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Editor: Mark S. Frankel

Deputy/Managing Editor: Sanyin Siang

Contributing Editors: Michele Garfinkel, Rachel Gray, Bhavani Pathakn

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## RESEARCHING ETHICALLY WITH HUMAN SUBJECTS IN CYBERSPACE

by Sanyin Siang

[Sanyin Siang](#) is Deputy Editor of the *Professional Ethics Report*.

As we launch into the new Millenium, it is incontrovertible that the Internet will be a crucial component of our future. As cyberspace rapidly evolves into a rich medium for communication, it becomes a valuable tool and an attractive target for social and behavioral researchers wishing to study the dynamics and impacts of human interactions in cyberspace.

Researchers studying opinions on specific issues can send out surveys to the general or more specific populations, while those who wish to explore the psychological and social implications of issues ranging from last week's Star Trek episode to cocaine addiction can "participate" in a discussion group and record ongoing conversations for further analysis. There has been an increase in the number of Internet studies, ranging from surveys to naturalistic observation. Consequently, cyberspace research offers great potential for improving scholarship in a wide variety of fields and for assessing the very practical impacts of an increasingly critical technology. However, while such research promises new insights into the complexity of human interactions, community building, and behavioral patterns, certain distinct features of the virtual world raise issues about the norms and policies that traditionally guide such research. Are current guidelines and policies adequate for research in the virtual world? Should they be revised? If so, in what way? There is a pressing need, both to protect human subjects and to promote innovative and scientifically sound research, to begin the task of delineating the ethical, legal, and technical issues associated with this burgeoning area of research, so that researchers, IRBs, and policy makers will know the questions to ask as the first step in developing appropriate responses.

To examine this subject, the American Association for the Advancement of Science's Program on Scientific Freedom, Responsibility and Law and the US Department of Health and Human Service's Office for Protection from Research Risks convened an exploratory workshop in June 1999 to help flesh out the relevant issues. Present were representatives from an array of fields including social, behavioral, and computer sciences, legal and ethics communities, and Institutional Review Boards (IRBs). An outcome of the workshop is a report (<http://www.aaas.org/spp/sfrl/projects/intres/main.htm>) that includes a research and education agenda and recommendations for action for professional and online communities, research institutions, and government agencies regarding the responsible conduct of research on the Internet. This article presents an introductory summary of the report and some of the research and education agenda and recommendations for action.

The topic of human subjects research is one that has been of great interest to the scientific community for the past few decades. It involves a tenuous and often complicated balance between advancing scientific knowledge and ensuring adequate protection and benefits for the subjects. Currently, a human subject is defined under federal guidelines as "a living individual about whom an investigator (whether professional or student) conducting research obtains data through intervention or interaction with the individual, or identifiable private information." (Protection of Human Subjects" Title 45 Code of Federal Regulations Part 46). Over several decades, ethical and legal obligations of researchers toward human subjects have come to rest on the principles of autonomy, beneficence, nonmaleficence, and

justice.

The first principle, autonomy, or “self-governance,” requires that subjects be treated with respect as autonomous agents and affirms that persons with diminished autonomy are entitled to special protection. In practice, this principle is reflected in the act of acquiring informed consent, in which the risks and benefits of the research are disclosed to the subject. The second principle, beneficence, involves maximizing possible benefits and good for the subject, while nonmaleficence, centers on minimizing the amount of possible harm and risks resulting from the research. A subset of the principle of autonomy and nonmaleficence is protecting against invasion of privacy and breach of confidentiality. Since the fruits of knowledge can come at a cost to those participating in research, the last principle, justice, seeks a fair distribution of the burdens and risks associated with research.

Some of these guidelines, already difficult in their application to traditional research methodologies, may become more complicated in Internet research due to certain distinct features of the virtual setting.

Features such as

- the blurred distinction between public and private domains,
  - the ease of anonymity or pseudonymity,
  - the transcending of spatial barriers which results in communities of geographically dispersed members,
  - the suspension of temporal barriers with the recording and archiving of communications, and
  - the relatively low cost, easy to use, technological means to facilitate tracking of participants
- all raise questions about the interpretation and application of existing guidelines and policies for human subject research in the virtual world.

These distinct features may require redefinition or elaboration of the researcher’s traditional set of obligations to the subjects and to her colleagues or a reassessment of what constitutes as a human subjects. For example, one of the research and education agenda items is to “clearly delineate the types of online research that would require compliance with federal guidelines on human subjects studies...the blurred distinction between public and private domains raises the question of what is considered “private information” in cyberspace; and the traceability of online communications and the amount of emotional investment that some people put into their online identities challenge notions of what is considered ‘identifiable’.” Other recommendations pertain to the distinctiveness of features themselves such as “delineate the boundaries of private vs. public space on the Internet,” or “assess the risks of and benefits associated with different research methods used in online research, ranging from surveys, in which questions are posed o participants, to observational research, in which participants remain unaware of the researcher’s presence...”

Furthermore, traditional forms for social control of research, such as government statutes, regulations and professional standards, may require reexamination. For example, in cyberspace, the blurred distinction between the public and private domains may create difficulty in interpreting and implementing the informed consent requirement. The distinction is important since researchers may be exempt from obtaining consent is for data collected from the public domain (a notion traditionally defined by ease of accessibility). Thus, for data collected from television, public records, radio, printed books, or conferences, or in public spaces such as parks, researchers are not obligated to obtain consent for their use.

Some researchers interpret cyberspace to be part of the public domain since newsgroups, listservs, IRCs, and MUDs observed by the researchers are as accessible to anyone as a television or newspaper interview. They believe that no ethical or legal standards are breached in foregoing the informed consent requirement. Other scholars disagree with this interpretation, arguing that the greatest risk for cyberspace participants occurs in the situation where members remain unaware that their messages are being analyzed until the results of the research are published. Moreover, if the results are published in such a way that the members of a virtual community can identify their community as the one evaluated without their knowledge, psychological harm may result. These scholars also argue that, although the computer mediated communications (CMC) media are publicly accessible, participants expect a degree of privacy in their communications.

The global features of the Internet and its ease of accessibility also pose logistical difficulties for the informed consent requirement. An online community might consist of hundreds of members with no counterpart to authority figures such

as a mayor or tribal leader in the physical world. Issues arise regarding the researcher's methods for securing informed consent. How should a researcher proceed when the study is based on the interactions of community members when some members of the community refuse to give informed consent, but wish to remain in the community, or in the face of a community that may be in constant flux with hundreds of new members joining and leaving each day.

Cognizant of these types of considerations, workshop participants recommended an increase in "knowledge about the structure of Internet communities and their similarities and differences with physical communities" as well as having IRBs consider the inclusion of members of the virtual communities studied represented in their deliberations." Furthermore, to prevent misconceptions on the part of the researched community, participants also urged researchers to employ the concept of community consultation in planning research and interpreting results through dialogues with the researched communities regarding perceived benefits and harms, their expectation of privacy in different CMC environments, and the information prospective subjects believe they should know to make decisions about research participation. Researchers should also be specific about the possible benefits and harms to their subjects, how they plan to minimize risk exposure, and their methods of securing informed consent from prospective subjects.

Research in cyberspace is also especially challenging to concerns related to privacy and confidentiality. Invasions of privacy occur when research participants lose control of the types of personal information revealed about themselves. The public vs. private domain distinction is relevant to this issue, as is the researcher's understanding of the technology that has been developed to track the Internet activities of its users.

Violation of confidentiality occurs when information about a participant is disseminated to audiences for whom it was not intended. In the physical world, government regulations and ethical guidelines obligate researchers to protect the privacy of research subjects. For research in the physical world, researchers can comply with this obligation by disguising the identity of their subjects. However, many online users have pseudonyms that in themselves might qualify as sufficient disguise in the physical world, but which have comparable values to real identities in the online world. Since many Internet users may invest in the development of their online personas, workshop participants recommended that there be "consideration of whether these pseudonyms should be treated as real identities and hence, afforded the same types of confidentiality protection."

A major component of the discussions at the workshop revolved around the general understanding of the technologies involved in Internet research. These range from the security of the data transferred and collected to the traceability of newsgroup discussions and online archives. Strategies towards resolution of these types of issues would require cooperation among researchers and their subjects as well as technology service personnel at the researchers' institutions. Recommendations pertaining to these issues include "Researchers should consult with their institution's technology system administrators regarding the technical aspects of their research so that they are knowledgeable about the power and limits of this research medium," and "IRB members should be familiar with the various methodologies associated with Internet research and assured that procedures used by researchers will safeguard participants. They can be aided in this task by including persons knowledgeable about online technologies in their deliberations."

Discussions at the workshop such as those presented above are preliminary and were not meant to be comprehensive nor definitive. The recommendations should be considered only as part of a general strategy for dealing with the challenges posed by Internet research. Further, professional and public dialogue needs to continue in order to engender a greater understanding of the unique features of the Internet and their impact on human subject protection policies and guidelines.

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## IN THE NEWS

### **NIH RELEASES GUIDELINES FOR STEM CELL RESEARCH**

On December 2, 1999, the draft of the National Institutes of Health guidelines for research involving human pluripotent stem cells was posted to the *Federal Register* (Volume 64, Number 231, pages 67576-67579). NIH will receive public comment until January 31, 2000.

The guidelines state that federal funds should not be used for the initial isolation of the cells from human embryos remaining from infertility treatments, but that these funds can be used for research on cells derived from such embryos. Additionally, the document describes mechanisms for oversight, including the formation of a Human Pluripotent Stem Cell Review Group (HPSCRG). This group will have several responsibilities, including the review of documentation of compliance with all of the guidelines. HPSCRG will meet publicly, and the trigger for its meetings will be “the use of a newly derived line of human pluripotent stem cells that has not been reviewed previously by the HPSCRG in a public process or when an investigator proposes a protocol for the derivation of a new human pluripotent stem cell line from fetal tissue.”

The NIH guidelines for federal funding differ in some respects from those issued by the National Bioethics Advisory Commission. Using ethics arguments rather than a legal argument, NBAC had concluded that it should be permissible to use federal funds for the initial isolation of stem cells in addition to subsequent use. The NIH’s recommendations for oversight, however, are not unlike those in the NBAC report, in that both call for local and national-level reviews. In both cases, the recommendations have generated criticism from several groups who oppose any research using human embryos, and as well from several Members of Congress. These concerns will be aired more publicly if Congress takes up human embryo research issues as they apply to stem cell therapies.

In addition to NIH and NBAC, the American Association for the Advancement of Science (collaborating with the Institute for Civil Society) has also released a report on stem cell research issues (<http://www.aaas.org/spp/sfirl/projects/stem/main.htm>). The AAAS report also recommends against the funding of the initial isolation of stem cells from embryos, although, in contrast to the arguments of the NIH, for practical rather than legal reasons. Further, and distinguishing the AAAS report from both the NIH and NBAC reports, AAAS recommends at least for now no new oversight bodies, believing that current federal regulations and professional control mechanisms provide a sufficient framework for proceeding with human stem cell research.

### **NEW REGULATIONS FOR INCREASING PATIENT PRIVACY PROTECTION**

In October 1999, the Clinton Administration proposed new regulations that would, among other things, expand the responsibilities of Institutional Review Boards (IRBs). The regulations are the first of their kind in protecting the privacy of electronically transmitted or stored medical records.

Under the new rules, IRBs would be required to insure that study investigators set up adequate plans to guard against the improper use or disclosure of information that could identify patients. They also broaden the responsibilities of IRBs beyond research in the publicly funded sphere to those in the private sector. For hospitals and other health-care providers lacking IRBs, they would be required to set up ‘privacy boards’ that would decide whether to release confidential data to researchers. While insuring patient privacy, the proposed regulations also take into account the need for release of such data for research purposes. IRBs and privacy boards will be allowed to release medical information without patient’s consent for certain research studies where obtaining such consent would be impractical. An example would include studies where medical records of thousands of patients are needed. Since the proposed regulations cover only healthcare providers, they would not prevent researchers from re-releasing confidential information to other researchers for use in other studies.

The proposed regulations are in response to demands by consumer advocates who worry about inappropriate use of patient’s medical records for such purposes as direct marketing and employment screening. The Department of Health and Human Services undertook the task of drafting the regulations after Congress missed a self-imposed August 1999 deadline to pass a medical privacy law. A 1996 law authorized the Administration to issue medical privacy rules if Congress missed its deadline. The draft regulations were published in the Federal Register on November 3, 1999 and provide a 60-day comment period.

The Institute of Medicine is undertaking a study of ways that IRBs currently protect against disclosure of personal health information in health services research in order to determine whether there are any “best practices” that could be applied broadly. The study is expected to be completed in the summer of 2000.

### **CODE OF ETHICS FOR ELECTRONIC HEALTHCARE INDUSTRY**

In November 1999, two different online healthcare organizations announced plans to develop ethical guidelines for

dissemination of “reliable, safe, and trustworthy” health information on the Web. Both organizations, the Health Internet Ethics and the Internet Healthcare Coalition represent for-profit companies, not-for-profits, academic journals, advocacy groups, and other Web-based medical information services.

The guidelines are intended to protect both consumers and the commercial entities that provide the medical information. This self-imposed code is in response to criticisms of the online health industry in the wake of Web-related lawsuits and other negative publicity. The ethical guidelines are expected to focus on site content, advertising, and privacy issues governing e-healthcare.

The Health Internet Ethics or Hi-Ethics, an alliance formed as a result of a meeting convened by former Surgeon General C. Everett Koop, will develop a code of ethics that will evaluate reliability of consumer health information currently on the Web and establish guidelines separating advertising and health information more clearly. The Internet Healthcare Coalition, prompted by George D. Lundberg, editor-in-chief of Medscape, is also crafting a broad-based ethics code. According to Lundberg, an established code of ethics will create trust among consumers and ensure that Web sites are playing by a common set of rules. The electronic healthcare sector has been criticized for lax standards in providing medical advice and in filling prescriptions.

### **SHARING IS GOOD, NIH DECLARES**

The National Institutes of Health has issued final Principles and Guidelines for obtaining and disseminating biomedical research resources funded by NIH research grants ([http://www.nih.gov/od/ott/RTguide\\_final.htm](http://www.nih.gov/od/ott/RTguide_final.htm)). The final policy follows a proposal announced in May [see [PER, XII, Spring 1999](#)]. The objectives of the Principles and Guidelines are to assist NIH grantees in determining: (1) reasonable terms and conditions for making NIH-funded resources available to scientists in the public and private sectors, and (2) restrictions to accept as a condition of receiving access to research tools for use in NIH-funded research. While the rules apply only to NIH-funded researchers, NIH hopes they “they will be adopted by the larger research community....”

In assessing whether a resource funded by NIH falls under the new policy, grantees should determine whether: “(1) the primary usefulness of the resource is as a tool for discovery rather than an FDA-approved product or integral component of such a product; (2) the resource is a broad, enabling invention that will be useful to many scientists [or companies], rather than a project or product-specific resource; and (3) the resource is readily useable or distributable as a tool rather than the situation where private sector involvement is necessary or the most expedient means for developing or distributing the resource.”

The policy articulates four fundamental principles that should govern the sharing of research tools associated with NIH-funded research. First, scientists “have an obligation to preserve research freedom, safeguard appropriate authorship, and ensure timely disclosure of their...findings....” To accomplish that, scientists should “avoid signing agreement that unduly limit the freedom of investigators to collaborate and publish, or that automatically grant co-authorship or copyright to the provider of a material.” The policy acknowledges, however, that “reasonable restrictions,” such as “brief delays in publication” to allow for the filing of patent applications or to ensure that confidential information is adequately protected, “are understood and accepted.” Nevertheless, the policy stresses that “requirements for editorial control, approval of publications, or withholding of data all undermine the credibility of research results and are unacceptable.”

A second Principle states that NIH grantees “are expected to maximize the use of their research findings by making them available to the research community and the public, and through their timely transfer to industry for commercialization.” The policy cautions that “where the subject invention is useful primarily as a research tool, inappropriate licensing practices are likely to thwart rather than promote utilization, commercialization and public availability of the invention.” The policy stresses that “licenses should be crafted to fit the circumstances, with the goal of ensuring widespread and appropriate distribution of the final tool product.”

The third Principle emphasizes that grantees “should take every reasonable step to streamline the process of transferring their own research tools freely to other academic research institutions....” The policy recognizes that providers risk “loss of control over a proprietary research tool that, once shared with a non-for-profit Recipient for academic research, results in commercialization gains to the providers’ for-profit competitors.” Grantees “must be

sensitive to this legitimate concern if for-profit organizations are expected to share tools freely.” In turn, for-profit organizations “must minimize the encumbrances they seek to impose upon not-for-profit organizations for the academic use of their tools. Reach-through royalty or product rights, unreasonable restraints on publication and academic freedom, and improper valuation of tools impede the scientific process whether imposed by a not-for-profit or for-profit provider of research tools.”

The fourth Principle supports the goal of “widespread, timely distribution of tools for further discovery.” In cases where for-profit organizations seek access to research tools for “internal use,” grantees “are encouraged to transfer research tools developed with NIH funding to such institutions without seeking option rights or royalties on the final product.”

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## ETHICS, LAW AND PUBLIC POLICY

### NEW PLANS TO INVESTIGATE RESEARCH MISCONDUCT AND IMPROVE RESEARCH INTEGRITY

by Rachel J. Gray

*Rachel J. Gray is a Program Associate with the American Association for the Advancement of Science Program on Scientific Freedom, Responsibility and Law. She received her masters in bioethics from Case Western Reserve University.*

#### **Introduction**

Since the 1980's, with the disclosure of four cases of research misconduct at major research institutions, issues surrounding research misconduct and methods of preventing it has been a topic of great interest to the US public and the scientific community. To regain/sustain public trust in science, the government has taken several actions over the years to pursue allegations of research misconduct and promote research integrity. The most recent activity occurred on October 14 when the US Office of Science and Technology Policy (OSTP) proposed a new government-wide federal policy on research misconduct to protect the integrity of the research record.(1) The policy proposes a definition of research misconduct and establishes guidelines and procedural safeguards for responding to allegations of research misconduct. OSTP solicited public comment on the proposed policy and procedures through December 13.

In addition to the OSTP policy, on October 22, Secretary Donna E. Shalala of the US Department of Health and Human Services announced that she had accepted the recommendations of the Review Group on Research Misconduct and Research Integrity to improve research integrity and prevent research misconduct, based on the work completed by the Review Group in July 1999.(2) In November, the HHS Assistant Secretary for Health directed public Health Service agency heads to implement the recommendations of the Review Group by the start of Fiscal Year 2001.

On November 10, AAAS convened its Professional Societies Ethics Group meeting on the new proposals. One week later, the proposals were the focus of discussion at a day-long town hall meeting at the National Academy of Sciences. The OSTP policy and the HHS report are the focus of this essay.

#### **Background**

In April 1996, OSTP, through the Committee on Fundamental Science and the National Science and Technology Council, established the Research Integrity Panel (RIP), consisting of representatives from the major research agencies. This panel was charged with developing a definition of research misconduct, as well as establishing procedural guidelines for handling allegations. The panel's recommendations have been under review since 1997. The RIP prepared the first draft of the OSTP policy, and in May 1999 a government-wide policy on research misconduct was developed for subsequent public comment. The proposed OSTP policy is a result of an extensive consultative process with those major research agencies of the federal government.

#### ***What the OSTP Policy Covers***

The proposed OSTP policy is divided into five sections: I) Research Misconduct Defined; II) Findings of Research Misconduct; III) Responsibilities of Federal Agencies and Research Institutions; IV) Guidelines for Fair and Timely Procedures; and V) Actions. One of the most discussed and acclaimed parts of the policy is its unifying definition of research misconduct. Before the policy's definition, federal agencies that sponsor research all used slightly different definitions of scientific misconduct. Now, the OSTP policy replaces this variation with a uniform definition. Unlike most agency definitions, the new federal-wide definition would explicitly include "plagiarism of ideas" that occur in the course of peer review of a manuscript and research proposals.

The policy defines research misconduct as, " fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results." Fabrication is "making up results and recording or reporting them," falsification is defined as "manipulating research materials, equipment, or processes, or changing or omitting data or research results such that the research is not accurately represented in the research record," and plagiarism is the "appropriation of another person's ideas, processes, results, or words without giving appropriate credit, including those obtained through confidential review of others' research proposals and manuscripts." The policy covers "all basic, applied, and demonstration research in all fields of science, engineering, and mathematics." The research record is defined as, "the record of data or results that embody the facts resulting from scientific inquiry, and includes, for example, laboratory records, both physical and electronic, research proposals, progress reports, abstracts, theses, oral presentation, internal reports, and journal articles."

The policy applies to all federally funded research, including intramural research, research conducted or managed by contractors, universities, or research institutes. While independent researchers and small research institutions are also subject to the policy, "it is understood that they may not have the institutional structures in place to meet the full range of responsibilities outlined in this policy." The HHS report recommends the development of a consortium-based approach used by awardee institutions that do not have the capacity to conduct the fact-finding process, or have inadequate institutional or organizational capacity. In addition, the consortia proposed in the report would work to promote federal educational efforts.

To promote an atmosphere of honest reporting, the policy proposes guidelines for protecting whistle blowers and the accused. As proposed, the guidelines encourage universities and other recipients of federal grants to protect the confidentiality of whistle blowers and to promptly inform those accused about the charges and give them a chance to respond.

### ***What the Policy Does Not Cover***

The policy does not supersede existing government policies, criminal or civil laws, or procedures for addressing other misconduct that might occur during the course of research. This would exclude misconduct in the treatment of human research subjects or the mistreatment of laboratory animals in research. In addition, the policy does not limit agency or institutional policies and prerogatives in addressing other forms of misconduct, including those that might occur in the course of conducting research, such as the misuse of public funds. The policy directs agencies to address these other issues as authorized by law and as appropriate to their mission and objectives. Also not covered by the policy are authorship disputes, unless they involve plagiarism, and honest error or honest differences of opinion.

### **HHS Report**

Since ORI's founding in 1992, it has been charged with investigating scientific fraud. However, the HHS Review Group on Research Misconduct and Research Integrity's report modifies ORI's role. The findings and recommendations of the report are divided into four sections: A) the Definition of Misconduct; B) Inquiries and Investigations; C) Procedural Issues; and D) Special Considerations.

Changes in ORI's mission are found in Recommendation 11 of the report, which states that, "the principal responsibility for oversight of institutional processes, education, standards setting, and attention to HHS's interests in policing research misconduct should be vested in ORI." If this recommendation is implemented, the role, mission and structure of ORI will change to one principally of "oversight, education, and review of institutional findings and recommendations." Instead of conducting investigations, ORI would shift its focus to training and educating institutions and researchers to comply with the most current rules on research misconduct. ORI would also provide on-site technical assistance to institutional investigations when needed.

Secretary of HHS, Donna Shalala, plans to transfer ORI's authority to conduct investigations to the HHS Inspector General's Office. In the past, some researchers expressed concern that ORI had a conflict of interest since the office used to investigate misconduct allegations and decide on sanctions. The report recommends that the Inspector General's Office report its findings to HHS Assistant Secretary for Health, who will decide on sanctions.

Guilt will be determined by a preponderance of evidence, and researchers can still appeal to the Departmental Appeals Board (DAB), which would include two scientists and an attorney. Three years after implementation, HHS will consider whether a hearing in non-debarment cases should be eliminated.

The report also recommends that "Institutions and members of awardee institutional inquiry and investigations panels should be provided qualified immunity from tort or related actions" for carrying out responsibilities related to reviewing allegations of research misconduct. The report notes that potential legal actions can be a "significant disincentive" to serve on these institutional panels.

As reported in the December 1999 issue of the ORI Newsletter, Secretary Shalala endorsed two additional actions beyond those recommended by the HHS Review Group. One is the publication in the *Federal Register* of a Notice of Proposed Rule Making on the protection of whistleblowers, and the other is to extend the training requirement on the responsible conduct of research to all persons engaged in research or research training supported by PHS funds. Extension of the training requirement on the responsible conduct of research was recommended by the Commission on Research Integrity (3) and endorsed by an HHS working group that reviewed Commission recommendations for the Secretary. According to Chris Pascal, Acting Director, ORI, "The expanded focus of ORI on the responsible conduct of research, the promotion of integrity, and the prevention of misconduct gives ORI additional opportunities to build partnerships with the research community to promote research integrity and strengthen the research enterprise."

## Conclusion

The end result of these various proposals and actions will be that policies dealing with research misconduct will be uniform across the government. The new documents add much needed clarity to understanding distinctive roles and responsibilities of the federal government and local institutions. While some questions remain, and it is hoped that the final OSTP policy will answer them, the proposed changes mark the beginning of a new era of partnership between the government and academe and, so far at least, are being well received in the research community.

## References

1 Office of Science and Technology Policy, Proposed Federal Policy on Research Misconduct to Protect the Integrity of the Research Record. *Federal Register* Vol. 64, No. 198/Thursday, October 14, 1999/Notices.

2 Department of Health and Human Services. Report of the Department of Health and Human Services Review Group on Research Misconduct and Research Integrity. July 1999.

3 *Integrity and Misconduct in Research*. Department of Health and Human Services. Report of the Commission on Research Integrity. November 1995.

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## ANNOUNCEMENTS

The next target date for proposals to **Societal Dimensions of Engineering, Science, and Technology** (SDEST) is February 1, 2000. The Program focuses on improving knowledge of ethical and value dimensions in science, engineering, and technology, and on improving approaches and information for decision making about investment in science, engineering, and technology. The program is interested in proposals that identify and evaluate the implications of different strategies for support of scientific and engineering research and innovation on quality of life. It is also particularly interested in encouraging research on research ethics, and analysis of ethical questions surrounding new developments in biotechnology and information technology. Persons interested in investigating social aspects of information technology should also check the new Foundation-wide program, Information Technology Research, which includes a component focused on these issues - <http://www.nsf.gov/pubs/1999/nsf99167/nsf99167.htm>. Biotechnologies and information technologies are transforming social and physical landscapes. The newly revised

announcement can be accessed at <http://www.nsf.gov:80/cgi-bin/getpub?nsf9982>; more program information is available at <http://www.nsf.gov:80/sbe/sber/sdest/start.htm>. Contact Rachele D. Hollander, SDEST Program, NSF, Room 995, 4201 Wilson Blvd., Arlington VA 22230; (703) 306-1743; fax (703) 306-0485; Email [rholland@nsf.gov](mailto:rholland@nsf.gov)

During the summer of 2000, the **Ethics Institute at Dartmouth College** will offer an intensive two-week program on teaching the ethical, legal, and social implications of the Human Genome Project. The course aims to train faculty to teach genetic literacy and an introduction to key ethical, legal, and social implications of genome research. Participants in the Faculty Summer Institute 2000 will be competitively selected from a pool of applicants from liberal arts colleges and universities who demonstrate a commitment to teaching with a multidisciplinary approach. Applications are being solicited from two-person interdisciplinary teams and individual faculty. Minority and women faculty are encouraged to apply. This program is pending final approval of funding from the National Institutes of Health. Contact Barbara J. Hillinger at Dartmouth College, 6031 Parker House, Hanover NH 03755, (603) 646-1263; Fax (603) 646-2652; Email [barbara.hillinger@dartmouth.edu](mailto:barbara.hillinger@dartmouth.edu).

A **World Wide Web Help-Line** intended to provide advice for engineers, scientists, and trainees encountering ethical problems in their work is now available at <http://onlineethics.org/helpline/>. The principal goal of this Help-Line is to support scientists and engineers to maintain high ethical standards and to act wisely when confronted with multiple and potentially conflicting responsibilities, even where this may lead to conflicts with organizational superiors. The Help-Line is not intended to deal with employee grievances unrelated to ethics, and will not give legal advice. The Ethics Help-Line is sponsored by the Online Ethics Center for Engineering and Science and is cosponsored by the National Institute for Engineering Ethics (NIEE). The Help-Line responders are experienced engineers, scientists and ethicists knowledgeable about the ethical problems faced by engineers and scientists. These include the people who were the principal responders for the ethics hotline operated successfully for a year by the Institute of Electrical and Electronic Engineers (IEEE). Contact Caroline Whitbeck, Online Ethics Center for Engineering & Science, Philosophy Department and Department of Mechanical and Aerospace Engineering, Case Western Reserve University, Cleveland, Ohio 44106-7119; 216-368-2810; WWW <http://onlineethics.org>.

The **Undergraduate Conference in Everyday Ethics** (UCEE), an annual conference that highlights the ethical thoughts and writings of undergraduate students, is seeking papers for its March 31, 2000 conference. Created at Wilberforce University, one of the oldest Historically Black Universities, the Conference is especially designed to foster an appreciation for the practical moral dilemmas that people face during the ordinary course of a day (i.e. lying, gossip, whistle blowing, loyalty, etc.). Any topic in practical ethics is welcome and students are encouraged to critically revisit and submit papers written in previous seminars. UCEE is also intended to expose students in other degree programs to a candid, scholarly engagement with moral problems that traverse all disciplines through the writings of their peers. Papers should not exceed 12 double-spaced pages in length. Selections will be determined by blind review; therefore no identifying references should appear within the body of the paper. Three copies of the paper and a separate title page (with name, address, phone number, email, and institutional affiliation) should be sent to Darryl Scriven and postmarked by February 1, 2000. Contact Darryl Scriven at Department of Philosophy and Religion, Wilberforce University, Wilberforce, OH 45384; (937) 708-5668; Email [dscriven@wilberforce.edu](mailto:dscriven@wilberforce.edu).

**Princeton University** will convene a symposium to mark the 10th Anniversary of its University Center for Human Values Program. The symposium, "Questioning Values. Defending Values," is scheduled for April 27-28, 2000. There will be roundtable discussions featuring a wide range of scholars addressing the following questions: • What's Public? What's Private? • What Do Citizens Owe Their Constitutional Democracy? • How Should We Address the Greatest Evils and Injustices of Our Time? • Should Popular Culture Support Morality? • How Can Values Be Taught by Universities? Contact University Center for Human Values, Princeton University, Louis Marx Hall, Princeton, NJ 08544; (609) 258-4798; Email [values@princeton.edu](mailto:values@princeton.edu); WWW <http://www.princeton.edu/values>.

The **Office of Research Integrity** (ORI) is seeking abstracts for its conference on "Research on Research Integrity." The conference will be held in the Washington, DC area on November 18-20, 2000 and intends to discuss "emerging challenges for the responsible conduct of research." Abstracts for papers and poster sessions are due by April 30, 2000. Preference will be given to research on research integrity, but interpretative literature reviews, theoretical papers, and identification of research areas with high potential for addressing (1) the responsible conduct of research, (2) the promotion of research integrity, (3) the prevention of misconduct, and (4) the handling of allegations of scientific

misconduct are welcomed. Conference participants will also discuss programs undertaken to promote research integrity, assess their effectiveness, and consider ways to improve current practices. Abstracts must include (1) a summary of the proposed presentation (including a bibliography) of no more than 1,000 words, and (2) a résumé or biographical sketch not to exceed 100 words. Submissions by e-mail are strongly encouraged; if sent by regular mail please submit six copies. Successful applicants will receive a waiver of any registration fees. Successful applicants will be notified by June 1, 2000. Contact Nicholas Steneck, ORI, 5515 Security Lane, Suite 700, Rockville, MD 20852; Email [nsteneck@osophs.dhhs.gov](mailto:nsteneck@osophs.dhhs.gov).

The **International Programme in Bioethics Education and Research** will its Advanced European Bioethics Course on April 6-8, 2000 in Nijmegen, Netherlands. Specialists from different countries will discuss ethical aspects of palliative care. Subjects include Evolution of Palliative Care; Death and Dying; Ethics and Pain Management; and Ethical Issues in Scientific Research of Palliative Care. Contact B. Gordijn, Univeristy of Nijmegen, Dept. 232 Ethics, Philosophy and History of Medicine, PO Box 9101, 6500 HB Nijmegen, Netherlands; [0031] 24-3615320; Fax [0031] 24-3540254; Email [b.gordijn@efg.kun.nl](mailto:b.gordijn@efg.kun.nl); WWW [http://www.azn.nl/scientist/Departments/Ethics\\_Philosophy\\_and\\_Hist-ory\\_of\\_Medicine/Frames-Ethics\\_Philosophy\\_and\\_History\\_of\\_Medicine.html](http://www.azn.nl/scientist/Departments/Ethics_Philosophy_and_Hist-ory_of_Medicine/Frames-Ethics_Philosophy_and_History_of_Medicine.html)

The **American Association for the Advancement of Science (AAAS)** and the **Office of Research Integrity**, U.S. Department of Health and Human Services, are convening a conference in Washington, DC on April 10-11, 2000 on "The Role and Activities of Scientific Societies in Promoting Research Integrity." Focusing on issues of keen interest to scientists, conference participants will discuss efforts undertaken by scientific societies to promote research integrity, assess their effectiveness, and consider ways to improve current practices. Examples of the issues likely to be explored at the conference include: • What ethics standards and policies are currently in place in professional societies and how do the societies communicate these standards to members and students? • What range of professional conduct is covered by the standards? • How do/should members use the standards or policies in their work? In training new or future members? • What support structures (e.g., ethics committees, hotlines) do/should professional societies employ to promote research integrity? • How effective are the standards and support structures? • What factors (e.g., law, resources, internal pressures) constrain or facilitate action by societies? The conveners expect that the meeting will produce a research and action agenda for advancing the scientific societies' role in fostering research integrity. Contact Sanyin Siang, AAAS, 1200 New York Avenue, NW, Washington, DC 20005; Fax (202) 289-4950; Email [societies@aaas.org](mailto:societies@aaas.org); WWW <http://www.aaas.org/spp/sfrr/projects/integrity.htm>

The **American Association for the Advancement of Science (AAAS)** and the **Office of Research Integrity**, U.S. Department of Health and Human Services, are convening a one-and-a-half-day practicum on research misconduct on June 4-5, 2000 in St. Charles, IL. At "Responding to Allegations of Research Misconduct: Inquiry, Investigation and Outcomes," participants will have ample opportunity to obtain hands-on experience and interact with colleagues and government officials. The practicum will examine the implications for research institutions of the proposed federal-wide definition of research misconduct and policies.

Other topics to be covered include what to do when someone brings an allegation, who should be involved, what evidence needs to be gathered, how to conduct an inquiry and investigation, how institutional regulations relate to those of the federal government, how to secure and retain records, and who to inform of the outcome. The practicum will consist of both plenary and breakout sessions incorporating case studies with speakers experienced in dealing with cases at institutions as well as officials responsible for implementing federal regulations. A resource notebook including background materials, government documents, model policies and procedures, and other information will be distributed. This will be the sixth in a series of Practicums that AAAS has organized, beginning in 1992. Contact Rachel Gray, AAAS, 1200 New York Avenue, NW, Washington, DC 20005; (202) 326-7016; Fax (202) 289-4950; Email [rgray@aaas.org](mailto:rgray@aaas.org), WWW <http://www.aaas.org/spp/sfrr/projects/practica.htm>

The report of the **American Association for the Advancement of Science** and the **Institute for Civil Society** project on Stem Cell Research and Applications is now available online and in print format. The project examines the various issues in the ongoing debate regarding the potential uses of stem cells for generating human tissues. Contact Michele Garfinkel at AAAS, 1200 New York Avenue, NW, Washington, DC 20005; Email [mgarfink@aaas.org](mailto:mgarfink@aaas.org); WWW <http://www.aaas.org/spp/sfrr/projects/stem/main.htm>.

