Professional Ethics Report

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

VOLUME XVII NUMBER 1 Winter 2004

NEUROSCIENCE AND THE LAW

By Brent Garland

Brent Garland is a senior program associate in the program on Scientific Freedom, Responsibility and Law at AAAS, an attorney, and an active member of the Virginia State Bar. His work is centered on the topics of biomedicine, bioethics, biotechnology, and issues arising from the intersection between science and law.

As neuroscience allows for an increasingly sophisticated understanding of the brain, the possible legal and social implications of these advances in knowledge are just beginning to be considered. Neuroscience could raise numerous issues with respect to some of the core constructs of the law, such as competency, free will, and the genesis of violent behavior. The question of how developments in neuroscience might interact with the law led AAAS and the Dana Foundation to convene a meeting on the relationship between neuroscience and law as a way to contribute to the larger public discourse by identifying some central issues and suggesting directions for future efforts.

With members drawn from both the legal and neuroscience communities, the 27 meeting participants discussed a broad range of topics.[1] Some of the key ideas and concerns that arose from the discussion will soon be made available in *Neuroscience and the Law: Brain, Mind and the Scales of Justice*.[2] As the editor of that volume, I would like to introduce a few of the central questions and to discuss one area—prediction of behavior—at greater length, in hopes of encouraging others to begin thinking about this still-developing nexus of scientific and legal interest.

The meeting was grounded in a realistic assessment of the advances in neuroscience and their potential for good or ill effects in law, as well as possible societal impacts. Concerns that developments in neuroscience could shatter legal paradigms (say, by undoing the concept of free will) were viewed as unlikely. Developments in neuroscience may well have substantial impact on how the law views people and behavior, but the legal system is generally robust and should be able to assimilate and use new scientific knowledge as it develops. Among the questions raised at the meeting are:

- How will advances in neuroscientific methods for predicting behavior impact the legal system, and how will our society utilize these advances?
- What will neuroscience-based lie detection mean for witnesses testifying in court?
- How might neuroscientific knowledge put people at risk for discrimination in schools, the workplace, and elsewhere?
- What are the benefits and risks of enhancing or modify one's brain through pharmacological or other technologies? What roles will the legal system play in the debate about human enhancement?

Predicting Behavior

Surely, if a single topic captures the sense of promise and of risk from neuroscience, the ability to predict behavior is it. Courts currently use prediction in plea bargaining, sentencing, and decisions about levels of probation, among other proceedings. In each of these examples, the courts must weigh future risks, including the likelihood of recidivism, against other societal and pragmatic concerns (like prison over-crowding). Accordingly, to the extent that sound science can better inform those predictions, neuroscience really has something of benefit to offer the court system.

Courts, because they must make decisions in a timely fashion, are pressed to use any reasonable tool that might shed additional light on the matter at hand. A risk thus arises that predictive decisions will be based on poor or incomplete science. Additionally, neuroscience-based predictions may be given undue weight as "scientific predictions" when they may still suffer from the typical problems inherent in current risk prediction models: bias in the choosing of people for sample groups; reliability or validity issues in the prediction itself; and the inability of a predictive measure to tell you about the particular individual, but only to tell you, probabilistically, about the group to which the subject belongs.

The use of flawed or incomplete science, or the reliance on scientific predictions beyond what the science is prepared to support, are exactly the kinds of concerns that should be foremost in the public mind when contemplating the potential social impact of predictive technologies or techniques. It is not just in courtrooms that prediction would have an impact, but also in schools, employment, healthcare systems, government investigations, and in other ways that would dwarf usage by the court system. The potential to pigeonhole, to discriminate, and to judge on the basis of test results could result in substantially negative consequences, including the development of a "neuroscientific underclass" denied access to education and other societal benefits on the basis of their neuroscience test results. These concerns parallel the current dialogue around genetics, and some felt the public dialogue around genetics may illuminate some of the promises and pitfalls that could accom-

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pany a greater understanding of the brain.[3] Though a host of possible predictions might be desirable (e.g., tendency to be honest, willingness to follow authority, etc.), the potential for violence is of particular interest and significance. Prediction of violence has already been the subject of neuroscience research, and it will probably continue to interest science as well as the legal system. It is a predictive measure likely both to have tremendous utility and to carry great risk of misuse; and it is likely to cut both ways in criminal law – in mitigation and in marking someone as being predisposed to violence. While violent behavior will probably never be predicted with complete certainty, the likelihood that techniques will be developed to distinguish those more likely (or even very likely) to react with violence seems great enough that those techniques be considered for future research and public discussion.

An additional concern is pre-emptive uses of prediction of violent behavior (or proneness to violence). Generally, in the legal system, we punish people based on behavior, not on thoughts or "tendencies." The idea of imposing treatment, or even making decisions regarding employment, based on some test results, and in the absence of prior violent behavior, is deeply disconcerting.

Editor: Mark S. Frankel
Deputy Editor: Kristina Schaefer
Contributing Authors: Kevin Alleman, Christine Bellordre, Clinton Musil, Rachel Gartner

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) 326-6217; Fax (202) 289-4950; E-mail: kschaefe@aaas.org; WWW *http://www.aaas.org/spp/dspp/sfrl/sfrl.htm.* Back issues of *Professional Ethics Report* are now on-line at *http://www.aaas.org/spp/dspp/sfrl/per/per.htm*

 ISSN: 1045-8808

Of course, not all the possible ways in which predictions of "violence-proneness" could be used are negative. For example, in screening people whose jobs require them to confront violence,[4] and in some circumstances, to respond with violence, such tests may be extremely useful. This might be thought of as identifying "violence-eligible" individuals.

Other areas of interest

As one can see from the example of predicting behavior, neuroscience and law can intersect in numerous ways, posing numerous questions of social import. Other areas discussed included:

- the role of neuroscience in determining competencies and legal capacities—for example, the capacity to contract, or to manage one's business affairs;
- the legal and social impact of developing accurate neuroscientific lie detector technologies and techniques;
- the use of neuroscience to detect bias, for matters such as jury selection or employment screening;
- what neuroscience might tell us about brain death, and how it might change our concept of brain death;
- the neuroscience-based enhancement and modification of human capabilities and capacities, including the question of compelling the use of enhancement technologies, the potential for creation of a "neurological underclass," and the implications of neuroscience-based treatment for addiction;
- the risk of discrimination based on neuroscientific test results or other neuroscience information;
- the risks of pre-formal uses of neuroscience information by the courts—for example, as part of a pre-charging dialogue between defense counsel and prosecutors, seeking dismissal, reduction of charges, or some other outcome; and
- some of the privacy and confidentiality issues surrounding neuroscience data, including the gathering of information collateral to the issue of interest.

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.

Conclusion

A few ideas for future efforts were proposed, along with a few topic areas for further attention. The participants generally supported increased interaction among the legal and neuroscientific disciplines. One useful form would be scientific educational efforts aimed at lawyers and judges. Similarly, neuroscientists could benefit from education in the legal system's use of science, and the types of uses lawyers foresee for neuroscience. Also, the establishment of a formal body, an ongoing conference, or some other mechanism to allow lawyers and neuroscientists to inform each other's work could be quite valuable.

In a related vein, the two communities might cooperate in establishing which neuroscience methods are legally useful and scientifically sound. While the law will likely incorporate new neuroscientific knowledge successfully, less clear is how that might best occur. While no detailed plan was developed, several participants proposed considering an accrediting process (for labs and technologies), or some legislatively-driven creation of an approval process.

Even without a specific strategy for determining which neuroscience methods are legally and scientifically sound, several areas of neuroscientific inquiry are likely to yield useful knowledge for legal proceedings, as well as having a societal impact. These are: *addiction, enhancement, risk of discrimination, lie detection,* and *prediction of behavior*.

Finally, one lawyer made the case for expanded clinical testing of the neuroscience technologies likely to be used in legal settings:

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> "[Y]ou should be able to do pretty good controlled clinical trial kinds of experiments to see whether these things work, whether they work for everybody, whether they work for only certain people, whether you can beat it…You want to put a new drug out, the FDA requires you to go through years and years of detailed clinical trials. There's no such requirement for non-medical technologies. Does anybody have the interest, the funds, and the will to fund serious rigorous clinical testing of these technologies? If the answer is no, I'd suggest the answer should be changed to yes."

While these sentiments specifically refer to "lie detection" technologies, opinions like it echoed throughout the meeting regarding many of the technologies discussed. The legal community recognized that many of the relevant neuroscience developments are in their earliest stages of exploration, but felt that the scientific community should consider explicit clinical testing of neuroscience tests and technologies for courtroom and other legal uses.[5]

In conclusion, one concern strongly expressed was that both lawyers and neuroscientists be cautious about how the science is used and presented. For the well-being of both fields, the science must be presented, used and discussed in a realistic and accurate fashion – one that reflects both the limitations and the potentials of the science. As one participant put it, it is time for neuroscientists to start identifying and delineating the boundaries of what is known and likely to be knowable – the limits of neuroscience knowledge. In turn, this will enable the legal community to better appreciate what neuroscience can and cannot tell us, and to what uses neuroscience can be put in the service of the law, and of society. Simply because the future is not fully knowable is not reason to delay the dialogue. As one neuroscientist noted, "[We] really do have an obligation to think about things, even if they don't seem likely right now, because they will come faster than we can possibly believe."

[1] Four papers were commissioned to serve as the shared intellectual framework upon which to anchor the dialogue. Those papers, as well as the longer version of this report are published together by the Dana Press in *Neuroscience and the Law: Brain, Mind, and the Scales of Justice*, Brent Garland, ed. (2004). Readers looking to learn more about the conference and the ideas that drove it are encouraged to read the larger volume. The authors of the commissioned papers are: Michael Gazzaniga, a psychologist and the director of the Cognitive Neuroscience Program at Dartmouth College, where he is also the Dean of the faculty; Megan S. Steven, a doctoral candidate in medical sciences at the University of Oxford in England; Laurence Tancredi, a psychiatrist, lawyer and clinical professor of psychiatry at New York University School of Medicine; Henry Greely, a lawyer, the C. Wendell and Edith M. Carlsmith Professor of Law at Stanford School of Law, and co-director of the Program in Genomics, Ethics, and Society at Stanford University; and Stephen Morse, a psychologist, lawyer, and Ferdinand Wakeman Hubbell Professor of Law at University of Pennsylvania School of Law.

[2] The volume will be published by the Dana Press in Fall 2004.

[3] For readers interested in the parallels with the genetics debate, Henry Greely's paper in the larger volume is particularly recommended.

[4] For example, members of the armed forces and law enforcement officers.

[5] In general, early scientific research is often considered more "pure" than "applied" research, in part because the initial exploratory work is often (by necessity) primarily descriptive and explanatory, rather than an attempt to manipulate or alter the phenomenon or mechanism of interest. In the case of neuroscience, many of the applied uses are only beginning to be developed. In the situation at hand, the lawyers were essentially arguing that since we expected the scientific knowledge and the technologies to be used in legal settings, perhaps researchers should conduct some experimentation directly addressing the potential legal uses.

IN THE NEWS

BENEFICIAL BUGS

The Pew Initiative on Food and Biotechnology, funded by the Pew Charitable Trust, released a report this January on the risks and benefits of genetically modified bugs, as well as avenues for governmental regulation. Scientists are working on modifying a range of insects, from silkworms to mosquitoes, to do a number of tasks.

The report looks at the potential benefits and concerns of developing genetically modified insects. Current research includes engineering mosquitoes that are immune to the parasite that transmits the malaria virus and releasing sterilized males of a insect species in an effort to limit reproduction. The advantage to medicine in limiting the spread of a debilitating disease and the ability of agriculture to limit pest species are obvious benefits, but the report also addresses the risks of these altered bugs escaping into the environment, as well as the consequences of them being deliberately introduced. Environmental groups are especially opposed to the deliberate release, fearing that the advantage given to these bugs could upset the delicate ecological balance, possibly causing even more severe problems. The report also poses the question of which governmental agencies will be responsible for the oversight of the research that produces these designer insects. Currently, the United States Department of Agriculture (USDA), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA) have all had regulatory input on genetically modified plants, and are all possible contenders for the right to oversee research on genetically modified insects. The agency assigned to oversee research may very well depend on the ultimate use of the modified insect. As of yet, the USDA is the only agency that has any sort of oversight program for genetically modified insects in place.

A copy of the PEW report *Bugs in the System: Issues in the Science and Regulation of Genetically Modified Insects* can be found at http://pewagbiotech.org/research/bugs/bugs.pdf **RG*

BIOCONFINEMENT

In Steven Spielberg's *Jurassic Park*, dinosaurs cruised the jungles of commonday Costa Rica. They were kept isolated by defective barriers that ultimately failed to prevent their escape.

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In the fictional story- a reliance on park food, sterility, electric fences and motion detectors didn't keep the creatures from running amuck in populated areas. In real life, scientists are quite sure mankind will not have to deal with genetically engineered dinosaurs walking the earth anytime soon. However, the difficulty in keeping some genetically modified organisms from evading their intended boundaries has become a dilemma. In America, thousands of engineered crops are planted yearly and hundreds of gene-altered organisms are used in laboratories every day. So how are government officials ensuring that dangerous new organisms don't break out to threaten existing species or taint the food supply?

A panel of the National Research Council recently reported that techniques limiting the spread of genetically engineered organisms are in their infancy. According to the NRC, investigations into preventing the unintended proliferation and distribution of genetically altered organisms are a necessity. Until now, the strategy for bioconfinement has relied primarily on physical barriers, an impediment that has proven susceptible to human error. As more and more gene altered fish, insects, and other highly mobile organisms become available, officials worry about the effectiveness of current techniques. In its study, the NRC found that "no available method (of bioconfinment) offers complete assurance that new products deemed especially hazardous can be kept under control." The panel did recognize that many modified organisms pose little or no theoretical risk and that advanced control techniques will not be needed in many ases. For a small number of higher-risk organisms though, the NRC insisted that labs develop an "integrated confinement system" that includes at least two discrete prevention strategies.

A second report, produced by the Pew Initiative on Food and Biotechnology (a grant funded program at the University of Richmond), notes the need to clarify regulations specifically on GM arthropods. Attempts to control pests by creating sterile insects or to stop the spread of malaria by introducing disease-resistant mosquitoes are examples of projects in the works. Currently, the U.S. Department of Agriculture does not have a clearly defined risk-assessment procedure for the GM arthropods. The unprepared status of governmental regulators is receiving criticism from health officials and public awareness groups, which believe more precise regulations must be put into place. Findings reported by the Union of Concerned Scientists in February suggest that modified genes are cindeed being transferred into natural seed supplies. 16 of 18 supposedly unmodified seed varieties tested in a study were found to carry genetically engineered DNA elements. In response to the findings, farmers were urged to alter their methods of isolating unmodified seed, and more thorough studies are being planned. The contamination of unaltered seed supplies could cripple U.S. crop export to countries that have banned genetically modified foods.

If adopted, regulations proposed by the NRC and Pew would present the American biotech industry with a range of new costs and organizational challenges. The industry has generally opposed such regulation but is always careful to note its commitment to safety. Industry officials emphasize that genetically altered crops have been used widely since the mid-90's without one reported case of illness. Tighter bioconfinement regulation threatens the development of potentially advantageous technology, according to industry leaders. Despite these complaints, it appears that stricter governmental regulation is inevitable.

Fore more information:
NRC report: *Biological Confinement of Genetically Engineered Organisms*
http://books.nap.edu/catalog/10880.html

Pew Initiative on Food and Biotechnology report: *Bugs in the System? Issues in Science and Regulation of Genetically Modified Insects*
http://pewagbiotech.org/research/bugs/

Union of Concerned Scientists report: *Gone to Seed: Transgenic Contaminants in the Traditional Seed Supply*
http://www.ucsusa.org/publications/report.cfm?publicationID=308#food *CM

CANCER SOCIETY SAYS NO TO RESEARCH FUNDED BY TOBACCO

The American Cancer Society recently announced that it will no longer offer grants to researchers who receive funding from tobacco companies. Taking in almost three quarters of a billion dollars every year in donations, the society awards $125 million annually to cancer studies. Since the group's decision was made public, the effects of such a change in policy have been debated vigorously. According to ACS officials, the work of "few researchers" will be directly affected by the new guidelines. Unlike several other organizations, the society is not denying grants broadly to institutions or departments where Tobacco money is being spent. The majority of scientists who currently receive aid from the Cancer Society do not accept funds from tobacco companies, according to Dr. Eyre, ACS's chief medical officer. Nevertheless, the move represents a significant statement on behalf on the organization. Many believe that the change in policy could trigger a great transformation in scientific funding by non-profits. Other organizations may soon consider devising similarly strict guidelines governing the research they finance, giving investigators fewer options for funding. Wendy Baldwin, a researcher at Kentucky University, stresses the potential ramifications, saying that the decision "could be very dangerous to science."

The society claims to have been forced into action by the industry's threatening history of influencing science to promote its agenda. ACS cites research being done at UCLA by James E. Enstrom. Critics contend that his cancer study is flawed and improperly downplays the impact of secondhand smoke. The industry and the society are both identified as financial supporters in a paper he published on the subject. The society believes it was improperly linked to findings based on a manipulated interpretation. ACS enacted the recent change in policy in part to avoid similar problems in the future. Critics of the tobacco industry applaud the society and call the initiative an important moral statement. "It recognizes just how

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pernicious the tobacco industry has been as a force to distort the scientific process," says Stanton Glantz, a professor of medicine at the UCSF.

Ethical debate has long accompanied research funded the tobacco industry. The American Legacy Foundation, formed with the proceeds from a $246 billion tobacco settlement, refuses grants to universities receiving tobacco funding, as does the American Lung Association. Officials from the tobacco industry have responded to the actions by maintaining that the research they finance is "independent." When approached for comment by Checkbiotech (an internet platform sponsored by Syngenta), Philip Morris spokesperson Jennifer Golish refused to disclose information concerning recipients of the company's external research grants. Officials at Lorillard also did not respond to requests for comment. Researchers will have to wait and see if other organizations follow the path of ACS. **CM*

NEW REPORT ON STEM CELL RESEARCH

On 15 January 2004, the President's Council on Bioethics released a new report entitled *Monitoring Stem Cell Research*.[1] The report chronicles the recent advances in the science of stem cell research and outlines the ethical issues that have arisen from such research, as promulgated under the current federal funding policy. It is not a comprehensive study and makes no proscriptions or public policy recommendations, unlike the Council's cloning report.[2] Rather, it summarizes the "more interesting and significant developments since August 2001, both in the basic science and medical applications of stem cell research and in the related ethical, legal, and policy discussions" (Letter of Transmittal to the President, x).

The report enumerates four specific goals. First, it attempts to explain the current federal funding policy of stem cell research—in the historical context of federal funding of embryo related research—by clarifying the legal and ethical foundations underlying President Bush's 2001 mandate that no federal funding be earmarked for research on human embryos created after August 9. This means that the derivation process—which begins with the removal of the inner cell mass from the blastocyst—must have been initiated prior to 9 August 2001. It also means that the embryo from which the stem cells were derived was no longer needed for reproductive purposes, that informed consent was obtained for the donation of the embryo, and that donation must not have involved financial inducements. To date, the National Institutes of Health reports that approximately 78 human embryonic stem cell lines are eligible for federal funding under the current policy, of which only about 15 colonies are characterized and presently available for distribution.

Second, the report attempts to outline the ethical and policy debates surrounding stem cell research by examining the moral aims of the policy and the weight attributed to both the points and counterpoints. Third, it seeks to provide an update on developments in all areas of human embryonic and adult stem cell research in recent years, in language that would enable general readers to appreciate the complexities of the overall stem cell debate. And fourth, it aims to convey to the reader the moral and social importance of these issues by depicting different viewpoints in a balanced manner to show how a diverse populace can reason about these issues democratically.

Additional information about the President's Council on Bioethics can be found at www.bioethics.gov/. **KA*

[1] President's Council on Bioethics, *Monitoring Stem Cell Research: A Report of the President's Council on Bioethics*, Washington, D.C. (2004); http://www.bioethics.gov/reports/stemcell/index.html.

[2] ____, *Human Cloning and Human Dignity: An Ethical Inquiry*, Washington, D.C. (2002); http://www.bioethics.gov/reports/cloningreport/index.html.

NIH REVISES ITS CONFLICT OF INTEREST REGULATIONS

On January 5, 2004, the National Institutes of Health (NIH) published revised regulations for its conflict of interest requirements in the *Federal Register* (http://a257.g.akamaitech.net/7/257/2422/05jan20040800/edocket.access.gpo.gov/2004/pdf/03-32109.pdf). The regulations apply only to experts selected by NIH to sit on peer-review panels that evaluate proposals for research grants.

Starting February 4, 2004, when these regulations, *Scientific Peer Review of Research Grant Applications and Research and Development Contract Projects*, take effect, any scientist who reviews grant proposals for the NIH will be disqualified from the peer review process if s/he has financial interests totaling more than $10,000 in the research being proposed. If a reviewer has financial interests of $10,000 or less, NIH will officially investigate the relationship to determine whether there is a significant risk of bias. The revisions also state that peer reviewers will be disqualified for non-financial conflicts of interest that "are likely to bias the reviewer's evaluation of an application or proposal." Although the regulations do not provide specific examples of what would qualify as a non-financial conflict of interest, some examples are if a reviewer had a personal relationship with an applicant, or if a reviewer was a former professor or academic advisor to an applicant. (Brainard, 2004) The NIH director will hold veto power over any conflict of interest decisions, and may waive these regulations if the reviewer is considered necessary to give expert advice about a given proposal and if the director believes the conflict of interest present would not bias the review.

For further information, see the following: *Federal Register*. (2004) Scientific Peer Review of Research Grant Applications and Research and Development Contract Projects. January 5, 2004: 69(2). Retrieved January 13, 2004 from http://www.gpoaccess.gov.

Brainard, Jeffrey. (2004) NIH Calls for Removal of Some Peer Reviewers to Avoid Conflicts of Interest. *The Chronicle of Higher Education: Daily Report*, January 6, 2004. Retrieved January 6, 2004 from http://chronicle.com. **CB*

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PRENATAL GENETIC TESTING: FRIEND OR FOE?

On May 24, 2003, the European Disability Forum (EDF) Annual General Assembly was held in Athens, Greece, where EDF discussions focused on the effects of genetic testing that allow parents to know some of the physical conditions of their unborn child. The EDF contends that scientific advances in prenatal genetics, such as ultra sound and amniocentesis, prejudge the quality of life that a fetus with genetic disorders may have. Moreover, the EDF believes that societal pressure is placed on parents to terminate a pregnancy if their fetus is discovered to have genetic disorders. "In Western countries, over 90% of parents opt for abortion or termination of pregnancy when the unborn child appears to have an impairment." (EDF, 2003) The EDF's response to this concern for the valuation of human life was its *Resolution on Pre Natal Diagnosis and the Right to be Different.*

Key points in the resolution are:

- EDF will work to ensure that human rights principles are upheld for individuals with disabilities and for unborn children diagnosed with genetic disabilities.
- Disability organizations should become active in debates on moral and ethical dilemmas raised by Prenatal diagnosis.
- Parents should be offered Prenatal counseling by a multi-disciplinary group of experts and professionals and should have access to full and complete information about genetic conditions.
- Explicit or implicit devaluation of human life due to genetic disability is a form of discrimination and a breach of human rights principles.
- Collaboration between physicians and disability organizations is encouraged to ensure that parents and patients receive accurate information about genetic disorders.
- The primary prevention of genetic disorders should be a healthy diet and lifestyle of the mother.
- Terminology such as prevention or therapeutic abortion should not be used.
- Continued research on the causes of genetic disorders is needed and supported by EDF.

Although EDF supports the right to abortion in principle, it strongly opposes selective abortion based on knowledge of prenatal genetic disorders as a form of discrimination based on the assumption that one life is worth less than another.

The EDF is an organization born of the United Nation's adoption of the Standard Rules on the Equalization of Opportunity for People with Disabilities in 1993. The EDF concerns itself with the rights of disabled individuals in the EU, and their experience in society. It believes that disabled individuals are often confronted by a lack of services and access to equal opportunities compared to non-disabled members of society, and that society assumes that disabled persons are unable to achieve the same quality of life as, and are somehow inferior to, non-disabled persons. The EDF provides an opportunity for disability organizations throughout the EU to work across national borders to address disability-related issues.

For further information, see the following:

European Disability Forum. (2003) Resolution on Pre Natal Diagnosis and the Right to be Different. Retrieved February 12, 2004 from http://www.edf-feph.org/Papers/pospaper/03-06/WM14-Annex5-ResolutionPreNatalDiagnosis-Right-to-be-Differ%85.pdf. ***CB**

RESEARCHER'S ARREST FOR MANSLAUGHTER BRINGS PATIENT PROTECTION POLICY INTO QUESTION

On October 29th of last year, researcher Paul Kornak was indicted on charges of criminally negligent homicide. He is accused of illegally enrolling veterans in a clinical study at Stratton Veterans Affairs Medical Center in Albany. Officially employed as a chief research assistant, Kornak helped run a nationwide drug trial funded by Ilex Oncology Inc. and the National Cancer Institute. The study exposed 450 participants to DFMO, a potential anti-cancer agent originally used to treat tropical parasite infections. According to officials, Kornak and Dr. James Holland, the former chief of oncology at the Center, inappropriately enrolled almost 100 subjects in the study. Allegedly, either Holland or Kornak fabricated test data, failed to report adverse effects, and altered medical charts. FDA officials report "substantial problems" in 54 of 55 patient charts prepared by Holland and Kornak. According to preliminary investigations, at least one and potentially five patients died as a result of the misconduct. The family of James DiGeorgio, a patient who passed away after being enrolled in the trial, has filed a 20-million dollar law suit against the U.S. Department of Veterans Affairs.

For critics of the government's efforts to protect research subjects, this case exposes a medical culture in which trial patients are at high risk. Compounding their concern is that in January of 2004 the Office of Research Compliance and Assurance (ORCA), established by the VA in 1999 to protect patients enrolled in research, was abolished by Dr. Robert Roswell, the VA Under Secretary for Health. Patient's rights organizations cited the closure as an indication that safety is not a priority for institutions like the FDA and VA.

The office that oversees grants and contracts for the VA has now replaced ORCA as the primary office overseeing research safety in patient trials. The replacement has infuriated patient protection organizations, which point to the potential clash between funding interests and the health of patients. Arthur K. Wu, staff director of the House Veterans' Affairs Subcommittee on Oversight and Investigations stated that,

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"the ORCA did a better job of dealing with the incident than was originally reported." In response to heavy political pressure, Dr. Roswell announced on January 30th that the abolition of the ORCA is no longer a "done deal." **CM*

WHO WANTS TO TAKE A SURVEY?
The American Association for Public Opinion Research (AAPOR) released a statement on January 13, 2004 condemning the "unethical and irresponsible practice reported to have been used to conduct a survey introduced as evidence in the Scott Peterson murder trial."[1] The survey was one of three used by the defense to ask for a change of venue for the trial. The survey results indicated that there would be more jurors without bias in the San Francisco Bay area or Southern California, than there were in Stanislaus County.

The survey was conducted by students of Prof. Stephen Schoenthaler of California State University, Stanislaus. Nine unidentified students admitted to having falsified data they reported. The survey was an assignment that accounted for 20% of the students' grade, but the students were not supervised or provided with resources to make the long-distance phone calls necessary to complete the assignment. Although, many students reported completing the survey honestly, some also claimed the assignment was unfair and couldn't be completed in the absence of resources. Dr. Elizabeth Martin, president of the AAPOR, called it "exploitative to require students to carry out a telephone survey with inadequate supervision and at their own expense." She also noted that "all reputable surveys monitor or check for the possibility of falsification by directly observing or by calling back a sample of cases to ensure interviews were done."

California State University, Stanislaus has started an official inquiry into the matter, which will also consider Prof. Schoenthaler's statement that he did not inform the university that students would be conducting the survey, as required by law. The university says it responded to students' complaints over the survey assignment, discovering in the process that Schoenthaler had not followed proper approval procedure for the survey, and subsequently asked him to stop the assignment.[2] Schoenthaler denies that he was told to stop and claims he was encouraged to continue.[3] He continues to support the manner in which the survey was done. **RG*

[1] AAPOR Statement on Peterson Trial Survey http://www.aapor.org/petersonsurvey.pdf
[2] "Peterson Poll Rattles Faculty" *Modesto Bee* 29 Jan 04
[3] "Survey by prof ordered verified" *Modesto Bee* 31 Jan 04

IN THE SOCIETIES

AMERICAN ANTHROPOLOGICAL ASSOCIATION (AAA) YANOMAMI VACCINE RESOLUTION
In December 2003, members of the American Anthropological Association (AAA) overwhelmingly approved a resolution that the association "recognizes the harmfulness of false accusations regarding vaccine safety" that could damage public health efforts among indigenous people. The resolution calls for the members to:

- Repudiate the accusations and insinuations concerning the measles epidemic raised in *Darkness in El Dorado*;
- Recognize the harm in making false accusations regarding vaccine safety;
- Request that the Committee on Ethics begin a discussion regarding the responsibilities of the anthropologist with respect to these issues.

This resolution was prompted by the controversy surrounding *Darkness in El Dorado*, a book by Patrick Tierney published in 2000. The book charged geneticist James Neel and anthropologist Napolean Chagon with using a vaccine that led to a lethal 1968 measles epidemic in the Yanomami Indians of Brazil. The book also suggested that the epidemic may have been part of a eugenics experiment. The AAA cleared the accused scientists after an investigation in 2001.

The Referendum on Darkness in El Dorado & Danger to Immunization Campaign can be found at http://www.aaanet.org/edtf/ref/referendum.htm **RG*

ANNOUNCEMENTS

Publication — AAAS, in collaboration with **The Hastings Center**, has published an introduction for non-scientists to the science of behavioral genetics and its broader ethical and social implications. Among the topics covered are how scientists explore the influence of genes and environment on behavior and how such research may challenge our understanding of human nature, personal responsibility, and equality. The book, ***BEHAVIORAL GENETICS: An introduction to how genes and environments interact through development to shape differences in mood, personality, and intelligence***, can be found at http://www.aaas.org/spp/bgenes/publications.shtml. Another publication from the project is Genetic Differences and Human Identities, a special supplement in the January-February 2004 issue of the *Hastings Center Report*.

New Journal – As part of its new website, the **Centre for Computing and Social Responsibility** has launched the new **ETHICOMP Journal**. Free subscriptions are available for a limited time. The journal is located online at http://www.ccsr.cse.dmu.ac.uk/journal.

New Journal/Call for Papers – The **International Journal of Technology and Human Interaction** is seeking contributions for its inaugural issue, due for publication in December 2004. With an interdisciplinary focus, the journal invites submissions from both technical disciplines, such as computer science and engineering as well as non-technical fields, such as sociology and philosophy. The journal's website is http://www.idea-group.com/ijthi.

Certificate Program – A graduate-level distance learning certificate program in Health Care Ethics is being offered by **Duquesne University**. The program consists of three online courses, a course taken at a school of the student's choice

(**Announcements** continued on page 8)

Professional Ethics Report

Scientific Freedom, Responsibility and Law Program
American Association for the Advancement of Science
1200 New York Avenue, NW, Washington, DC 20005

(**Announcements** continued from page 7)

and a clinical practicum. The program begins in Fall 2004 and is limited to 36 students. For more information, visit http://www.liberalarts.duq.edu/healthcareethics/online.html.

Conference – In collaboration with **PRIM&R,** the **Columbia University Center for Bioethics** will hold a three-day conference on Conflicts of Interest, Privacy/Confidentiality and Tissue Repositories: Protections, Policies, and Practical Strategies, from May 3-5 in Boston, Massachusetts. The conference is designed for researchers at every level, medical professionals, ethicists, policy makers, and lawyers, and participants will receive extensive material on the three topics, with 22.5 CME credits also available. For more information, visit http://www.primr.org/Privacy04/Poverview.htm.

Symposium – The **Medical College of Wisconsin's** Annual Research Symposium will be on May 14 in Milwaukee, Wisconsin. The event commemorates the 25th Anniversary of the Belmont Report by reuniting the authors and members of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. A live webcast will also be available free of cost. More information and registration is available at http://www.nrg.to/belmontsymposium/home.html.

Conference – On June 14-15, 2004, the **University of Lincoln**, Lincolnshire, UK, will hold a conference on The Age of Information: New Anxieties – New Opportunities. The focus of the conference is the ethics of communication and integrity of information. For more contact Rebecca Inkley, Coordinator for the Institute of Communication Ethics, at rinkley@lincoln.ac.uk.

Call for Papers/Conference – The **Office of Research Integrity** will hold the 3rd Research Conference on Research Integrity (RCRI) will be held in San Diego California on November 12-14, 2004. The focus of the conference is on original investigations into new research areas, new research methods, or insights into recognized problems in research. The research findings of grant awardees of the ORI Research on Research Integrity Program will be highlighted at the conference as well. Abstracts for papers are due April 16, 2004. For more information, visit http://ori.hhs.gov.

Support From the Following Societies and Organizations is Gratefully Acknowledged:

American Anthropological Association
American Association of University Professors
American Political Science Association
American Psychological Association
American Psychological Society
American Society for Engineering Education
American Sociological Association
Botanical Society of America