; using inappropriate statistical or other methods of measurement to enhance the significance of research findings; inadequately supervising research subordinates or exploiting them."

The Commission was less certain than the NAS panel that one could make a sharp demarcation between fraud and questionable research practices. The question ought to be what kind of assurances about research practices should a prudent funding agency require? Most of the NAS panel recommendations with respect to scientists and their institutions are sound and in need of implementation, but they are largely exhortatory and the Commission found no evidence of widespread enthusiasm in the scientific community for voluntarily committing to their principles and complying with the recommendations.

Another point of controversy has been the "Whistleblower's Bill of Rights," which it is claimed goes too far and does not balance the rights of the accused sufficiently. This need for balance indeed created tension within the Commission and hence the prefatory phrase, "Responsible whistleblowing" in the report, and a countervailing responsibility was included in the list for every right. In order to understand the emphasis of whistleblower issues it should be remembered that this was singled out as an issue by the Congress. The Commission tried to deal with the rights of both the accused and the accuser and this concern is reflected in the recommendations for administrative changes by both institutions and the government.

An important recommendation by the Commission is a requirement that each institution applying for research support provide an assurance that it has an educational program on the responsible conduct of research. There is no requirement for institutions to adopt explicit standards that both the NAS panel and the Commission thought would be helpful, but at least the educational requirement will contribute to a general awareness of what adhering to the ethical principles of science might entail.

The justification for the Commission recommendations is the need for the government to have accountability from the scientists who receive federal grant support. None of the recommendations made by other committees or panels have gone far enough to do the job and this contrast with the CRI report is striking by virtue of its not stopping with the simple rhetoric of ethical principles but trying to be sure they have meaning in practice. It is a subject worthy of serious debate. The CRI report is more a challenge than a final solution to the problems that, in the end, only the scientific community can resolve.

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## Endnotes

1. *The Scientist*, Vol. 10, January 22, 1996, pg. 1.

2. Frederick Grinnell, "Ambiguity in the Practice of Science," *Science* 272: 333, 1996.
3. *Responsible Science: Ensuring the Integrity of the Research Process*, Vol. 1, National Academy of Science Press, Washington, DC, 1992.
4. Shore, E. "Effectiveness of Research Guidelines in Prevention of Scientific Misconduct," *Science and Engineering Ethics*, 1: 383-387, 1995.
5. Price, A. R. "Definitions and Boundaries of Research Misconduct," *The J. Higher Education*, 65: 286-297, 1994.

## IN THE NEWS

### **Federal Judge Dismisses Scientific Misconduct Claim**

A federal judge granted a motion for summary judgment dismissing a *qui tam* suit under the False Claims Act because of the complainant's failure to provide evidence of scientific fraud. The claim was by a former postdoctoral fellow, who alleged that researchers engaged in brain tumor research at two universities had falsified data and continued to submit grant applications to the National Institutes of Health based on the falsified data. The False Claims Act allows private citizens to file suit to recover money defrauded from the federal government and to receive up to 30 percent of the recovered funds. Earlier successes in pursuing scientific misconduct claims through *qui tam* suits [See *PER*, VIII(2) Spring 1995, VII(1) Winter 1994, and III(3) Summer 1990], prompted many scientists to voice concern about the intrusion of the courts into matters that ought to be resolved by scientists and their institutions. In this case at least, they have an ally in the judge, whose opinion noted that "the legal process is not suited to resolving scientific disputes or identifying scientific misconduct" (*United States of America ex rel. Kathryn M. Milam v. The Regents of the University of California, the University of Texas M.D. Anderson Cancer Center, et al.*, U.S. District Court, Maryland, Civil No. B-90-523, October 6, 1995, Senior Judge Walter E. Black, Jr.).

### **PhRMA Adopts Ethical Principles on Genomics**

The Pharmaceutical Research and Manufacturers of America has adopted a statement articulating a set of ethical principles that "should govern the medical use of genomics." The statement recognizes that increased knowledge about the human genome "will give individual patients greater choices for the detection, prevention and treatment" of genetic diseases and stresses the importance of having "appropriately trained health care providers fully counsel patients on genetic predisposition testing and implications to ensure their informed consent." The statement supports "open public debate on all aspects of genetics," emphasizing that "Public understanding of the capabilities and limitations of genetic medicine is essential, and will facilitate realistic expectations for the technology." The principles also declare that "society has the associated responsibility to set standards for the type, distribution, access and use of health care based on genomic research" and that "existing quality and efficacy standards must be maintained." (*Ethical Principles on GENOMICS, April 14, 1996*)

### **NIH Promotes Policy on Access to Human Genome Data**

NIH's National Center for Human Genome Research (NCHGR) has announced a policy to place DNA sequence data produced by research funded through a specific grant mechanism in the public domain as rapidly as possible where it will be freely available. A goal of the Human Genome Project is to produce a complete sequence of human DNA by the year 2005, and NCHGR has established a pilot grant program to test strategies that can potentially speed up the sequencing. A condition of an award under this pilot program is the requirement that grantees adopt a policy of rapid release of sequence data to public databases. The policy reflects NIH's concern "that patent applications on large blocks of primary human genomic DNA sequence could have a chilling effect on the development of future inventions of useful products." Moreover, such sequence data, "in the absence of additional demonstrated biological information, lacks demonstrated specific utility and therefore is an inappropriate material for patent filing." During the pilot period, NCHGR will evaluate whether its approach to ensuring rapid dissemination of DNA sequence data is "sufficient to

ensure that sequence generated by these grants is maximally useful to the research and commercial sector. If not, NIH will consider a determination of exceptional circumstances to restrict or eliminate the rights of parties, under future grants, to elect to retain title." (Policy on Availability and Patenting of Human Genomic DNA Sequence Produced By NCHGR Pilot Projects Funded Under RFA HG-95-005, April 9, 1996.)

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## IN THE SOCIETIES

### **ISEE Annual Conference Tackles Professional Ethics**

The 8th Annual Conference of the International Society for Environmental Epidemiology (ISEE) may be the first in epidemiology to engage the profession in an experiment in grass roots discussions on ethics. This will be accomplished by identifying about a dozen sessions in which papers will be presented. In addition, the final 15 - 30 minute time slot will be allocated to an environmental ethicist who will facilitate a discussion of the preceding four to five papers presented in that session. In order to gauge the impact and desirability of this approach to engaging professionals in an ethics discussion, a brief questionnaire will serve as an evaluation instrument and the report will be published to help guide future conference planners. The conference will take place at the University of Alberta, Edmonton, Alberta, Canada, August 17-21, 1996. Contact the Conference Secretariat, Michelle Hoyle, 44 Lister Hall, University of Alberta, Edmonton, Alberta, Canada, T6G 2H6; (403) 492-4281; Fax (403) 492-7032; E-mail [mhoyle@gpu.srv.ualberta.ca](mailto:mhoyle@gpu.srv.ualberta.ca).

### **AAAS Congressional Seminars on the Human Genome Project**

The AAAS is convening a series of four seminars on the Human Genome Project (HGP) for Members of Congress and congressional staff. Two seminars were convened in May - one on the scientific and clinical developments and the other on commercial and patent implications. Two additional seminars were conducted in June - one on the issues related to privacy, confidentiality and discrimination, and the other on the links between genetics and human behavior. The seminar series is intended to improve the quality of information available to Congress as it considers the public policy implications of the HGP and what legislative initiatives it might take. The background materials and presentations by the speakers will be compiled into a single document for distribution at the conclusion of the series. The seminars are a collaboration between AAAS's Center for Science, Technology, and Congress and the Scientific Freedom, Responsibility and Law Program, with funding provided by the Human Genome Project of the U.S. Department of Energy.

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## LETTER TO THE EDITOR

Dear Editor: What happens in an engineer's employment situation, when he or she finds it necessary to dissent on ethical or technical grounds and the inevitable employee-company conflict develops? This may be engineer to engineer, engineer to manager, or even manager to engineer. How should it get resolved in a professional and fair manner so that the engineer can avoid feeling compelled to go outside and "blow the whistle"?

I propose the establishment of a profession-wide set of ethical/technical dissent due process guidelines. These would provide a spelled out procedure to follow in order to resolve ethical conflict or technical dissent situations arising during an engineer's practice of his/her profession. The context for applying this due process procedure would be within an organization or company where the engineer is employed. Such a procedure could contain the following elements, described in writing:

The process for filing a complaint based upon ethical conflict or technical dissent, a preliminary investigation to determine whether or not a basis of cause or merit exists and if it likely can be substantiated, a determination to hold a hearing, giving hearing notices, and stipulating the issues in the matter, assembling a hearing panel, presentation of the complaint with substantiation provided, the presentation of alternative views or positions, debate on all views presented, rendering of a decision by a hearing panel, review and processing of any appeals of the decision, and final disposition of the matter.

If such a due process procedure were instituted, hopefully the need to go outside and "blow the whistle" would be greatly reduced.

Anyone or organization interested in collaborating to develop such a due process procedure are invited to contact me by E-Mail at [w.elden@ieee.org](mailto:w.elden@ieee.org), or by snail mail at 611 Mimosa Ct., Melbourne, FL, 32940, USA.

Walter L. Elden, P.E., Member,  
IEEE Member Conduct Committee

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## ETHICS, LAW AND PUBLIC POLICY

### The Irrelevance of the "Gay Gene"

By Philip L. Bereano

[The following essay is an invited contribution to *PER*, the original, expanded version of which appeared in the *Seattle Times*, February 25, 1996. - Ed.]

"If homosexuality is inherited, shouldn't it have died out by now?" - two women talking in a New Yorker cartoon.

Last October 10th, the US Supreme Court heard arguments in the case of *Romer v Evans*, concerning Amendment 2 to the Colorado Constitution, adopted by referendum, which would bar all state and local laws protecting homosexuals from discrimination. The courts in Colorado had thrown out the Amendment by claiming that it infringed on the "fundamental right to participate equally in the political process." [On May 20, 1996, the Supreme Court, in a 6-3 decision, struck down the amendment. - Ed.]

In the proceedings in the lower Colorado courts, one of the witnesses put on the stand by gay rights activists was a federal scientist, Dean Hamer, who testified that homosexuality was a genetically caused, rather than a cultural or chosen, behavior, and thus more deserving of constitutional protection.

Whether to look to nature or nurture to explain sexual orientation does not align with political belief. Although some conservatives believe that homosexuality is a sin (i.e., chosen behavior for which one is responsible), a biological explanation would facilitate eugenic "improvements" of the population, a goal of right wing authoritarians since the days of Darwin. Among progressives, the National Gay and Lesbian Task Force, for example, relies on biology to claim that "homosexuality is a naturally occurring and common variation among humans," while the Council for Responsible Genetics this month issued a white paper arguing that the scientific basis for such claims is exceedingly weak and irrelevant to the notion that gay people should be protected from the discrimination directed towards them.

Although the term "homosexual" had been in use as a somewhat clinical adjective for describing certain activities (sex between two men or two women), in the late nineteenth century it began to be used as a noun to designate a person who engaged in such behavior (although it is unclear how often or how exclusively one had to be doing the act in order to earn the label).

Some of the researchers who are gay have made it explicit that they are involved in this research because they want to prove that gay behaviors are not "unnatural," or "crimes against nature," nor-if their sexual orientation has a biological foundation-is it their "fault" that they are gay. Yet posing the question of what causes individuals to be lesbian or gay exemplifies homophobia itself by implying that heterosexuality, because it predominates, is more "natural" or "normal," and that homosexuality therefore represents a "problem" in need of a "solution." Since gay behaviors have been recorded in virtually all known cultures, they must be both as normal and as natural human orientations as heterosexual activities.

In our society people are subjected to discrimination precisely on the basis of biology (as the African-American and women's movements amply demonstrate), as well as because of differences that are cultural (such as ethnicity or religion) or chosen (such as marital status or religious conversion). In 1539, the theologian Sebastian Munster based

his anti-Semitism explicitly on imagined physical attributes; "you Jews" he wrote, "have a peculiar color of face different from the form and figure of other men." Unfortunately, these old ideas still persist. Last year, the federal Sixth Court of Appeals, upholding a Cincinnati referendum denying homosexuals "protected status" against discrimination, said that it was impossible to have a law shielding a minority from discrimination where they are "defined by subjective and unapparent characteristics such as innate desires, drives and thoughts.... Many homosexuals successfully conceal their orientation. ... Homosexuals generally are not identifiable "on sight...." Does this mean that it's okay to discriminate against Mormons, Baptists, or Pentecostals waiting for the rapture?

### **Scientific Investigation of Sexual Orientation**

Sexual orientation, like any other human behavior, is experienced in complex and variable ways which are undoubtedly influenced by both biological and societal factors. Since we are biological organisms, of course, virtually everything we do has some biological components. But seeking a definitive basis of homosexuality in genetics risks oversimplifying our view of human behaviors, and ultimately of our world.

Currently, we are experiencing a revival of earlier biodeterminist arguments attributing a wide range of physiological, psychological, and social characteristics to genetics. "At last we will know what it truly means to be human," exulted biologist James Watson (who received the Nobel Prize for his work for discovering the DNA double helix), as if Shakespeare, for example, had no inkling.

The most frequently cited relevant scientific study was published in 1993 by Hamer. His group examined DNA samples from men who self-identified as gay and other gay family members and claimed to have found a DNA segment which correlates with sexual orientation-but only in 2/3s of the men. Hamer's study is significantly compromised by: 1) not checking the straight men in these families for the segment; 2) defining who is "gay" by an extreme estimate for the prevalence of homosexuality among American men, 2% (using the commonly accepted estimate of 5-10% eliminates the statistical validity of his results); and 3) knowing that the federal Office of Research Integrity is investigating the study because one of the collaborators has alleged that the research team suppressed data.

Another claim for a biological link to homosexuality was made in 1991 by the neurophysiologist Simon LeVay, who studied corpses categorized by circumstantial evidence and claimed that a specific structure in the brain is smaller in gay men than in straight ones. Some of the study's "gay" cadavers had larger structures than in the "straight" ones, so that upon inspection there would be no basis for deciding whether a given corpse had been "gay" or "straight" when alive.

Studies of twins and other siblings have been relied on for additional arguments that there is a biological basis to sexual orientation. Homophobia-which is clearly an environmental factor-may have affected the results by distorting the sample which was not random. The participants "were recruited through advertisements placed in gay publications" by ads asking them about their brothers; although the ads wanted gay men to call in regardless of the brother's sexual orientation, readers with gay brothers would be more likely to participate than men with straight brothers if the straight brothers were homophobic or if the gay ones were not "out" to their families. Catholicism runs in families too, but is unlikely to be biological. *None of the results of any of these studies support the claim that any single gene can determine sexual orientation.*

### **Combating Discrimination**

The potential for mischief in relying on these studies and the potential for misuse if a gay gene ever were found is substantial. A recent cover story in *The Advocate*, a major national gay and lesbian newsmagazine, had the subtitle "Once a Gay Gene is Found, Can Gene Therapy Be Far Behind?" Although both the American Medical Association and the American Psychiatric Association take the view that homosexuality is not an illness, and that trying to change a person's sexual orientation would be wrong, it is clear that the idea of using a marker or gene to predict which male fetuses are gay for purposes of terminating such pregnancies, or to subject young boys to "remedial" education, reprogramming, or other so-called "therapies" will inevitably be voiced.

"Homosexuality is a disability and if people wish to have it eliminated before they have children-because they wish to have grandchildren or for other reasons-I do not see any moral objection for using genetic engineering to limit this

particular trend. It would be like correcting many other conditions such as infertility or multiple sclerosis." These are not the words of some Neo-Nazi propagandist or mad scientist, but the former Chief Rabbi of the United Kingdom, Lord Jakobovits, in 1993.

Society at present protects people against discrimination for behaviors which are not biological. Whether people's differentiation is cultural (such as religious) or purely the result of choice (such as marital status or religious conversion), genetic predisposition is not necessary to create these legal protections. Would anyone seriously argue that the anti-discrimination statutes should protect, for example, a person born of a Jewish mother but not one who converts to Judaism? Certainly "born-again Christians," who lately have claimed they are being discriminated against, ought to recognize the validity of choice as a basis for one's whole persona.

The scientific argument for a biological basis for sexual orientation remains weak. The political argument that if we can establish a genetic foundation we will bolster gay pride or prevent homophobic bigotry runs counter to our experience. The lesbian, gay, bisexual community does not need to have its "deviance" tolerated because its members were born "that way" and "cannot help it." Rather, society must recognize the validity of lesbian, gay and bisexual lifestyles. We need an end to discrimination, and acceptance of all human beings. We need to celebrate diversity, whatever its origins.

*[Philip L. Bereano is Professor of Technology and Public Policy at the University of Washington and serves on the Washington and National Boards of the American Civil Liberties Union. He wishes to acknowledge colleagues in the Council for Responsible Genetics whose work has contributed to the ideas in this Op Ed. -Ed.]*

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## RESOURCES

### In Print

A March 1996 report of the U.S. General Accounting Office warns of "breakdowns in the protection of human subjects in scientific experiments sponsored by the federal government and others." While acknowledging the valuable role of local institutional review boards in deterring abuses of the rights and welfare of human subjects, the report, *Scientific Research: Continued Vigilance Critical to Protecting Human Subjects* (GAO/HEHS-96-72), notes that "Various time, resource, and other pressures, however, have reduced or threaten to reduce the effectiveness of local review boards and federal agency oversight." The report points out in particular the relatively small number of on-site inspections of research institutions conducted by the National Institutes of Health and the Food and Drug Administration, which have primary federal oversight responsibilities for monitoring and enforcing government policies for the protection of human research subjects.

### On-Line

**Ethics Updates** is a WWW site intended primarily for ethics instructors and their students. Located at <http://pwa.acusd.edu:80/~hinman/index.html>, the site includes sections on applied ethics and offer valuable supplemental material for downloading or printing on abortion, reproductive technologies, euthanasia, punishment and the death penalty; issues of race, gender, sexual orientation, and economic inequality; world hunger, animal rights, and environmental ethics. The Web site is maintained by Lawrence Hinman, Department of Philosophy, University of San Diego, 5998 Alcalá Park, San Diego, CA 92110; (619) 260-4787; E-mail [hinman@acusd.edu](mailto:hinman@acusd.edu).

**Geo-Ethics** is a listserv on geography, ethics and justice, and includes the computer network for the proposed Ethics and Justice Specialty Group (EJSG) of the Association of American Geographers. To subscribe, send e-mail to [majordomo@atlas.socsci.umn.edu](mailto:majordomo@atlas.socsci.umn.edu) that reads: "subscribe Geo-Ethics" your e-mail address. Contact William Lynn, Department of Geography, University of Minnesota, 414 Social Science, Minneapolis, MN, 55455; (612) 625-6080; Fax (612) 624-1044; E-mail [lynn0003@gold.tc.umn.edu](mailto:lynn0003@gold.tc.umn.edu).

**The Genetics & Public Issues Program, National Center for Genome Resources**, has put together a comprehensive collection of Web-pages exploring the scientific, ethical, legal, and social issues raised by the Human Genome Project.

Point your Web browser to <http://www.ncgr.org> or contact Mike Knapp, NCGR, 1800 Old Pecos Trail, Sante Fe, NM, 87505; (800) 450-4854; Fax (505) 982-7690; E-mail [mjk@ncgr.org](mailto:mjk@ncgr.org).

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## ANNOUNCEMENTS

The AAAS, the American Medical Association, the Joint Commission on Accreditation of Healthcare Organizations, and the Annenberg Center for Health Sciences are convening a multidisciplinary conference on **Examining Errors in Health Care: Developing a Prevention, Education, and Research Agenda**, with the co-sponsorship of the American Hospital Association, Glaxo Wellcome, Inc., the Institute for Healthcare Improvement, and The Robert Wood Johnson Foundation. The co-convenors are inviting proposals from individuals interested in presenting papers at plenary sessions and in organizing and leading breakout sessions. Focusing on a problem of keen interest to society, the conference will be open to individuals from a variety of professions, institutions, and perspectives. An important outcome of the meeting will be the identification of practices that will contribute to the prevention of errors, leading to higher quality health care, as well as the generation of topics for further research and study. The conference will be held at the Annenberg Center for Health Sciences, Rancho Mirage, California, October 13-15, 1996. Deadline for receipt of proposals is July 1, 1996. Successful applicants will be notified by August 16, 1996. For more information, contact Deborah Runkle, American Association for the Advancement of Science, 1200 New York Avenue, NW, Washington, DC 20005; (202) 326-6794; Fax (202) 289-4950; E-mail [drunkle@aaas.org](mailto:drunkle@aaas.org).

The Fundación General Universidad Complutense de Madrid is convening on July 8-12, 1996, the **Ethics and Computer Science Summer School** in El Escorial, Madrid, Spain. Themes to be explored during the summer school range from defining and promoting ethics in computer science, to pedagogical strategies, to the role played by professional organizations and codes of ethics in computer science. Contact Dr. Porforio Barroso Asenjo, Clinica Puerto de Hierro, San Martin de Porres, 4, 28025 Madrid, Spain; 34-1-3 866775; Fax 34-1-3 730535; E-mail [pbarroso@capilla.cph.es](mailto:pbarroso@capilla.cph.es).

On July 14-19, 1996, the University of Minnesota's Center for Biomedical Ethics and the Medical College of Wisconsin-Milwaukee are sponsoring the **Midwest Intensive Bioethics Course** in Monticello, Minnesota. The course is designed to facilitate an understanding of cutting edge issues in bioethics, to discuss current theories of bioethics and the relative strengths and limitations of these approaches, to impart the skills necessary to apply moral reasoning to specific clinical cases that present ethical conflicts at both the institutional and individual levels, and to highlight academic, research, and organizational resources available. Contact the Center for Biomedical Ethics, University of Minnesota, 2221 University Avenue, SE, Suite 110, Minneapolis, MN, 55414; (612) 626-9756; Fax (612) 626-9786; E-mail [holmb006@maroon.tc.umn.edu](mailto:holmb006@maroon.tc.umn.edu).

The World Association for Medical Law, in conjunction with the World Health Organization and the Council for International Organizations of Medical Sciences, is sponsoring the **11th World Congress on Medical Law** on July 28-August 1, 1996 in Sun City, Northwest South Africa. The conference program features topics ranging from health care issues specific to developing countries, to genetic engineering and genome analysis, to nursing ethics and law. Contact the Secretariat, 11th World Congress on Medical Law, International Centre of Medicine & Law, Box 51, Buhrmannsdrif 2867, Northwest, South Africa, -27-140-842470/1; Fax -27-140-24894.

**The European Bioethics Seminar: Health Care in Pluralistic Societies**, August 5-9, 1996, Nijmegen, the Netherlands, is being organized by the International Program in Bioethics Education and Research. Bioethics scholars from different countries will provide participants understanding of contemporary bioethics issues. Special attention will be paid to European traditions in health care ethics. All lectures and plenary sessions will be in English. For more information, contact J.C.M. Felet-de Haard, Catholic University of Nijmegen, 232 Department of Ethics, Philosophy & History of Medicine, P.O. Box 9101, 6500 HB, Nijmegen, The Netherlands; -31 24 361 5320; Fax -31 24 354 0254.

The **Fifth International Conference on "Public Sector Ethics -Between Past and Future,"** will be held on August 5-9, 1996, in Brisbane, Australia and is being sponsored by Ethics in the Public Services: An International Network. The conference will integrate scholars and practitioners in a series of panels, seminars, workshops, and plenaries all aimed at providing a wide range of perspectives on emerging challenges to established theory and practice in public

sector ethics. The program themes are: ethics for business-like public sector management; foundations of public sector ethics; public sector ethics and cultural influences; ethics in the bureaucracy; public sector ethics and new technology; professional, personal and public administration ethics; and knowing, doing and teaching. Contact P. Gauvin, EPS Conference Secretariat, CAPSM, Griffith University, Nathan, Qld 4111, Australia; -61 (7) 3875 7209; Fax -61 (7) 3875 7737; E-mail [p.gauvin@cad.gu.edu.au](mailto:p.gauvin@cad.gu.edu.au); WWW [http:// uniserve.edu.au/uniserve](http://uniserve.edu.au/uniserve).

On September 26-28, 1996, Tuskegee University is hosting a Conference **On The Human Genome Project**, Kellogg Conference Center, Tuskegee, Alabama, for the purpose of increasing awareness in the African American community of the Human Genome Project (HGP). Presentations and workshop discussions by eminent and recognized leaders in the field will focus on the technological, ethical and social aspects of the HGP with significant opportunities for interaction with students and faculty. In addition to plenary presentations, specific workshops will provide a forum for interactive discussion and exchange of ideas. Concurrent workshops have been planned in the following themes: Genetic Testing: Overcoming Fears and Accepting Consequences; Genetic Mapping Approaches: DNA Analysis Technology for Genetic and Physical Mapping (Demonstration of PCR-based Gene Cloning, Genetic Analysis and Screening Techniques); Funding Genomic Research: Is There Money for "Small" Science; and Increasing Community Awareness of the HGP: The Role of Educators, the Church, Community, and Civic Organizations. Contact Ed Smith, 109 Milbank Hall, Tuskegee University, Tuskegee, AL 36088; (334) 727-8028; Fax (334) 727-8552; E-mail [edsmith@acd.tusk.edu](mailto:edsmith@acd.tusk.edu).