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# Professional Ethics Report

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ADVANCING SCIENCE, SERVING SOCIETY

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*From the Editor--*

*The Singapore Statement on Research Integrity was developed as part of the 2nd World Conference on Research Integrity, held in Singapore, 21-24 July 2010. It was then modified and circulated to the more than 300 Conference attendees from 51 countries for further comment, and finalized.*

*The Statement establishes a common foundation for responsible research conduct for use by governments, professional societies, and research institutions to develop more detailed guidance for their respective research communities. It is reprinted here to encourage worldwide discussion of how ethical standards for research may be implemented in an era when the globalization of science is of increasing importance to finding solutions to some of the world's more pressing problems.*

## Singapore Statement on Research Integrity

**Preamble.** The value and benefits of research are vitally dependent on the integrity of research. While there can be and are national and disciplinary differences in the way research is organized and conducted, there are also principles and professional responsibilities that are fundamental to the integrity of research wherever it is undertaken.

### Principles

*Honesty* in all aspects of research  
*Accountability* in the conduct of research  
*Professional courtesy and fairness* in working with others  
*Good stewardship* of research on behalf of others

### Responsibilities

**1. Integrity:** Researchers should take responsibility for the trustworthiness of their research.

**2. Adherence to Regulations:** Researchers should be aware of and adhere to regulations and policies related to research.

**3. Research Methods:** Researchers should employ appropriate research methods, base conclusions on critical analysis of the evidence and report findings and interpretations fully and objectively.

**4. Research Records:** Researchers should keep clear, accurate records of all research in ways that will allow verification and replication of their work by others.

**5. Research Findings:** Researchers should share data and findings openly and promptly, as soon as they have had an opportunity to establish priority and ownership claims.

**6. Authorship:** Researchers should take responsibility for their contributions to all publications, funding applications, reports and other representations of their research. Lists of authors should include all those and only those who meet applicable authorship criteria.

**7. Publication Acknowledgement:** Researchers should acknowledge in publications the names and roles of those who made significant contributions to the research, including writers, funders, sponsors, and others, but do not meet authorship criteria.

**8. Peer Review:** Researchers should provide fair, prompt and rigorous evaluations and respect confidentiality when reviewing others' work.

**9. Conflict of Interest:** Researchers should disclose financial and other conflicts of interest that could compromise the trustworthiness of their work in research proposals, publications and public communications as well as in all review activities.

**10. Public Communication:** Researchers should limit professional comments to their recognized expertise when engaged in public discussions about the application and importance of research findings and clearly distinguish professional comments from opinions based on personal views.

(Singapore Statement continued on page 2)

### 11. Reporting Irresponsible Research Practices:

Researchers should report to the appropriate authorities any suspected research misconduct, including fabrication, falsification or plagiarism, and other irresponsible research practices that undermine the trustworthiness of research, such as carelessness, improperly listing authors, failing to report conflicting data, or the use of misleading analytical methods.

### 12. Responding to Irresponsible Research Practices:

Research institutions, as well as journals, professional organizations and agencies that have commitments to research, should have procedures for responding to allegations of misconduct and other irresponsible research practices and

for protecting those who report such behavior in good faith. When misconduct or other irresponsible research practice is confirmed, appropriate actions should be taken promptly, including correcting the research record.

**13. Research Environments:** Research institutions should create and sustain environments that encourage integrity through education, clear policies, and reasonable standards for advancement, while fostering work environments that support research integrity.

**14. Societal Considerations:** Researchers and research institutions should recognize that they have an ethical obligation to weigh societal benefits against risks inherent in their work.

## In the News

### PRESIDENTIAL COMMISSION ADDRESSES THE FUTURE OF SYNTHETIC BIOLOGY

On July 8 and 9, the Presidential Commission for the Study of Bioethical Issues convened its first public meeting in Washington, DC to discuss the implications of recent advancements in synthetic biology. The Commission, created by President Barack Obama on November 24, 2009, is chaired by Dr. Amy Gutmann. Its mission is to “Advise the President on bioethical issues that may emerge as a consequence of advances in biomedicine and related

areas of science and technology...with the goal of identifying and promoting policies and practices that ensure scientific research, healthcare delivery, and technological innovation are conducted in an ethically responsible manner [1].”

The Commission’s focus on synthetic biology came as a response to the recent publication of Dr. Craig Venter’s research in synthetic genomics [2][3]. The July meeting covered a wide scope of issues central to synthetic biology research, including discussions of its future applications and uses, ethical concerns, potential risks associated with the use of synthetic biology, and the current regulatory environment.

Synthetic biology research is in its infancy; the future directions and limitations of the science are not known. Present research is predominantly focused on its biological and therapeutic uses.

Despite the potential benefits of synthetic biology, there are serious questions about its risks, which can be either unintentional consequences of the research or intentional abuses. Specific concern was raised at the meeting about the impact of an accidental release of synthetic genetically engineered organisms (GEO) into the environment. It is unknown what the long-term consequences of GEOs would be on animal and plant life. In order to safeguard against such problems, it was

recommended to the Commission that enhanced safety mechanisms be put in place.

In addition to the risks associated with synthetic biology, panelists discussed several underlying ethical concerns. There is a fundamental unease that some have expressed about scientists “playing god” by creating life in the lab. There are also questions about the long-term social implications of rapid advancements in this field. Speakers stressed that because synthetic biology has vast potential it must be approached with the utmost respect. It is essential that scientists be held accountable for their work and the potential risks.

The meeting closed with a discussion of the current biotechnology regulatory system. The National Institutes of Health (NIH) utilizes risk-based assessments, with specific focus on biosafety and biosecurity. The current generation of synthetic biology falls under the guise of these regulations. However, as the science advances, the primary challenge facing the federal government will be the development of regulatory standards that anticipate future applications of synthetic biology. The international nature of scientific knowledge and access to technology will undoubtedly affect regulation. It was recommended that the federal government focus its efforts on the creation of a methodology for assessing future risk, on developing controls for synthetic biology, and on increasing the transparency of scientific research.

A greater public dialogue about the benefits of synthetic biology research is

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

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essential. In his letter to Dr. Gutmann, President Obama stated, "It is vital that we as a society consider, in a thoughtful manner, the significance of this kind of scientific development." Synthetic biology has a diverse range of potential applications, including use as a tool for biofuels, or for the development of vaccines and drug precursors.

In his initial letter of request, the President instructed the Commission to report back its findings and any recommendations within six months. This is the first of three Commission meetings planned for this year. The next will be held in September in Philadelphia, PA, followed by a November meeting in Atlanta, GA.

[1] Executive Order 13521 of November 24, 2009

<http://www.bioethics.gov/documents/Executive-Order-Establishing-the-Bioethics-Commission-11.24.09.pdf> p. 62671

[2] Letter to Dr. Amy Guttmann and Christopher H. Browne from President Barack Obama May 20, 2010  
<http://news.sciencemag.org/scienceinside/r/assets/2010/05/20/Guttmann.pdf>

[3] To read more about Dr. Venter's work, see [PER Vol. 23 \(2\) 2010 "At the Bleeding Edge of Synthetic Genomics"](#)

To learn more about the Commission, see: <http://www.bioethics.gov/>

For more background on the July meeting, see:

<http://www.bioethics.gov/background/>

To view a transcript of the event, see: <http://www.bioethics.gov/transcripts/synthetic-biology/>

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## WEBSITE ATTEMPTS TO FILL VOID IN STEM CELL OVERSIGHT

The International Society for Stem Cell Research (ISSCR), a nonprofit organization formed in 2002 to foster the exchange of information on stem cell research, has announced the launch of a new website to provide patients with information on stem cell treatments and clinics around the world [1]. The site, "A Closer Look at Stem Cell Treatments" [2], hopes to arm curious and often desperate patients with tools to objectively evaluate stem cell treatments

offered by a wide range of clinics worldwide. In an increasing wave of stem cell tourism, patients are taking advantage of lax oversight in underdeveloped as well as developed nations by pursuing dubious stem cell treatments – many of which are aggressively marketed on the Internet.

The threat posed by some of these treatments is real; an American woman recently died as a result of an unproven stem cell treatment administered in a clinic in Thailand [3]. Suffering for twenty years from lupus nephritis, a disease causing the immune system to attack the kidneys, the woman elected to pursue a treatment in 2006 in which her own stem cells, harvested from the bone marrow, were injected directly into her kidneys. The treatment was loosely based on published work demonstrating some success in animals after an injection of stem cells into the blood stream. The woman's procedure resulted in lesions on her left kidney, liver, and right adrenal gland [4]. A post-mortem examination of the left kidney revealed the lesions consisted of precursor blood vessel and bone marrow tissue [5]. Meanwhile, the Centeno-Schultz clinic near Denver offers a treatment for joint problems by injecting a patient's own purified stem cells directly into the joints; the treatment was never subjected to a double blind clinical trial and has not received FDA approval. Dr. Christopher Centeno, the head of the clinic, claims the FDA lacks jurisdiction over the treatment, thus rebuffing an attempt by the FDA to assert control over it [5]. Despite the disagreement with regulators, Dr. Centeno has started to publish results of the procedure, now in its fifth year, in peer reviewed journals [6].

To address these problems, the ISSCR's website takes a two pronged approach [2]. First, it serves as a source of basic scientific information, written in plain language, about stem cell biology as well as the clinical trial process. Additionally, the site provides a list of questions a would-be stem cell tourist is advised to ask before agreeing to treatment, at home or abroad. Second, the ISSCR plans to offer a list of entities offering stem cell therapies and whether they provide "evidence that appropriate oversight and other patient protections are in place" [7]. Making no attempt to be authoritative or

comprehensive, the ISSCR will grow its list of clinics and treatments by accepting, through the website, submissions of clinics offering stem cell treatments from anyone with a web browser – including the clinics themselves. The ISSCR promises to make contact with the clinics and post whether they responded to a series of questions regarding safeguards, regulatory approval, and scientific evidence. Equipped with this set of information, the patients and all interested stakeholders are expected to make their own decisions about pursuing stem cell therapies.

[1] ISSCR Press Release. (06/08/2010). [http://www.isscr.org/press\\_releases/closer\\_look\\_at\\_stem\\_cell\\_treatments.html](http://www.isscr.org/press_releases/closer_look_at_stem_cell_treatments.html)

[2] <http://www.closerlookatstemcells.org>

[3] Coglán, A., Death revives warnings about rogue stem cell clinics. *New Scientist*. (06/17/2010).

<http://www.newscientist.com/article/dn19056-death-revives-warnings-about-rogue-stem-cell-clinics.html?full=true>

[4] Thirabanjasak, D., et al. Angiomeproliferative Lesions Following Autologous Stem Cell Therapy. *Journal of the American Society of Nephrology*. 21, 1218-1222, (06/17/2010).

[5] Regulators must step up stem cell oversight. *Nature Medicine*. 16, 492, (05/2010).

[6] Centeno, C. J., et al. Safety and Complications Reporting on the Re-implantation of Culture-Expanded Mesenchymal Stem Cells using Autologous Platelet Lysate Technique. *Current Stem Cell Research & Therapy*. 5, 81-93, (03/2010).

[7] Executive Summary of A Report by the ISSCR Task Force on Unproven Stem Cell Treatments.

[http://www.closerlookatstemcells.org/AM/Template.cfm?Section=About\\_ISSCR&Template=/CM/ContentDisplay.cfm&ContentID=1770](http://www.closerlookatstemcells.org/AM/Template.cfm?Section=About_ISSCR&Template=/CM/ContentDisplay.cfm&ContentID=1770)

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## WORKING TOWARDS GLOBAL ACCESS TO MEDICINE AND HEALTH TECHNOLOGY

Recent strides have been taken by universities throughout the United States, as well as by biotechnology companies,

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to support the global health effort. Within the last year, the Association of University Technology Managers (AUTM) and the Biotechnology Industry Organization (BIO) released statements outlining their strategies for improving access to medical research in the developing world.

These statements come not a moment too soon for nations that lack access to essential medicines and technologies. The World Health Organization notes that “essential medicines are intended to be available within the context of functioning health systems at all times in adequate amounts, in the appropriate dosage forms, with assured quality, and at a price the individual and the community can afford [1].” In developing countries, essential medicines constitute upwards of 25-66% of all public and private health care spending. Yet, an estimated 40 million people in developing nations will die this year from otherwise treatable diseases [1]. Research institutions are in a unique position to help increase the availability of necessary medical products.

On November 9, 2009, with the support of six major universities, AUTM published its *Statement of Principles and Strategies for the Equitable Dissemination of Medical Technologies* [2]. The document elaborates on ideas that were first articulated by Stanford University in March 2007 [3]. The new strategies are intended to guide the licensing practices of universities in order to guarantee developing nations access to their products. The statement reads, “Universities in the developed world work to facilitate the commercialization of the health-related inventions of academic researchers by developing and disseminating these technologies for the public good [2].” AUTM’s statement outlines the commitments of signatories to promote access to research in the developing world. It includes, in summary:

- Work to develop licensing agreements that will allow global access to medicines and technology
- When possible, remove intellectual property barriers by not-patenting research or abandoning patents in developing countries

- When patents are in place, licensing agreements should support global access by guaranteeing such things as march-in rights to the university, tiered pricing, or financial incentives. These are intended to assure that the university maintains the rights to distribute its research to areas in need.
- Support the development of technologies and medicines for diseases that “disproportionately burden individuals in the developing world.”

In addition to the statement of principles, the AUTM website provides a link to a Global Health Toolkit. Here one can find examples of licensing agreements, as well as numerous related journal articles and web pages. There are currently 23 signatories to AUTM’s statement of principles, including the National Institutes of Health (NIH).

A policy statement titled *Increasing Access to Medicines in the Developing World*, which outlines similar strategies, was released by BIO on May 3, 2010 [4]. As the world’s largest biotechnology organization, BIO urges its members, which include small companies, industry, academic institutions, pharmaceutical corporations, and investment firms, to tailor their individual business models to support improved access to medicine and research. The main points of the policy statement are:

- Enter into licensing agreements that expand global access to medicine
- Identify technology and research areas that benefit the developing world
- Emphasis on forming partnerships with other companies that aim to advance BIO’s goals of developing necessary medicine and technology
- Inclusion of underrepresented populations when conducting clinical trials
- Implement strategies that make commercialized medicine more affordable to governments around the world
- Find ways to navigate around non-price barriers that often make medicines and medical technologies unattainable

BIO does note, however, the importance of intellectual property to participating

research institutions and companies. The policy statement reads, “the goals of increasing access to medicines, respecting intellectual property rights, and maintaining commercial viability are not mutually exclusive, rather they are mutually supportive [4].”

Both AUTM and BIO are aware that numerous factors, many outside of the control of such organizations, affect the public health of developing nations. Despite these obstacles, research institutions can do their part to guarantee the safety and effectiveness of products, the development of new research strategies targeted at diseases that disproportionately effect the developing world, and the tailoring of licensing agreements and intellectual property clauses to allow access to nations in need.

[1][http://www.who.int/medicines/service/essmedicines\\_def/en/index.html](http://www.who.int/medicines/service/essmedicines_def/en/index.html)

[2]<http://www.autm.net/Content/NavigationMenu/TechTransfer/GlobalHealth/stateofprinciples.pdf>

[3]<http://otl.stanford.edu/documents/whitepaper-10.pdf>

[4][http://www.bio.org/healthcare/innovation/Access\\_to\\_Medicines\\_Policy\\_Statement\\_Final.pdf](http://www.bio.org/healthcare/innovation/Access_to_Medicines_Policy_Statement_Final.pdf)

To read AUTM’s statement of principles and list of current signatories, see: <http://www.autm.net/source/Endorsement/endorsement.cfm?section=endorsement>

To read the BIO policy statement, see: [http://www.bio.org/healthcare/innovation/Access\\_to\\_Medicines\\_Policy\\_Statement\\_Final.pdf](http://www.bio.org/healthcare/innovation/Access_to_Medicines_Policy_Statement_Final.pdf)

To read Stanford’s *Nine Points to Consider in Licensing University Technology*, see: <http://otl.stanford.edu/documents/whitepaper-10.pdf>

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## **PRINCIPLES FOR DIRECT TO CONSUMER GENETIC TESTING IN THE UK**

On August 4, 2010, the UK’s Human Genetics Commission (HGC) published a set of guidelines for direct-to-consumer (DTC) genetic tests. The report, *A Common Framework of Principles for direct-to-consumer genetic testing services*, is intended to “promote high

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standards and consistency in the provision of genetic tests amongst commercial providers at an international level in order to safeguard the interests of people seeking genetic testing and their families [1].”

DTC genetic tests are marketed to consumers without advice or consultation from a medical professional. A range of direct-to-consumer testing services are currently available. Examples include diagnostic tests, carrier tests, prenatal tests, disease susceptibility tests, and pharmacogenetic tests.

The Principles are the collaborative effort of representatives from various stakeholders. They are designed to “cover all aspects of direct-to-consumer genetic testing services, including the marketing and advertising of tests, the collection, analysis and storage of biological samples, the interpretation of results and the provision of results to the consumer [2].” The Principles encourage transparency of marketing, accuracy of scientific information, and consumer consultation with or access to counselors. The guidelines include, in summary:

- Marketing for tests should describe the utility and limitations of the tests. Any claims made about the tests should be supported by scientific literature.
- Calculations of risk for diseases, condition, and trait should be based upon standardized statistical methods.
- The consumer should be provided with general information about the role of genetics and genetic testing.
- The consumer should be given clear information about the fate of their DNA samples.
- Information about the clinical validity of the genetic marker for the test, and about the outcomes of the test should be made available.
- The consumer should be offered access to counseling services both before and after the test. Furthermore, tests for inherited diseases should only be available to consumers who have the opportunity to receive genetic counseling.
- To ensure confidentiality, test providers and laboratories must

require patient consent before releasing genetic information.

The HGC also offers principles for the handling of genetic samples, laboratory analysis, interpretation and provision of test results, continuing support to customers who require additional information, and customer complaints.

Guidelines like those released by the HGC are a critical step towards ensuring the health and safety of consumers. Genetic tests often have serious, perhaps unanticipated, consequences. It is essential the tests and analyses are held to the highest quality, and that consumers understand the implications of genetic testing. As noted in its report, the HGC serves an advisory role, and holds no regulatory authority in the UK. The Principles are designed to direct future policy by the proper authorities.

The U.S. has no formal regulations for direct-to-consumer testing. The Food and Drug Administration (FDA) recently held a meeting to discuss government oversight of laboratory developed tests, a category which includes DTC testing services [3]. Many of the issues outlined by the HGC’s Principles were discussed at the public meeting. One of the primary challenges facing both the U.S. and the UK is the global nature of DTC services and the transfer of goods across national lines.

[1] Human Genetics Commission “A Common Framework of Principles for direct-to-consumer genetic testing services.”

<http://www.bshg.org.uk/Principles.pdf>  
p.1

[2] Human Genetics Commission “A Common Framework of Principles for direct-to-consumer genetic testing services.”

<http://www.bshg.org.uk/Principles.pdf>  
p.2

[3] To read more about the FDA/CDHR Public Meeting on the Oversight of Laboratory Developed Tests, see <http://www.fda.gov/MedicalDevices/NewsEvents/WorkshopsConferences/ucm212830.htm>

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## In the Societies

### APA SPREADS SUNSHINE WITH NEW CODE OF CONDUCT

On June 11, 2010 the American Psychiatric Association (APA) approved a new code of conduct designed to ensure greater financial transparency between the APA and outside organizations, and to better manage conflicts of interest among the APA’s staff, industry, and individuals serving as elected members of the APA.

The new code establishes a board-level Conflict of Interest Committee to oversee the APA’s relationships with outside organizations and implement the principles and standards into practice. The new standards require financial relationships between researchers and educational program developers and outside organizations to be clearly stated. Educational programs developed by the APA are required to follow the Accreditation Council for Continuing Medical Education standards for independent and impartial presentations, whether or not the programs provide continuing medical education credits. The code also prohibits endorsements for products or manufacturers in advertisements in APA publications, meetings, and websites.

Enhanced financial disclosure attempts to address concerns of undue influence on psychiatrists’ research and prescription practices. Concerns of bias are not unwarranted; for instance, researchers have discovered that psychiatric clinical trial studies are nearly five times more likely to report positive results if the authors received industry support [1].

Over the past few years, the APA has made changes to its practices after public pressure and scrutiny from U.S. Senate Finance Committee investigations brought to light several prominent psychiatrists’ undisclosed financial ties with pharmaceutical companies. Development of the recently adopted code of conduct began while Alan Schatzberg, among those investigated by the Senate committee, was the APA’s president.

The association has been phasing out

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industry-sponsored symposia at its annual meeting and industry advertising in its medical journal. Over the past year alone, the APA has experienced a \$7.5 million decrease in pharmaceutical-industry funding, resulting in a 10 percent cut in the association's revenue [2]. However, under the new code the APA can still accept pooled money from multiple drug companies to support public education and mental health awareness research projects.

[1] Perlis, RH *et al.* (2005). Industry sponsorship and financial conflict of interest in the reporting of clinical trials in psychiatry. *Am J Psychiatry*. 162 (10): 1957-1960.

[2] Wall Street Journal, 07/11/10, "Psychiatric Group to Unveil Guidelines to Curb Conflicts", <http://online.wsj.com/article/SB10001424052748703627704575298992391229472.html>

To read the APA press release, visit: <http://www.psych.org/MainMenu/Newsroom/NewsReleases/2010-NewsReleases/APA-Adopts-Guidelines.aspx>

To view the new APA code, visit: <http://www.psych.org/Resources/Governance/Disclosure-of-Interests-and-Affiliations/APA-Code-of-Conduct.aspx>

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## Resources

### METAVERSAL ETHICS: NEW DISCUSSIONS OF VIRTUAL WORLDS

A review of *Emerging Ethical Issues of Life in Virtual Worlds*, edited by Charles Wankel and Shaun Malleck

Wankel, Charles and Shaun Malleck (eds.), *Emerging Ethical Issues of Life in Virtual Worlds*. Charlotte, North Carolina: Information Age Publishing, 2010. US \$39.99 paper.

Imagine a world of complete autonomy, where the imaginary and the real merge and the line separating illusion and truth floats hazily before you. Inhabitants may travel to far and often bizarre lands, immerse themselves in alien cultures, or simply indulge in lives of leisure.

Through information technology and the Internet, these types of virtual experiences are well within reach.

Since the inception of online worlds like *Second Life*, scholars have noted the expanding role of virtual worlds in human communications. Expecting an increase in virtual world utilization, researchers have developed a new field: virtual world ethics. In compiling *Emerging Ethical Issues of Life in Virtual Worlds*, Charles Wankel and Shaun Malleck contribute to the growing discussion of ethics issues surrounding virtual world research and communications. Furthermore, their anthology serves as a foundation for discussions about ethics research and theory. Written by academics in the fields of computer science, philosophy, law, information studies, cultural studies, professional ethics, and communications, the book explores hot topic issues in this novel field while emphasizing the need for ethics guidelines and norms of behavior to aid developers and users.

Wankel and Malleck open with a brief discussion of the ethical issues surrounding virtual world research, the field's connection to computer ethics, and the technology's ever-increasing potential for growth. They address the common themes of this new field and provide a clear, concise outline of the anthology and its contents.

The contributing authors address a plethora of topics, including virtual violence, the ethics of game design, copyright and ownership issues of online gaming, co-authorship, virtual education, virtual charities, virtual sex, illusions of reality, global communities, and accessibility for the disabled. They ask questions about what should be allowed in terms of virtual world development, use, and research, and how to address the multitude of issues cropping up in this emergent field. Most of these questions, however, are left unanswered. Instead, the authors consistently recommend the creation of ethics guidelines that researchers, game developers, and businesses and institutions using virtual worlds may apply in their everyday interactions.

Each contributing author provides insight into a subfield of virtual world ethics, but I found two chapters particularly useful.

Chapter 5, *Research Ethics and Virtual Worlds*, addresses the ethics of human subject-based research in virtual worlds, describes the types of virtual worlds, and recommends future actions such as the creation of ethics codes, guidelines for researchers and reviewers, means of educating researchers on virtual world issues, informed consent requirements, and virtual world research policies. The authors review the core principles of research ethics, list ethical considerations, and analyze researcher impacts. Chapter 11, *The Illusion of Reality: Cognitive Aspects and Ethical Drawbacks*, also takes a proactive stance in offering solutions to ethical risks. The author analyzes the ethical implications of illusions of reality while focusing on the harms of deception, fraud, believability, and underestimating the affects of one's own actions in the real world.

I found these chapters the most helpful and tangible in introducing the topic of virtual world ethics and offering concrete solutions for addressing looming ethics issues. For this reason, I question the anthology's arrangement. The above chapters would have better served following Wankel and Malleck's introduction because they provide a clear background of general ethics in conjunction with virtual world issues. This background would have been helpful before delving into specific issues such as ageplay, virtual charities, education, and accessibility.

While the anthology addresses the "Emerging Issues" of virtual worlds, it does so in a disjointed way. The editors attempt to solidify the various topics presented throughout the anthology through a brief discussion in Chapter 1, but the anthology remains, in essence, a collection of separate opinions, approaches, and topics. Still, this collection illustrates the breadth of virtual world research topics under just the field of ethics.

For the non-expert, this compilation of scholarly articles may feel somewhat out of reach. However, this anthology was published as a resource for academic circles and students in upper-division ethics courses. It thus best serves those with backgrounds in philosophy, ethics,

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and new media.

Most significantly, the timing of this book is ideal. Wankel and Malleck note the increasing use of online worlds in business and education, while the virtual world consultancy K Zero has reported an increase in registered users across all virtual world products in 2009 [1]. Of course, the types of virtual worlds range from 2D social games available through flash players on social networking sites like Facebook, to large multiplayer or 3D games such as *World of Warcraft*. The existence and continued popularity of online virtual worlds reflects how the social, cultural, and ethical aspects of human communications continue to shift. As businesses and universities grow in size and expand internationally, technology innovations are increasingly used to facilitate long-distance communications and interactions. It's at this juncture where the technology of entertainment has the potential to morph into one of business. Over time, businesses have dabbled with virtual worlds like *Second Life* in their everyday interactions; universities have created virtual classrooms; and charities have utilized the wide reach of online gaming to raise funds. Lucrative businesses even exist within the virtual frenzy; for example, the company *Zynga* runs a number of online gaming sites that sell virtual goods to users through the exchange of US dollars for virtual dollars.

The book as a whole is groundbreaking in the sense that virtual world ethics is a fairly new field, complicated by the intricacies and autonomy of cyberspace. It represents the foundation of very diverse and novel research, and so this volume makes an excellent companion resource for students and academics. The authors draw heavily on *Second Life* as an example of virtual world communication, and an exploration of other online communities would have been refreshing. Nevertheless, the anthology accomplishes the goal of its creators: to highlight new and upcoming virtual world ethics research.

[1] Virtual Worlds News. Virtual Worlds Popularity Spikes, 15 July 2009.  
<http://www.virtualworldsnews.com/2009/07/virtual-world-popularity-spikes.html>

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Summer 2010

## RESPONDING TO RESEARCH WRONGDOING IN THE LAB—A GUIDE

If you suspect a researcher or professional colleague in your laboratory of falsifying data, cutting corners, or plagiarizing, would you intervene? An opinion article appearing in the July 22nd issue of *Nature* [1] suggests that the majority of scientists who witness unethical incidents or instances of misconduct do take action.

The authors conducted a confidential online survey asking investigators who receive funding from the US National Institutes of Health what they have done in the past when they encountered suspected acts of research wrongdoing. Based on their findings, the authors then developed a user-friendly manual [2] to help educate researchers on how to successfully intervene in cases of research misconduct.

The survey, funded by the Office of Research Integrity in cooperation with the National Institute of Neurological Disorders and Stroke, differentiated between formal intervention, such as reporting allegations to a federal or university office, and informal methods of intervention, like discussing concerns with suspects or referring off-hand to good laboratory practices.

Of more than 2,000 scientists surveyed, nearly two-thirds of those who reported witnessing one or more instances of misconduct took some form of action, mostly informal action. The individuals reported that in most instances, the outcome of their interventions, whether formal or informal in nature, were positive. The survey also identified common barriers that prevented the remaining one-third of individuals who observed misconduct from acting, such as fears of retaliation or loss of perceived job prospects.

For federally funded research, the government typically focuses attention on severe cases of research misconduct, a phrase reserved for acts of fabrication, falsification, and plagiarism (FFP). Fabrication is making up data; falsification is modifying research materials to fit desired outcome; and plagiarism includes claiming another's work as your own.

Though data fabrication and falsification were the most frequently cited types of misconduct categories in the survey, other "lesser" forms of unethical actions were also common, and result in poor quality science.

Examples of other types of irresponsible science discussed in the article include:

- Inappropriate publication practices
- Carelessness
- Inadequate supervision of research assistants
- Incompetence
- Creating an unsuitable work environment
- Dishonesty
- Intentional bias
- Failure to follow rules and ethical directives

Together, the actions above and instances of FFP were collectively referred to as research wrongdoing in the survey. Eighty-five percent of survey respondents reported witnessing at least one case of research wrongdoing, totaling over 3,500 separate instances for all respondents. The authors of the survey note that federal agencies only pursue cases of misconduct for projects they fund that fall into the FFP categories; therefore, informal peer intervention may be the only source of correction for other acts of irresponsible science, especially if a researcher is not engaging in the act intentionally.

In response to this survey, the authors created an online guide [2] to instruct and reassure the remaining third of non-intervening scientists that informal interventions can be effective in halting or correcting misbehaviors without creating unsettling laboratory environments.

The manual, *Responding to Research Wrongdoing: a User-Friendly Guide*, provides options for researchers encountering suspicions or evidence of irresponsible science, and guides researchers through intervention methods that reinforce integrity and minimize risking careers or friendships. The guide is designed to offer advice and detailed procedures for individuals to take when deciding if and how to intervene, and it provides many real-life scenarios,

(Resources continued on page 8)

(Resources continued from page 7)

adapted from survey participants' experiences.

The topics covered in the guide include:

- How to get started if you witness an instance of misconduct or wrongdoing
- Defining research misconduct, other acts of irresponsible science, and intent
- Assessing completeness and quality of evidence
- Addressing uncertainties and resistance to intervening, including feelings of regret for forgone opportunities
- Guidance for effective decision-making, risk consideration, and discussion of moral support
- Choosing the correct intervention method by weighing factors including personal characteristics, evidence, relationship with suspect, nature of the act, institutional characteristics, and personal welfare
- Instructions for conducting successful informal interventions, including how to respond to a suspect's reactions
- Detailed instructions for preparing formal misconduct reports

The authors note that the majority of survey respondents viewed misconduct intervention as a moral imperative and a personal responsibility to uphold the standards of science. Although it remains difficult to estimate the rate at which researchers intervene, they find that informal intervention between colleagues is quite common. However, informal intervention may not always be a reasonable alternative—for example, if an alleged offense is very serious or has potential for significant ramifications, formal intervention is recommended. The guide is designed to assist with intervention in every step of the process.

[1] Koocher, G. P., & Keith-Spiegel, P. (2010). Peers nip misconduct in the bud. *Nature*, 466 (7305), 438-440.

[2] Keith-Spiegel P., Sieber J., & Koocher G.P. (2010). Responding to research wrongdoing: a user-friendly guide. Available: [http://www.ethicsresearch.com/images/RW\\_7-17-10.pdf](http://www.ethicsresearch.com/images/RW_7-17-10.pdf)

The guide is available online: [http://www.ethicsresearch.com/images/RW\\_7-17-10.pdf](http://www.ethicsresearch.com/images/RW_7-17-10.pdf)

The authors of the guide are soliciting feedback and will incorporate suggestions as they update the document. To submit feedback, visit their website: <http://www.ethicsresearch.com/freesources/rwrresearchwrongdoing.html>

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## Announcements

**Award** – Applications are currently being accepted for the “2010 Pillars of PRIM&R Award” for research projects aimed at human subjects protections and improvements in animal care and use. Recipients will receive compensation for registration, travel, and accommodations to present their research at either the 2011 Advancing Ethical Research Conference or the 2011 Institutional Animal Care and Use Committee (IACUC) Conference. The deadline to apply is October 29, 2010 at 5:00 pm EST. To learn more about the award, visit: <http://www.primr.org/AboutUs.aspx?id=2428> Contact: [cgunner@primr.org](mailto:cgunner@primr.org), 617.423.4112, ext. 10

**Call for Papers** – The *Journal of Healthcare, Science and the Humanities* (JHSH) invites the submission of topics and manuscripts for the journal's debut in 2011. JHSH is an international peer-reviewed journal that covers a range of topics including, healthcare, medicine, the health sciences, research, and the medical humanities. The journal seeks to explore healthcare related issues across societies and throughout the globe. For more information contact Senior Associate Editor CAPT Bruce Boynton: [Bruce.Boynton@med.navy.mil](mailto:Bruce.Boynton@med.navy.mil)

**Conference** – The Dutch Rathenau Institute's “Making Perfect Life” will be held at the European Parliament in Brussels on November 10, 2010. It is an informational conference about the future of bio-engineering, and the potential scientific, philosophical, and sociological impacts. To register, see the full list of speakers, or to read more about the conference, visit: <http://www.rathenau.nl/en/agenda/meetings/conference-making-perfect-life-bio->

[engineering-in-the-21st-century-1.html](http://www.rathenau.nl/en/agenda/meetings/conference-making-perfect-life-bio-engineering-in-the-21st-century-1.html). Contact: [conference@rathenau.nl](mailto:conference@rathenau.nl)

**Conference** – PRIM&R's “2010 Advancing Ethical Research Conference: Uniting People, Principles, and Practices,” will be held December 6-8, 2010, in San Diego, CA. Topics will include genetics, biobanking, regulations, quality improvement, informed consent, and conflicts of interest, among others. Ten educational programs will also be held on December 5, 2010, prior to the conference. For more information on registration and pre-conference program topics, visit: <http://www.primr.org/Conferences.aspx?id=717>. Contact: [info@primr.org](mailto:info@primr.org)

**Conference** – The Neuroethics Society will hold its 2010 Annual Meeting November 11<sup>th</sup>-12<sup>th</sup> in San Diego, CA. The program for the meeting will include Addiction Neuroethics, Global Mental Health and Neuroethics, and Teaching Neuroethics. For registration and to view the complete schedule, see: [www.neuroethicsociety.org](http://www.neuroethicsociety.org). Contact Karen Graham: [kgraham@neuroethicsociety.org](mailto:kgraham@neuroethicsociety.org)

**Fellowship** – Applications are being accepted for two-year postdoctoral Bioethics Fellowships at the National Institutes of Health, Department of Health and Human Services, to begin September 2011. Fellows will conduct research in the ethics of health policy, international research ethics, and human subject research. Submit applications to Becky Chen, Bioethics – NIH, 10 Center Drive, Building 10, Room 1C118, Bethesda, MD 20892 – 1156 by December 31, 2010. For application requirements and more information, visit: [www.bioethics.nih.gov](http://www.bioethics.nih.gov). Contact: [bchen@cc.nih.gov](mailto:bchen@cc.nih.gov); 301.496.2429

**Fellowship** – The Cleveland Clinic is currently accepting applications for the Cleveland Fellowship in Advanced Bioethics. Participants in the two-year program will take part in public bioethics education as well as clinical ethics consultation, and will have firsthand research experience. The deadline for applications is December 15, 2010. The new class of fellows will begin on July 1, 2011. For more information, or to access the online application, see: <http://www.clevelandclinic.org/bioethics/fellowship> Contact: Mary Adams, [adamsm@ccf.org](mailto:adamsm@ccf.org); 216.445.2739