

Professional Ethics Report



ADVANCING SCIENCE, SERVING SOCIETY

Publication of the American Association for the Advancement of Science, Scientific Freedom, Responsibility & Law Program in collaboration with the Committee on Scientific Freedom & Responsibility, Professional Society Ethics Group

VOLUME XX

NUMBER 1

Winter 2007

NOT AN IPOD

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Melissa Pollak is currently serving as an Executive on Loan to AAAS from the National Science Foundation, where she was responsible for preparing the “public attitudes” chapter of the National Science Board report, Science and Engineering Indicators. Any opinions, findings, conclusions, or recommendations expressed in this article are those of the author, and do not necessarily reflect the views of the National Science Foundation.

Before the iPod Nano was introduced in September 2005, almost no one had heard of nanotechnology. Not much has changed. Ask the average person on the street if he or she knows what nanotechnology is, and the response you’re most likely hear will include a reference to Apple Computer’s tiniest version of its wildly popular entertainment gadget.

The iPod response caused a few chuckles at a May 2006 workshop, “Public Participation in Nanotechnology,” where the public’s lack of awareness of nanotechnology was a major topic of discussion. Indeed, polls indicate that most people have heard nothing, or almost nothing, about nanotechnology. See <http://nanotechproject.org/78>.

Experts Gather to Discuss Public Participation in Nanotechnology

A workshop was sponsored by the Nanoscale Science, Engineering, and Technology (NSET) Subcommittee of the National Science and Technology Council (NSTC), the Cabinet-level panel of experts that advises the President on science, space, and technology policies and programs. NSET is made up of representa-

tives of the 25 federal agencies involved in the National Nanotechnology Initiative (NNI). It is responsible for coordinating planning, budgeting, and implementation of federally-funded nanoscale research and development programs. See <http://www.nano.gov/html/about/nsetmembers.html>.

The purpose of the two-day workshop was to “begin a dialogue on how the public can be engaged in nanotechnology-related issues and decisions” and to consider best practices in communication and key issues for nanotechnology-related public participation. Attendees represented academia, government, industry, the media and other sectors. See <https://nnc.nano.gov/p2/>.

Why such interest in including the public in decision-making in an area of science and technology (S&T) about which almost no one has heard? The answer lies in lessons learned from past experiences where public trust and risk perceptions were not anticipated, taken into account, and immediately and thoroughly addressed. The examples most often cited are nuclear energy and GM (genetically modified) food. Essentially, public opposition to these technologies has had a limiting effect on their use in addressing intractable problems, namely, energy shortages and world hunger.

Although no one knows exactly what risks and dangers could be associated with nanotechnology, the potential exists for a public backlash should new products and processes lead to questions and concerns about their effects on health and safety. The science and public policy community is thinking ahead; it wants to make sure that the public is onboard. The goal is to avert the mistakes of the past by engaging

the public now, or “upstream.”

Government Funding

Congress has also made public engagement a top priority. In its report accompanying FY 2006 appropriations for several agencies, the Senate specifically encouraged the National Science Foundation (NSF), the lead agency in the government’s National Nanotechnology Initiative, “to make sure that public misconceptions of this field are minimized.”

In addition, Congress is providing the dollars to support it. The 21st Century Nanotechnology Research and Development Act, which became law in 2003, includes a provision for “a research program to identify the ethical, legal, environmental, and other societal concerns related to nanotechnology.” Five departments and agencies — NSF, the Department of Energy (DOE), the National Aeronautics and Space Administration (NASA), the National Institutes of Standards and Technology (NIST) of the Commerce Department, and the Environmental Protection Agency (EPA) — were authorized to spend \$3.7 billion over four years on various R&D programs, with NSF and DOE the largest recipients. See <http://resources.committee.house.gov/science/press/109/21stNanoAct.pdf#search=%22%22Nano%20Research%20and%20Development%20Act%22%22>.

NSF is now supporting several research and educational initiatives. As part of its Nanotechnology in Society program, grants were awarded to four universities— Arizona State University (\$6.2 million), the University of California at Santa Barbara (\$5 million), Harvard/

(Pollak continued from page 1)

UCLA (\$1.7 million), and the University of South Carolina (\$1.4 million). See http://www.nsf.gov/news/news_summ.jsp?cntn_id=104505. Activities supported by those grants include:

- Studying how to include the public in decision-making;
- Engaging the public and researchers in deliberative and participatory forums;
- Monitoring risk perception, changing values, and societal response; and
- Examining the role of images in communicating about nanotechnology.

Engaging the Public

Representatives from each of the universities spoke at the workshop. They, along with other speakers and participants, explored a wide range of issues. Below are some of the questions given to participants for discussion in the break-out sessions, followed by some of the points made while attempting to answer them:

How do scientists, science communicators, and policy makers include a largely uninformed public in the decision-making process? How do science communicators engage the unengaged?

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The *Professional Ethics Report* is published quarterly by the Scientific Freedom, Responsibility and Law Program in collaboration with the Committee on Scientific Freedom and Responsibility and the Professional Society Ethics Group, American Association for the Advancement of Science, 1200 New York Avenue, NW, Washington, DC 20005, (202) 326-6236; Fax (202) 289-4950; E-mail: ewilliam@aaas.org; WWW <http://www.aaas.org/spp/dspp/sfrl/sfrl.htm>. Back issues of *Professional Ethics Report* are on-line at <http://www.aaas.org/spp/dspp/sfrl/per/per.htm>

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- There is a need to increase public understanding of science and scientific literacy in general. Scientists and science communicators could be doing more to inform and educate the public. One of the problems is that people have no attitudes at all toward nanotechnology – because so few people know what it is.
- It's difficult to engage the public when the public is neither knowledgeable about nor interested in the subject.
- Public outreach involves more than promoting pro-science views among the general public or simply improving literacy.
- Every effort should be made to include the public in the decision-making process. That is not the same as conducting a public relations campaign. S&T decisions embody broad values, such as priorities, risks, and (in)equities. Decision-makers have an obligation to listen to the public and understand their questions and concerns, because their risk perceptions/beliefs will be key to understanding their behavior.
- An agenda needs to be set for public outreach. But there is no single, one-size-fits-all approach for engaging the public, because there are a lot of publics and jurisdictions. One of the challenges is to identify the various publics to be engaged.
- Public engagement is expensive. Canada invests much more than the United States in it. NSF is eager to fund consensus conferences.

Who needs to be listening to the concerns of the public?

- Public outreach involves effective communication with all stakeholders. The list of stakeholders is lengthy, and includes lawmakers, regulators, policy makers, industry, scientists, etc. It includes those who are in control of making the decisions and those who are not.
- Currently, public debate about

Letters to the Editor: The editors welcome comments from our readers. We reserve the right to edit and abridge letter as space permits. Please address all correspondence to the deputy editor.

scientific issues is dominated by interest groups and other partisan players; scientific views rarely become part of the discussion.

- Science news should not be limited to information about new studies; it should also include coverage of issues with public policy considerations.
- Industry may be one step ahead of the federal government in that it has already been working with special interest groups on nanotechnology issues – as a way of engaging the public on nanotechnology.

How do decision-makers communicate with the public? How are risk perceptions formed, and what issues will affect risk perceptions related to nanotechnology? How are decisions made under conditions of uncertainty?

- Building trust is the most effective way of addressing fear and risk perceptions. The higher the level of trust, the lower the level of fear.
- The public needs to trust the communicator, the organization that's supposed to protect it, the organization creating the risk – and the process.
- Research shows that the public places the least trust in industry and politicians, and has relatively high levels of trust in consumer groups and independent experts like doctors and academics.
- The public is more likely to reject a closed decision-making process than an open one. Keeping secrets is risky.
- An open dialogue should be maintained, along with respect for the audience's feelings. Audiences should not be manipulated or over-reassured. Communicators should focus on values first, ask the right questions, be inclusive, and "communicate on a human scale."
- When communicating risk, the old saying "actions speak louder than words" applies. Communicators should be careful to avoid making unsubstantiated claims about what the public knows and doesn't know about science.

(Pollak continued on page 3)

(Pollak continued from page 2)

- Science communicators need to be prepared to address concerns that may be generated by the entertainment media. For example, more people will be aware of the subject of nanotechnology when the movie version of the Michael Crichton novel *Prey* hits theaters.
- A single risk event or actual incident could change public attitudes overnight.
- It is important to acquire adequate feedback and evaluate the effectiveness of communication strategies.

What is the role of media in shaping public opinion?

- The public gets most of its information about science from the media, mostly from TV. Newspapers and the Internet are also important sources.
- Nanotechnology has received relatively little media coverage.
- Because people know very little about most issues, including scientific ones, media framing does more to influence public opinion than anything else. The same information, framed differently, can evoke different reactions. Thus far, most media frames have been positive, focusing on the economic benefits and scientific potential of nanotechnology. However, that may be changing.
- Scientists and reporters need to do a better job of communicating with each other – because science stories tend to get distorted in the press. Reporters tend to focus on what's newsworthy, and that tends to be what's controversial.
- More scientists need to know how to communicate effectively in plain English and should welcome the opportunity to work with journalists.

What does the public need to know about nanotechnology in order to participate meaningfully?

- Most engagement and outreach efforts are aimed at informing the public and building nanotech literacy.

- The information deficit model (of science communication) assumes that the more the public knows about science and technology, the more supportive it is. But that is not always the case.
- The public needs to know more about the potential risks and benefits, but it does not really need to know much about the science.

Public Outreach

The second day of the workshop was largely devoted to discussing ongoing outreach activities and efforts to inform and educate the public. Most of the work in this area is funded by NSF's Informal Science Education program (with additional financial support provided by 12 NSF research programs). This \$20 million, five-year effort is called the Nanoscale Informal Science Education Network. The Museum of Science in Boston, along with the Science Museum of Minnesota and the Exploratorium in San Francisco, were selected to create and lead this network, which will also include many other science museums and research institutions. Representatives of these organizations spoke at the workshop about their projects, which include:

- Interactive programs and exhibits;
- Live presentations and guest presenters that focus on inquiry-based learning;
- Immersive media such as planetariums and 3-D cinema;
- Visualization labs;
- Public forums for open discussion and debate;
- A media network to reach a broad audience;
- Websites that provide on-line access to exhibits, media, interactive activities, and live webcasts;
- Professional development efforts to foster collaboration between researchers and educators; and
- An online professional resource center to provide current information about nanotechnology education, tools and materials, research and evaluation, and other professional resources.

One way to measure the effectiveness of outreach and education activities is by audience size. Although these newly launched projects are expected to attract a significant number of visitors and partici-

pants, the overall number of people who are familiar with nanotechnology is likely to remain low.

When Nanotechnology Becomes A Household Word

What will make the general public become aware of nanotechnology? In the absence of some type of catastrophe, awareness is likely to increase when coverage in the mass media, especially television, increases.

Curious about nanotechnology's infiltration of popular culture, the author decided to query members of an online forum. Members of this group are all major fans of television, but they are atypical in that their online conversation is usually about the business and politics of television, not the latest plot twists in various shows. Most members of this group are men, and they are highly media savvy. The following question was asked:

Does anyone here recall any entertainment program with a storyline in which nanotechnology is mentioned? If you do, could you tell me the name of the show – and, if you remember, some thing about the plotline?

More than a dozen responses were received by the end of the day. Each person who responded mentioned at least one science fiction fantasy show or episode, including *Star Trek*, *Stargate*, *Jake 2.0*, *The Outer Limits*, *Max Steel*, *Doctor Who*, *Gargoyles*, *Mystery Science Theater 3000*, *Red Dwarf*, and even a show for kids, *Strange Days at Blake Holsey High*. Based on the responses, it would seem that every science fiction series has had at least one storyline that featured nanotechnology.

No series not in the science fiction/fantasy category was mentioned. No one named a drama series such as *The West Wing* (which regularly featured science-related storylines) or a situation comedy, both of which usually have much larger audiences than science fiction series, because, unlike science fiction, they are usually shown on the broadcast, not

(Pollak continued on page 4)

(Pollak continued from page 4)
cable, networks. However, a few weeks later, a member noted that *The Daily Show* had featured a segment devoted to nanotechnology. A few studies have documented that TV comedy shows, such as *The Daily Show*, *Saturday Night Live*, and late night talk shows, have become leading sources of news for young adults.

An online discussion of the responses led to the following exchange between the author and one of the members:

Author: The federal government is spending a lot of money on informing, educating — and “engaging” the public about nanotechnology. It’s trying to head off any public backlash should there be concerns about health and safety.

TV group member: Whoops. I think pretty much all of our suggestions were not exactly presenting nanotech in a positive light.

Author: So, what you’re saying is that TV isn’t making it easy for scientists and government officials who want the public to believe that nanotechnology is good for them.

TV group member: Well, isn’t it true that most fictional television presents science as a dark art and scientists as likely to go rogue and try to kill us all? I must admit that I’ve never met a mad scientist, but if I did, I’d probably be very cross with him.

Questions for the Regulators

Given the public’s lack of awareness of nanotechnology, it is probably not a good idea at this time to place too much faith in polls. As Jack Shafer, *Slate*’s editor at large, recently remarked, “[w]hen you gather opinions from people on subjects of which they know little or nothing, you’re only collecting interesting garbage” (<http://www.slate.com/id/2102303/>). Nevertheless, surveys have been conducted. For example, an August 2006 survey (<http://nanotechproject.org/78>) indicated that, although many people had yet to form an opinion about the tradeoff between the risks and benefits of nanotechnology, among those who had, most thought that risks would outweigh benefits. Moreover, when those having the least

familiarity with nanotechnology were fed a little knowledge about the subject, they were even more likely to say that risks outweigh benefits.

In October 2006, the Food and Drug Administration (FDA) was in the news. First, the Woodrow Wilson Center issued a report questioning the ability of the FDA to adequately regulate products made with nanotechnology, concluding that it lacked both the authority and the funding to ensure the safety of the public. See http://www.wilsoncenter.org/index.cfm?fuseaction=news.item&news_id=202942. During the same month, a meeting of experts was held at the FDA to discuss how the agency should regulate the new products. The number of nanotechnology-based products on the market now exceeds 300.

Given these developments, it seems evident that the science policy community is on the right track in recognizing the need for public education and engagement. But it could take awhile before the average person on the street knows that the iPod Nano has nothing to do with nanotechnology.

IN THE NEWS

TSHWANE DECLARATION OF INFORMATION ETHICS

The African Conference on Information Ethics was held in Pretoria, South Africa, February 5-7, 2007, where attendees issued a “Declaration of Information Ethics” that provides a framework for the sharing of academic knowledge throughout Africa.

The Declaration notes the “urgent necessity of ethical reflection on norms and values for the emerging Information Society in Africa,” and states the belief of the Conference that “the mobilization of academic research on Information Ethics in Africa is crucial for sustainable social, economic, technical, cultural, and political development.”

The Declaration considers information a “tool for promoting the goals of freedom, democracy, understanding, global security, peace and development, and should be used as such.” It maintains that “all people have equal rights as set out in the Univer-

sal Declaration of Human Rights. To exercise their human rights people need and should have access to information as well as the ability to benefit from it.”

“Indigenous knowledge and cultural diversity is a valuable contribution Africa can make to the global Information Society,” the Declaration concludes. “It should be preserved, fostered and enabled to enrich the world body of knowledge.”

Other institutions involved in the conference were UNESCO, the NEPAD e-Africa Commission, the International Centre for Information Ethics, the University of Pretoria, and the University of Wisconsin-Milwaukee. http://sangonet.org.za/portal/index.php?option=com_content&task=view&id=6418&Itemid=1

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HHS ISSUES NEW GUIDELINES FOR UNANTICIPATED PROBLEMS IN RESEARCH

The Department of Health and Human Services Office for Human Research Protections (OHRP) issued a report requiring that all “unanticipated problems” encountered in HHS-sponsored research involving humans be reported to HHS. This is distinct from “adverse events,” which may happen unexpectedly in research, but are reported under separate regulations.

The characteristics of unanticipated problems, as defined by the guidance, are events meeting all of the following criteria:

- A) unexpected in terms of nature, severity, or frequency,
- B) related or possibly related to the subject’s participation in the research, and
- C) places subjects or others at a greater risk of harm than was previously known or recognized.

Adverse events, on the other hand, “encompass both physical and psychological harms.” An adverse event must
(News continued on page 5)

(News continued from page 4)

meet all three criteria above to be classified as an unanticipated problem, and all such events must be reported.

While it may be difficult at times to determine whether an event was unanticipated or is related to the research, the report sets a few clear guidelines for determining whether the unanticipated event is “serious,” including that it: results in death, is life-threatening, results in or prolongs hospitalization, causes a disability, congenital anomaly/birth defect, or otherwise jeopardizes the subject’s health.

All unanticipated problems are to be reported to the Institutional Review Board. Those events that qualify as serious adverse events must be reported within one week of the investigator becoming aware, while all other unanticipated problems should be reported within two weeks.

<http://www.hhs.gov/ohrp/policy/AdvEvtGuid.htm>

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INTERNATIONAL SOCIETY FOR STEM CELL RESEARCH ISSUES NEW GUIDELINES FOR RESEARCH CONDUCT

The International Society for Stem Cell Research has issued a new set of “Guidelines for the Conduct of Human Embryonic Stem Cell Research.” The guidelines are “meant to emphasize the responsibility of scientists to ensure that human stem cell research is carried out according to rigorous standards of research ethics, and to encourage uniform research practices that should be followed by all human stem cell scientists globally.”

The report recommends that all experiments involving human embryonic stem cells be subject to review and approval by a body at the institutional, local, national, or international level. The reviewing bodies must consider the experiment through a process called Stem Cell Research Oversight (SCRO), which includes assessments of scientific rationale and merit of the proposal, relevant expertise of investigators, and

ethical permissibility and justification.

Types of research specifically banned by the group include “in vitro culture of any post-fertilization human embryos or organized cellular structures that might manifest human organismal potential... for longer than 14 days or until formation of the primitive streak begins,” “research in which any products of research involving human totipotent or pluripotent cells are implanted into a human or non-human primate uterus,” and “research in which animal chimeras incorporating human cells with the potential to form gametes are bred to each other.” The report also specifically prohibits reproductive human cloning.

For enforcement, the report recommends that journal editors “require a statement of compliance with [the guidelines]... and a statement that the research was performed after obtaining approvals following a suitable SCRO process.” Grant applicants should also demonstrate to their funding bodies that proposed research is in accordance with local and national laws as well as the ISSCR guidelines.

<http://www.isscr.org/guidelines/ISSCRhESCguidelines2006.pdf>

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TIGHTENING OF GENETIC TESTING IN SOUTH KOREA

With a market full of curious consumers, genetic testing in South Korea has become a booming business. Couples rush to DNA testing agencies to find out their potential marital harmony, while others seek out the personality characteristics and the appearance of their unborn children. Of the current 173 DNA laboratories in South Korea, many were found to be unlicensed and conducting expensive, illegal and unsafe tests. The regulations in place were vague and unenforceable, so authorities had no way to regulate the laboratories and protect consumer welfare. A National Assembly audit in October of last year prompted the Korean Health Ministry and the National Bioethics Committee to begin talks for creating new guidelines for both public and private DNA testing laboratories.

The new guidelines that were approved earlier this year imposed a ban on the genetic testing of 14 specific inheritable traits. These traits included a propensity toward obesity, violence, lung cancer, high blood pressure, hyperlipidemia, diabetes, osteoporosis, alcoholism, hypochondria, longevity, asthma, curiosity, intelligence and physical strength. Ministry official Yang Byung-Kook was quoted as saying, “We have made these guidelines after examining ethical as well as scientific aspects of genetic tests. We expect our new guidelines to establish proper use of genetic tests and help develop the related industry.”

Policies have been put in place to exempt research institutions from the testing ban. Each allowance is contingent on an approval from their Institutional Review Board.

Chung-a, Park. “Genetic Test Control to Be Tightened.” *The Korea Times*. 17 January 2007, online edition.

http://search.hankooki.com/times/times_view.php?term=genetic+test+control+to+be+tightened++&path=hankooki3/times/lpage/nation/200701/kt2007011718194411960.htm&media=kt

Hae-in, Shin. “Government Toughens rules on DNA tests.” *Korean Herald*. 18 January 2007, online edition. https://www.koreaherald.co.kr/archives/result_contents.asp?id=200701180047&query=dna_tests

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EUROPEAN GROUP ON ETHICS IN SCIENCE AND NEW TECHNOLOGIES REPORT TO THE EUROPEAN COMMISSION OPINION ON THE ETHICAL ASPECTS OF NANOMEDICINE, OPINION N° 21

The European Group on Ethics in Science and New Technologies (EGE) is an independent multidisciplinary advisory group composed of 14 members. Its role is to advise the European Commission on how ethical values should be taken into consideration in the preparation and implementation of legislation and policies by the European Community. On January 17, 2007, EGE

(News continued on page 6)

(News continued from page 5)
adopted Opinion 21 on the ethical aspects of nanomedicine.

In this opinion, the EGE recognizes the potential for nanotechnology in medicine through the development of analytical tools, imaging, materials, devices, novel therapeutic and drug delivery systems. However, its members expressed concern over health related issues of nanomedicine, and underscored the importance of safety evaluations of nanomedical products and a need to establish measures to verify and ensure that the devices are properly assessed with regard to public health. The same level of safety and risk assessment applied to current medicine and medical devices should be applied to nanomedical products. This assessment should cover the entire life cycle of the product from production to handling of waste. The EGE noted that current toxicology methods of measure are inadequate to assess human and environmental exposure to nanoparticles and the resulting effects. It was deemed paramount that no nano-based products enter the market without a risk assessment.

The EGE did not feel new legislation was necessary to regulate nano-products, and proposed that the relevant authorities should carry out the assessments with the understanding there may be need for legal clarity in the future as new nanotechnologies could incur some regulations overlap. The Opinion also calls for assessment transparency and public dialogue to promote trust and evaluate the public perception of the benefits and risks of nanotechnology. A mode of transparency could be public databases and an European Union website on ethics and nanomedicine, updated regularly, where citizens could find information and raise questions.

In conclusion, the EGE proposed that a European Network on Nanotechnology Ethics be established, with up to 3% of the budget invested in research on nanotechnology set aside for interdisciplinary research on ethical, legal and social implications of nanomedicine.

http://ec.europa.eu/european_group_ethics/index_en.htm

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RESOURCES

UNDERSTANDING PLAGIARISM

The Prentice Hall Companion Website “Understanding Plagiarism” is directed toward an undergraduate audience. The site consists of text-only explanations of plagiarism, when to cite sources, and examples of proper citations. The website is very user-friendly, with straightforward directions. There are nine mini-lessons concerning the definition of plagiarism and ways to avoid plagiarism. There is a drop-down menu so that users can go to the lessons in any order they wish. Each mini-lesson is short but the coverage is extensive. The first four mini-lessons have true/false quizzes at the end to evaluate understanding. The quiz results can be sent electronically to teachers to verify completion of the tutorial.

The website could be used in freshman orientation in colleges. The explanation of plagiarism is very clear, and includes good examples. The website could be improved if there were true/false quizzes for all mini-lessons. There were no quizzes for the summarizing and paraphrasing sections; however, this is an area about which undergraduates are very confused. In addition, the quizzes help reinforce the lesson. In the absence of quizzes, there is no way of confirming whether or not the student completed the lesson, and students may be tempted to skip the lesson completely. College students will follow the big picture of the website, but they may not adhere to the tedious guidelines they believe will not be necessary, such as citing internet chat conversations. Academic institutions must reinforce the tutorial on plagiarism by emphasizing the degree to which they expect adherence to good citation and by having clear-cut punishment for violation. Overall, the website should be a good tool for professors educating undergraduates about plagiarism.

The website can be found at: http://wps.prenhall.com/hss_understand_plagiarism_1/0,6622,427064,-00.html

The reviewer was an AAAS intern and is an

undergraduate student at the University of Texas at Austin. For the record, the reviewer came away from the web site with a better understanding of plagiarism.

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JERHRE AND JERHRE NOTES: NEW RESOURCES FOR ETHICAL PROBLEM SOLVING

The nonprofit, peer reviewed *Journal of Empirical Research on Human Research Ethics* (JERHRE — pronounced Jerry) publishes empirical research and reviews of empirical literature on human research ethics, as well as methodology for solving ethical problems in human research. See <http://caliber.ucpress.net/loi/jer> for a free copy of JERHRE.

Institutions and their researchers share concerns about the responsible conduct of research but can experience difficulty finding common ground in the interpretation of ethical principles and regulations. Moreover, investigators working in new settings often find themselves challenged to craft new context-specific solutions to ethical problems.

JERHRE takes a multi-pronged approach to stimulating empirical research and disseminating knowledge in the pursuit of better solutions to ethical problems:

- It provides a venue for outstanding empirical research on ethical problems in human research.
- Each article concludes with a summary of best practices, a research agenda (next research steps on that topic), and educational implications.
- Each issue contains a feature, Educational Advantage, which provides curriculum for teaching the use of empirically based ethical problem-solving skills.
- JERHRE organizes regional and national conferences.
- JERHRE provides free online JERHRE NOTES.

Free JERHRE NOTES can be found at <http://www.csueastbay.edu/JERHRE/notes/index.html>. JERHRE NOTES provide concepts, tools, and resources for solving ethical problems in human research, and are based on articles that
(Resources continued on page 7)

(Resources continued from page 6) appeared in the journal. JERHRE NOTES are currently available on the following topics:

- Evaluating the Ethics Committee
- How Informed are Subjects by the “Informed Consent” Process?
- Ethnography & IRBs: A Square Peg in a Round Hole
- What to Share and What to Redact: Protecting Confidentiality while Preserving Usefulness (Data Sharing)
- Differentiating Sensitive Participants from Sensitive Research
- Models for Paying Research Participants

For example, “Evaluating the Ethics Committee” provides a URL to a diagnostic scale for evaluating whether the IRB is providing genuine help in protecting human subjects or is a dreaded impediment. “Differentiating Sensitive Participants from Sensitive Research” provides a scale for learning how participants reacted to the research experience. If the vast majority found it beneficial, then the goal is to identify those who should opt out.

New JERHRE NOTES will be added online with each ensuing issue of JERHRE, and soon will also be available online in French, Spanish, Korean, and German.

EMBRYO PROJECT AT ARIZONA STATE UNIVERSITY

The Embryo Project, housed in the Center for Biology and Society at Arizona State University, explores embryo research within historically changing complex contexts over time, and therefore provides a detailed case study of rapidly changing science within radically contested contexts. As with any science, embryo research is embedded in webs of unsettled scientific, ethical, legal, political, religious, cultural, and social negotiations that shape the conduct of science, its meanings, and the spectrum of decisions built upon these factors. Understanding the diverse issues and their connections requires the perspectives of multiple disciplines, and understanding interactions requires multi-disciplinary research strategies and methods. To this end, the

Embryo Project is structured to explore the diverse agents of scientific change in a dynamic, interactive, integrative, interdisciplinary, international research environment.

In partnership with the [Max Planck Institute for the History of Science in Berlin](#), the project is developing a collaborative work environment to collect and compile materials in a web-based virtual laboratory. At the same time, efforts are underway to establish new ways of carrying out research and of asking questions that cut across traditional disciplinary boundaries.

To do this, the Embryo Project brings together an international [Network](#) of researchers and the [ASU Embryo Research Team](#) in the [Virtual Laboratory](#) environment. Workshops help to focus the multi-disciplinary research and to identify new questions, new ways of working, and new results. The project is now developing and refining the relational database and its ability to serve as a link among trusted information sources. The Encyclopedia that is beginning to accumulate will present research in ways accessible to multiple diverse user groups.

The project documents, interprets, and links materials and ideas related to embryo research. It focuses on agents that shape scientific change in the multiple contexts in which research exists. People, places, practices, contexts, concepts, images, and literature all make up what will become a network of information for researchers. In addition, the “Ask an Embryologist” feature will allow users to obtain answers to defined questions, and these answers will form the basis for new informational entries. The goal is to provide a resource for scholarly researchers, policy makers, judges, teachers, and the general public.

The project is directed by Jane Maienschein and Manfred Laubichler, working with Daniel Sarewitz, Gary Marchant, and Jason Robert. The project is funded through Arizona State University, with a major grant from the National Science Foundation and support from the Max Planck Institute for the History of Science in Berlin.

For more information, email [maienschein](#)

[@asu.edu](#) or [manfred.laubichler@asu.edu](#), or phone the Center for Biology and Society at 480-965-8927 or visit the web site at http://sols.asu.edu/cbs/embryo_project.php

BOOK RELEASE - INNOVATION IN MEDICAL TECHNOLOGY: ETHICAL ISSUES AND CHALLENGES

Margaret L. Eaton and Donald Kennedy have collaborated on a book that examines four innovative, yet unregulated areas medical of technology. Off-label drug use, innovative surgery, assisted reproduction, and neuroimaging give rise to a number of ethical, legal, and social problems explored in this book. Eaton and Kennedy synthesize case studies, medical history, scholarly research from a number of disciplines, and original reflection to consider such topics as “patient consent,” “duty to mitigate harm,” “access to medical therapies,” and “introduction to new medical products,” among others.

To learn more or purchase, visit: http://www.press.jhu.edu/books/title_pages/9272.html

A REVIEW OF THE COUNCIL OF SCIENCE EDITOR'S WHITE PAPER ON PROMOTING INTEGRITY IN SCIENTIFIC JOURNAL PUBLICATIONS, Scott-Lichter D, and the Editorial Policy Committee, Council of Science Editors. Reston, Va: CSE; 2006. http://www.councilscienceeditors.org/editorial_policies/whitepaper/entire_whitepaper.pdf

The Council of Science Editors (CSE), formerly known as the Council of Biology Editors, was established in 1957 by a joint venture of the National Science Foundation and the American Institute of Biological Sciences. CSE is an autonomous advisory council to a number of national and international scientific organizations. Its mission is to promote excellence in the communication of scientific information.

Public support for medical and scientific research can be directly correlated to the integrity of the research and its reporting. Falsified research or bad judgments on behalf of the editor can reap harsh media (Resources continued on page 8)

(Resources continued from page 7)

criticism and create a sense of distrust among the public. Further ramifications could involve damage to the reputation of other scientists in the field and a decrease in future funding for research.

Peer reviewed journals are the lifeline of the scientific community for research dissemination. It is expected that all information and the manner in which it is reported is held to rigorous standards. The peer-review process is considered the best means for ensuring content quality and validity. The CSE concludes that by documenting appropriate policies and practices this will ensure that the peer-review process will remain effective, fair, and rigorous.

The CSE's white paper is intended to provide guidance to scientists and all of those involved in the publication process. The white paper covers everyone's role and responsibilities, as well as providing case studies, sample forms, and reference websites.

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ANNOUNCEMENTS

Conference – UNESCO is sponsoring an international conference on “Ethical Foundations of Civic Society and Education of Adults” on May 30 – June 1, 2007, in St. Petersburg, Russia. The program will include presentations on political conflicts, social justice, and ethics education. For registration and further details, contact Dr. Dvoretzskaya Ekaterina at: dvoretz2@yandex.ru.

Conference – Indiana University's 14th Annual Workshop, Teaching Research Ethics, will be held May 15-18, 2007 in Bloomington, IN. Session topics will include an overview of ethical theory, trainee and authorship issues, conflicts of interest, using human subjects in clinical and non-clinical research, and responsible data management. To register, go to <http://poynter.indiana.edu/tre>; for more

Support From the Following Societies is Gratefully Acknowledged:

American Anthropological Association
American Political Science Association
American Psychological Association
Association for Psychological Science
American Society for Engineering Education
American Sociological Association

information, contact Glenda Murray at glmurray@indiana.edu or (812) 855-0262

Conference – May 24-26, 2007, the 7th Annual Dental Ethics and Law Congress will meet in Toronto, Canada. To register, visit www.ideals.ac, click on the Toronto image, and select “Register here.”

Conference – May 30- June 1, 2007, the ORI's “Costs and Benefits of Responsible Conduct of Research (RCR) Education Programs” Conference will be held in Minneapolis, MN. The conference will focus on the “structure and costs within institutions to address the context of [RCR] programs and their contributions to the research enterprise.” To learn more and register, visit http://www.research.umn.edu/events/rcr_conference/about.html

Conference – The European Association of Centres of Medical Ethics (EACME) is sponsoring an international conference on “Bioethics in the Real World” on September 13-15, 2007 in Zurich. The conference will focus on “the increasing professionalisation of bioethics in Europe and the accompanying trend to engage in the public, political and professional arena. Sessions will be grouped around four core themes: 1) Bioethics and its professional identity, 2) Bioethics expertise in the public sphere, 3) Ethics consultancy in the professional arena, 4) Education and training in health care ethics.” For registration and further details, visit <http://www.ethik.unizh.ch/biomed/eacme/index.html>.

Conference – The Consortium on Law and Values in Health, Environment & the Life Sciences at the University of Minnesota and the NIH are sponsoring “Managing Incidental Findings in Human Subjects Research: From Imaging to Genomics” in Minneapolis, MN on May 1, 2007. Incidental findings are unexpected findings beyond the domain of key interest in the research that have potential clinical significance. Presentations will focus on presenting recommendations and seeking feedback on how to manage incidental findings in research, including genetic research, genomic research involving microarrays, neuroimaging research, and CT colonography research. For more details and registration, visit: <http://www.lifesci.consortium.umn.edu/conferences/incidentalfindings.php>.

Conference – September 16-19, 2007, the European Science Foundation (ESF) and the U.S. DHHS Office of Research Integrity (ORI) will host an international conference on “Research Integrity: Fostering Responsible Research.” The conference will convene in Lisbon, Portugal and “focus on systemic and institutional issues, including organizational, governance and legal issues.” To register, visit: http://www.esf.org/esf_genericpage.php?

[language=0§ion=10&domain=0&genericpage=2575](http://www.esf.org/esf_genericpage.php?language=0§ion=10&domain=0&genericpage=2575)

Conference – The International Bioethics Committee (IBC) of UNESCO has announced its upcoming session will be held in Nairobi, Kenya from May 17-19, 2007. For updates and information, visit: www.unesco.org/bioethics

Colloquium – Fordham University's Center for Ethics Education is hosting a one-day colloquium in New York City entitled “Embryonic Stem Cell Research: Moral Questions for the 21st Century.” Scheduled from 9:00am to 3:30pm on April 17, 2007, the program will include an assessment of the current state of stem cell science, ethics, and regulation, as well potential next steps. The event agenda, speaker biographies, and RSVP information are available at: <http://www.fordhamstemcellethics.org/>

Conference – March 29-30, 2007, Harvard University and the U.S. DHHS Office of Research Integrity (ORI) will host a conference entitled “Data Fabrication and Falsification: How to Avoid, Prevent, Detect and Report.” The conference will convene in Boston, MA and address issues such as: “How does a journal evaluate data integrity?” “When does photo manipulation become misconduct?” Discussion of the University of Vermont case is also on the agenda. To register and learn more, visit: <http://www.regonline.com/eventinfo.asp?eventid=111654>

Call For Papers – The 2nd Annual Post-graduate Conference in Bioethics, to be held July 30-13, 2007 at Kings College, Cambridge, UK is calling for papers. This year's theme is “Why Bioethics? Our Research In Context.” The conference is fully funded for delegates, and select papers may be published in the *Journal of Clinical Ethics*. The final deadline for abstract submission is April 30, 2007. For more information and submission instructions, visit <http://www.crash.cam.ac.uk/events/2006-7/bioethics.html>

Call For Papers – The International Journal of Internet Research Ethics has issued a call for papers for its premier issue. The journal will be the first peer-reviewed online resource dedicated to cross-cultural and interdisciplinary research on internet research ethics. IJIRE will be published twice annually and be available online free of charge. Submissions will be accepted on a rolling basis. For more information and submission instructions, visit <http://www.uwm.edu/Dept/SOIS/cipr/ijire.html>