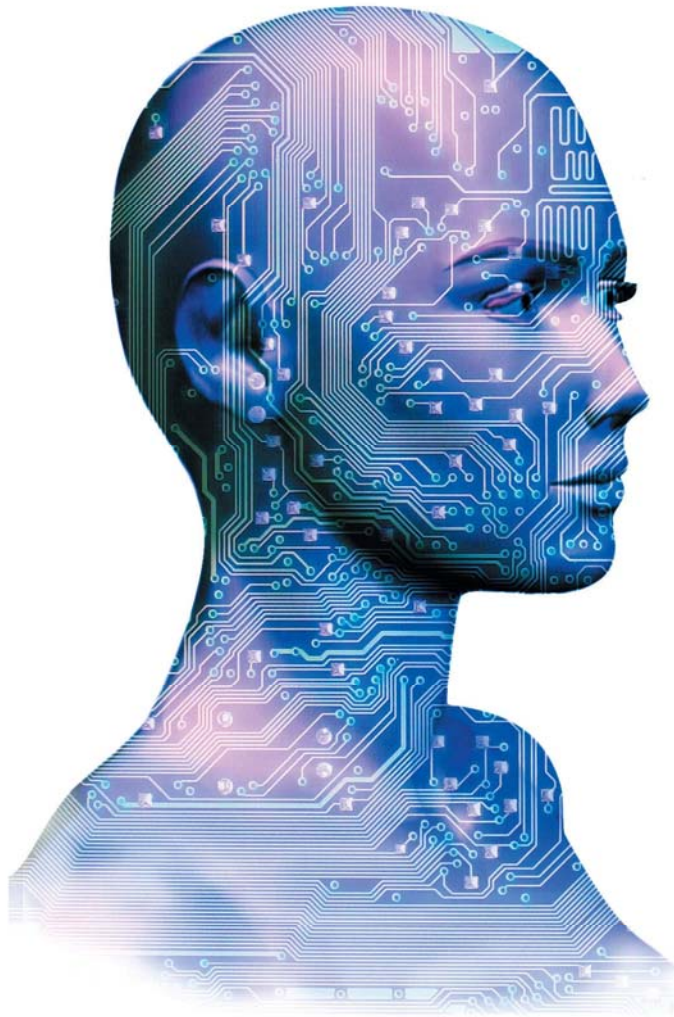


# Human Enhancement Technologies and Human Rights

May 26-28, 2006 Stanford Law School



...THE RIGHT OF EVERYONE TO THE  
ENJOYMENT OF THE HIGHEST  
ATTAINABLE STANDARD OF PHYSICAL  
AND MENTAL HEALTH..  
UN COVENANT ON ECONOMIC, SOCIAL  
AND CULTURAL RIGHTS



Stanford Center for  
Law and the Biosciences

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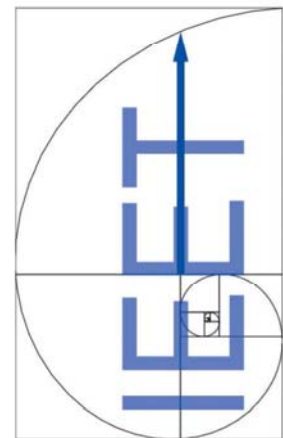
Center for Cognitive Liberty and Ethics



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**INSTITUTE FOR ETHICS  
AND EMERGING TECHNOLOGIES**

### Conference Organizing Committee

- **Conference Chair: James J. Hughes Ph.D.**, Public Policy Studies, Trinity College, Hartford, CT USA; Executive Director of the Institute for Ethics and Emerging Technologies
- **Henry Greely J.D.**, Prof. of Law and Director, Stanford Center for Law and the Biosciences, Stanford University
- **Dale Carrico Ph.D.**, Dept of Rhetoric, University of California at Berkeley
- **Richard Glen Boire J.D.**, Co-Director and Legal Counsel for the Center for Cognitive Liberty & Ethics
- **Nick Bostrom Ph.D.**, Director, Future of Humanity Institute and Dept. Philosophy, Oxford University, UK
- **Wrye Sententia Ph.D.**, Co-Director, Center for Cognitive Liberty & Ethics

The **Institute for Ethics and Emerging Technologies** was founded by philosopher Nick Bostrom and bioethicist James J. Hughes to support thinkers who examine the social implications of accelerating technological change, and promote public policies to ensure that emerging technologies are safe and equitably distributed. For more information, please visit <http://ieet.org>.

The **Center for Cognitive Liberty & Ethics** is a network of scholars elaborating the law, policy and ethics of freedom of thought. The CCLE supports social impact litigation that has the potential to broadly advance cognitive liberty, and monitors developments in neurotechnology, cognitive sciences and the law to identify and offer guidance to policy makers, industry, and the general public concerning those developments with a potential to significantly impact freedom of thought. For more information, please visit <http://cognitiveliberty.org>.

The **Stanford Center for Law and the Biosciences** is directed by Professor Hank Greely, and situated in the locus of the world's biotechnology industry, within a preeminent research university, the Center convenes a forum of academicians, lawyers, scientists, policy makers, and law students. Through conferences, workshops, lectures, and academic courses, the Center promotes research and public discourse on the ethical, legal, scientific, economic, and social implications of accelerated technological change. For more information, please visit <http://www.law.stanford.edu/programs/academic/lst/bioscience/>.

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### Thanks and Acknowledgements

Thanks to Mark Anderson and The Zimmer Family Foundation for their generous gifts to the Mental Diversity Scholarships.

Thanks to Peter Houghton and the ExtraLife Foundation for their donation of Saturday's lunch.

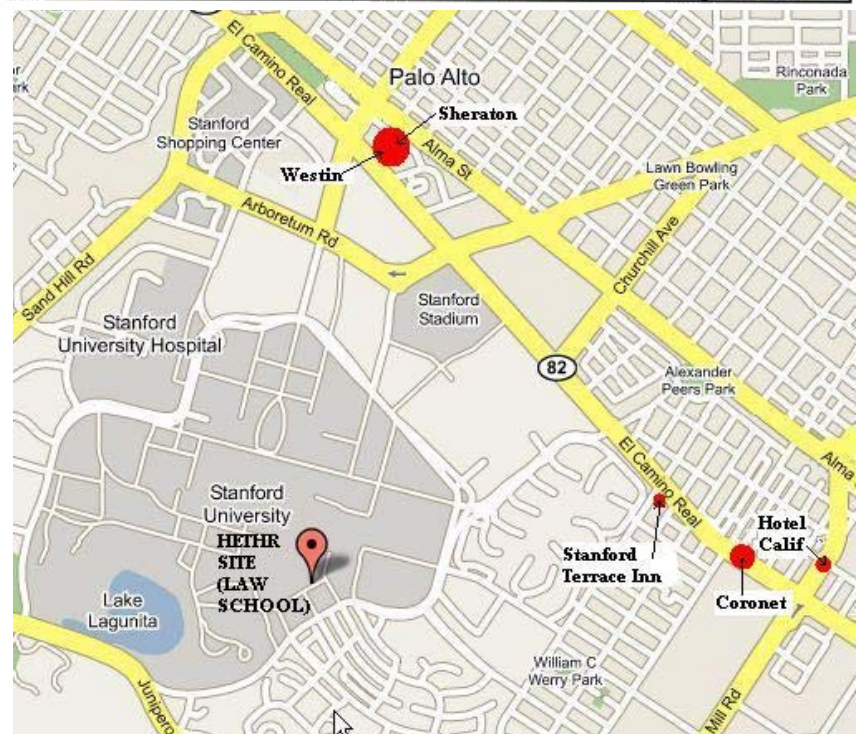
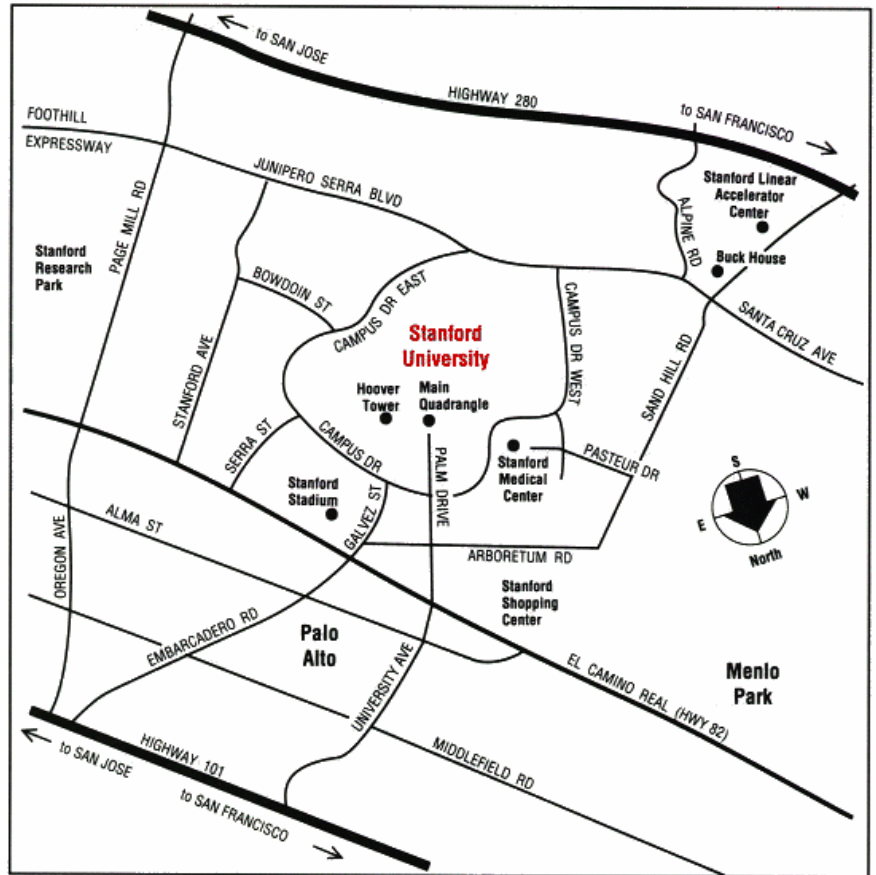
Thanks to our volunteers, Chris Kajtor, Michael Yin Jin, Yonah Berwaldt and Jonathan Pfeiffer.

# Getting to HETHR

## Driving

**From San Francisco via Highway 280.** Take 280 South in the direction of San Jose. Proceed to the Alpine Road exit (after Sand Hill Road). Turn left on Alpine Road, drive approximately one mile to the first traffic light, and turn right onto Junipero Serra Boulevard. Turn left at the second traffic light onto Campus Drive East. (The first traffic light is Campus Drive West). Turn left at the first stop sign onto Mayfield Avenue. Mayfield turns sharply to the left after approximately 100 yards. After that turn, you will see a parking lot on your right. Turn into that lot and park. From the parking lot, walk onto campus, keeping Tresidder Union on your left and Dinkelspiel Auditorium on your right. Turn toward your right after you pass Dinkelspiel. The Post Office will be in front of you. Walk between the Post Office and the Stanford Bookstore, which will be on the left. The Law School will be straight ahead. Proceed into the main court between the Law School and Meyer Library. The main entrance to the Law School will be on your right.

**From San Francisco via Highway 101.** Take 101 South in the direction of San Jose/Los Angeles. Proceed to the Embarcadero/Oregon Expressway exit and follow the signs to Embarcadero West/Stanford University. Stay on Embarcadero, heading west, for approximately two miles. After you cross El Camino Real, Embarcadero will become Galvez. Stay in the left lane, proceeding straight into campus. (The stadium will be on the left). Turn left at the first stop sign after the stadium onto Campus Drive. Proceed approximately one mile to Mayfield Avenue. Turn right onto Mayfield. Mayfield turns sharply to the left in approximately 100 yards. After that turn, you will see a parking lot on your right. Turn into that lot and park. From the parking lot, walk onto campus, keeping Tresidder Union on your left and Dinkelspiel Auditorium on your right. Turn toward your right after you pass Dinkelspiel. The Post Office will be in front of you. Walk between the Post Office and the Stanford Bookstore, which will be on the left. The Law School will be straight ahead. Proceed into the main court between the Law School and Meyer Library. The main entrance to the Law School will be on your right.



**From San Jose via Highway 280.** Take 280 North in the direction of San Francisco. Proceed to the Page Mill Road exit, turning right onto Page Mill Road at the end of the off-ramp. At the second traffic light, turn left onto Junipero Serra Boulevard. Proceed approximately one mile to the traffic light at Campus Drive East. Turn right onto Campus Drive. Turn left at the first stop sign onto Mayfield Avenue. Mayfield turns sharply to the left after approximately 100 yards. After that turn, you will see a parking lot on your right. Turn into that lot and park. From the parking lot, walk onto campus, keeping Tresidder Union on your left and Dinkelspiel Auditorium on your right. Turn toward your right after you pass Dinkelspiel. The Post Office will be in front of you. Walk between the Post Office and the Stanford



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## Taking Public Transportation to Stanford Law School

**Train.** Caltrain offers service throughout the Bay Area and in particular to Stanford from the San Francisco airport/area and San Jose airport/area. Caltrain deposits passengers at the Palo Alto/University Avenue train station, from which they may use Stanford's Marguerite shuttle to reach on-campus destinations.

**Stanford's Marguerite shuttle** is available to transport passengers from the Palo Alto/University Avenue Caltrain station onto campus. The B-line shuttle, "clockwise," takes passengers from the train station to the Law School; the "counter-clockwise" shuttle returns passengers to the train station.

# Local Restaurants within 1 mile

*In increasing distance from the Law School*

## On Campus

Jamba Juice	(650) 833-6845	459 Lagunita Dr
Bites Café	(650) 736-0456	350 Serra Mall
Stanford Golf Course Rstrnt	(650) 325-4427	198 Junipero Serra Blvd

## 700 Welch Street (on North Side of Campus near hospital)

Tengu Sushi	(650) 326-8079
Stanford Barn Gourmet	(650) 323-2292
California Cafe Bar & Grill	(650) 325-2233

## El Camino Real (the street the hotels are on)

Starbucks	(650) 320-8125	2000 El Camino Real
Sundance The Steakhouse	(650) 321-6798	1921 El Camino Real
Fresh Taste Mandarin Kitchen	(650) 324-8749	2107 El Camino Real
Wang's Chinese Restaurant	(650) 327-2888	2209 El Camino Real
Jack In The Box	(650) 856-0350	2280 El Camino Real
Cold Stone Creamery	(650) 323-2102	855 El Camino Real # 9
Kirk's Steakburgers	(650) 326-6159	855 El Camino Real # 75
Cook Book Restaurant	(650) 321-7500	855 El Camino Real # 127
Douce France	(650) 322-3601	855 El Camino Real # 104
Hobee's Restaurant	(650) 327-4111	855 El Camino Real # 67
Some Kind Of Place	(650) 321-4730	855 El Camino Real # 85
Village Cheese House	(650) 326-9251	855 El Camino Real # 157
Spot A Pizza Place	(650) 324-3131	855 El Camino Real # 107
Jamba Juice	(650) 325-2582	855 El Camino Real # 69
Sushi House	(650) 321-3453	855 El Camino Real # 158
Peet's Coffee & Tea Inc	(650) 328-4771	855 El Camino Real # 77
Rojoz Burrito Wraps	(650) 324-9727	855 El Camino Real # 60
Scott's Seafood Bar & Grill	(650) 323-1555	855 El Camino Real # 1
Peking Duck	(650) 856-3338	2310 El Camino Real
KFC	(650) 321-2287	2305 El Camino Real
Soleil Restaurant	(650) 321-4422	675 El Camino Real

## California Avenue (off of El Camino Real)

Quizno's Classic Subs	(650) 330-0111	490 S California Ave
Bistro Elan	(650) 327-0284	448 S California Ave
Golden Wok	(650) 327-2222	451 S California Ave
La Bodeguita Del Medio	(650) 326-7762	463 S California Ave
Cafe Brioche	(650) 326-8640	445 S California Ave
Joanie's Café	(650) 326-6505	447 S California Ave
Palo Alto Sol Restaurant	(650) 328-8840	408 S California Ave

## PROGRAM

<b>Friday</b>	<b>Human Rights in an Enhanced Future</b>	
7:00-9:00pm	Moderator: Hank Greely J.D.	
Room 190	Ron Bailey	
	William Hurlbut M.D.	
	Erik Davis	
<b>Saturday</b>	<b>Room 190</b>	<b>Room 180</b>
8:00-9:00am	Registration and Refreshments	
9:00-9:15am	Welcome and Opening Comments James Hughes Ph.D.	
9:15-10:45am	<b>Enhancement and Human Rights</b>	
Room 190	Moderator: Nick Bostrom Ph.D.	
	Patrick Hopkins Ph.D. “Why Human Rights are a Problem for Enhancement”	
	Chris Gray Ph.D. “Cyborg Political Technologies”	
	Nigel Cameron Ph.D. “Some caveats for enhancers”	
11:00- 12:00am	<b>Parental Obligations and the Consent of the Unborn</b>	<b>Faith Perspectives on Life Extension</b>
	Moderator: James Hughes Ph.D.	Moderator: Michael LaTorra
	Kirsten Rabe Smolensky J.D. Parental Liability for Germline Genetic Enhancement: To Be or Not to Be?	Brad Mellon Ph.D. Christian Reflections on Radical Life Extension and Human Rights
	Martin Gunderson Ph.D. Genetic Engineering and the Consent of Future Generations	Ted Peters Ph.D. Playing God: Theological Reflections on Genetic Enhancement
12:00-1:00pm	Lunch provided by the Extra Life Foundation	

<b>Saturday</b>	<b>Room 190</b>	<b>Room 180</b>
1:00-2:45pm	<p><b>Democratizing the Genome</b>  Moderator: George Dvorsky  Gregory Fowler, Ph.D. “Democratizing Genetic Technology”  Colin Farrelly Ph.D. “Preimplantation Genetic Diagnosis and Deliberative Democracy”  Fritz Allhoff Ph.D. “Germ Line Genetic-Enhancement and Rawlsian Primary Goods”  Ravi Glasser-Vora “Informed Consent: the break between eugenics and techniques of human enhancement”</p>	<p><b>Celebrating Morphological Diversity</b>  Moderator: Dale Carrico Ph.D.  Robin Zebrowski “Every Body is Already Different: How the Myth of a Standard Body Feeds the Myth of an Authentic Self”  Anita Silvers Ph.D. “The right not to be normal as the essence of freedom”  Shannon Ramdin “Transhumanism and the O(/o)ther”  Jess Cadwallader “Suffering, Bodily Tolerances and ‘Enhancement’ Discourse”</p>
3:00-4:30pm	<p><b>Equity, Technology and State Power</b>  Moderator: Anders Sandberg Ph.D.  Fred Gifford Ph.D. “Ethical Issues in Enhancement Research”  Robert Schwartz, J.D. “The Medicalization of Body Modification and the Ethical Obligations of Health Care Providers”  Laura Colleton J.D. “Health Care Access in the U.S. and the Elusive Line Between Enhancement and Therapy”  Nikki Sullivan, Ph.D. and Susan Stryker, Ph.D. “King’s Body, Queen’s Member: State Sovereignty, Transsexual Surgery, and Self-Demand Amputation”</p>	<p><b>Arguments for Restricting Enhancement</b>  Moderator: [ ]  Eric Racine Ph.D. “Two moral tests for enhancement”  Martin Gunderson Ph.D. “Enhancing Human Rights: How the Use of Human Rights Treaties to Prohibit Genetic Engineering Weakens Human Rights”  Kristi Giselsson “How can the language of human rights guide us in framing ethical issues surrounding human enhancement?”  Andy Miah Ph.D. “The Right to Remain Natural: Criminalising Enhancement in Elite Sport”</p>
4:40-6:00pm	<p><b>Feminism, Germinal Choice and Procreative Liberty</b>  Moderator: Dale Carrico Ph.D.  Nanette Elster J.D., M.P.H. “Barriers to Procreative Liberty: Legal, Ethical, and Racial Issues”  Annalee Newitz Ph.D. “Feminists for Genetic Engineering”  Kerry Lynn Macintosh J.D. “Illegal Beings: Human Clones and the Law”</p>	<p><b>From Human Rights to the Rights of Persons</b>  Moderator: Nick Bostrom Ph.D.  George Dvorsky “All Together Now: Developmental and ethical considerations for biologically uplifting non-human animals”  Jeff Medina “Personhood, complexity, and enhancement”  Martine Rothblatt, Ph.D, JD, MBA “Of Genes, Bemes and Conscious Things: Transhuman Enhancements and Transbeman Rights”</p>
8:00-9:30pm Room 190	<p><b>Aubrey de Grey, Ph.D. “Our Right to Life”</b>  <b>Walter Truett Anderson Ph.D. “The Big Picture: Enhancement on a Global Scale”</b>  Moderator: James Hughes Ph.D.</p>	

<b>Sunday</b>	<b>Room 190</b>	<b>Room 180</b>
9:00-10:00am	Moderator & Opening Comments: Wrye Sententia, Ph.D. <b>Henry T. Greely, J.D.</b> <b>“Rights to Enhancement’: The Current American Legal Landscape”</b>	
10:15-11:45am	<b>Nanoethics, from Disability to Enhancement</b> Moderator: Wrye Sententia Ph.D. Michael Chorost Ph.D. “The Myths of Human Enhancement” Christine Peterson “Use of Technology for Body Enhancement: Prospects, Ethics & Limits” Patrick Lin, Ph.D. “Finding Reasons: A Critical Look at Recent Pro-Enhancement Arguments”	<b>Cognitive Liberty, Rights and Justice</b> Moderator: Richard Glen Boire J.D. Eva Caldera “Cognitive Enhancement and Theories of Justice” Dawn Jakubowski, Ph.D. “Cognitive Enhancement and Liberatory Possibilities”
11:45-1:15 pm	LUNCH	
1:15-1:45pm	<b>Richard Doyle Ph.D.</b> <b>“Biotelemetrics: Towards a Peer to Peer Privacy Planet?”</b> Moderator: Richard Glen Boire J.D.	
2:00-3:30 pm	<b>Cognitive Enhancement, Identity and Privacy</b> Moderator: Wrye Sententia Ph.D. Dale Carrico Ph.D. “Alone With My Thoughts: Private and Public Faces of Cognitive Self-Determination” Anders Sandberg Ph.D. “Memory Modification and Authenticity”	<b>Psychoactive Substances</b> Moderator: Richard Glen Boire J.D. James J. Hughes Ph.D. “Virtue Engineering: Applications of Neurotechnology to Improve Moral Behavior” Katrina A. Bramstedt Ph.D. “Caffeine Use by Children: The Quest for Enhancement” Thomas B. Roberts, Ph.D. “A New Scientific Endeavor: Psychedelic Enhancements and Mindbody Psychotechnologies”
4:00pm	<b>Nick Bostrom Ph.D. “Posthuman Dignity and the Rights of Artificial Minds”</b>  <b>Moderator and Closing Comments on “The Future of Cognitive Liberty”</b> <b>Richard Glen Boire J.D.</b>	

# Conference Speakers and Abstracts



**Fritz Allhoff**

Department of Philosophy,  
Western Michigan University

**Fritz Allhoff Ph.D.** is an assistant professor of philosophy at Western Michigan University; his specialties include bioethics, ethical theory, and philosophy of biology. Before coming to WMU, Fritz was a senior research fellow at the American Medical Association's Institute for Ethics. He has published in various areas of bioethics, including genetic enhancement, cloning, stem cell research, research ethics, and bioterrorism defense. Fritz is also very interested in the ethics of emerging technologies, especially nanoethics, and currently has an NSF grant under review to investigate nanotechnologies and human enhancement (with John Weckert, Jim Moor, and Pat Lin).

## **Germ Line Genetic-Enhancement and Rawlsian Primary Goods**

Genetic interventions raise a host of moral issues and, of its various species, germ-line genetic enhancement is the most morally contentious. This paper surveys various arguments against germ-line enhancements and attempts to demonstrate their inadequacies. A positive argument is then advanced in favor of certain germ-line enhancements, which holds that they are morally permissible if and only if they augment Rawlsian primary goods, either directly or by facilitating their acquisition.



**Walter Truett Anderson**

President, World Academy of  
Art and Science

**Walt Anderson Ph.D.** is a political scientist, futurist, and author of numerous books including *To Govern Evolution: Further Adventures of the Political Animal*; *Evolution Isn't What It Used To Be: The Augmented Animal and the Whole Wired World*; and *All Connected Now: Life in the First Global Civilization*. He lives and works in the San Francisco Bay Area, and currently serves as president of the World Academy of Art and Science.

## **The Big Picture: Enhancement on a Global Scale**

Some scientists propose a new name for the present epoch—the Anthropocene – in recognition of the role that humanity now plays not only in its own evolution, but in the geological and biological evolution of the entire planet. After 12,000 years, the Holocene epoch is coming to a close; a new chapter is opening, in which the workings of the world are inseparable from the workings of the human mind. This requires an expansion of the context of the human enhancement debate, to consider the virtual certainty of indirect impacts on species and ecosystems, and the high likelihood of their being directly modified in many ways.



**Lisa Anderson-Shaw**

Asst. Clinical Professor,  
University of Illinois Medical  
Center

**Lisa Anderson-Shaw, DrPH, MA, MSN** is the Director of the Clinical Ethics Consult Service, and Assistant Clinical Professor, at the University of Illinois Medical Center at Chicago.

## **Barriers to Procreative Liberty: Legal, Ethical, and Racial Issues**

This paper will discuss some of the barriers that may contribute to the current racial and ethnic disparities in the use of assisted reproductive technologies (ARTs) including adjunct therapies such as preimplantation genetic diagnosis (PGD). This, in turn, poses numerous barriers to procreative liberty. The paper will begin with a discussion of reproductive rights and whether ART is or should be considered a procreative liberty. Next, it will discuss some of the historical antecedents of racial inequality in reproductive health care, followed by an overview of infertility and ART along with adjunct therapies to ART including PGD in the US. Should all forms of human reproduction be seen as something to which every individual is entitled? How can bioethics support ART and other technological advances such as PGD in such a way that the technology is fairly and equitably used and distributed? Or should bioethics and law come together to identify acceptable barriers to procreative liberty within a specified context? With these questions as a guide, the paper will conclude with a discussion of the legal and ethical limits that may be considered to effectuate policy in this area without perpetuating racial and ethnic disparities and inequalities.



**Ron Bailey**

Science Correspondent,  
Reason magazine

**Ron Bailey** is the science correspondent for Reason, the monthly national magazine on politics and culture. His new book, *Liberation Biology: The Scientific And Moral Case For The Biotech Revolution*, is a positive, optimistic, and convincing argument that the biotechnology revolution will improve our lives and the future of our children. Ron has been reporting on biotechnology over the past 15 years for the Wall Street Journal, Los Angeles Times, The Public Interest, Commentary, the Philadelphia Inquirer and other publications. He has also been a staff writer for Forbes magazine covering economic, scientific and business topics, and his articles and reviews have appeared in The Wall Street Journal, The Washington Post, Commentary, The New York Times Book Review, The Public Interest, Smithsonian, National Review, Forbes, The Washington Times, Newsday, and Readers Digest.

**Liberation Biology: The Case for Human Enhancement Technologies**

The benefits of biotechnology are well known—the cure of diseases and disabilities for millions of sufferers; the production of more nutritious food with less damage to the natural environment; the enhancement of human physical and intellectual capacities—and all can be easily foreseen. It is the alleged dangers of biotechnology that are, in fact, vague, ill defined, and nebulous.



**Richard Boire**

Senior Fellow in Law and  
Policy, Center for Cognitive  
Liberty and Ethics

**Richard Glen Boire J.D.** serves as the Center for Cognitive Liberty & Ethics' Senior Fellow in Law and Policy, and also serves as a director. The Center for Cognitive Liberty & Ethics is a nonprofit law, policy, & public education center working to advance and protect freedom of thought.



**Nick Bostrom**

Future of Humanity Institute,  
Oxford University

**Nick Bostrom Ph.D.** is a philosopher at Oxford University, and the Director of the Oxford Future of Humanity Institute. He co-founded the World Transhumanist Association in 1998 and is a frequent spokesperson and commentator in the media. He has been a consultant for the Central Intelligence Agency (Washington, DC), and for the European Commission and the European Group on Ethics (Brussels). Dr. Bostrom's research interests include the philosophy of science, probability theory, and the ethical and strategic implications of anticipated technologies. He has a background in cosmology, computational neuroscience, mathematical logic, philosophy, and artificial intelligence, and is the author of the book *Anthropic Bias: Observation Selection Effects in Science and Philosophy* (Routledge, New York, 2002).

**Posthuman Dignity and the Rights of Artificial Minds**

I will argue that we need to expand our concept of dignity to encompass posthuman dignity as well as human dignity. If human dignity is the grounding for human rights, this move directly leads us to consider the question of posthuman rights. I will address the issue of such rights in the context of the creation of artificial minds (e.g. advanced machine intelligences) and discuss some tentative ethical principles for defining our rights and responsibilities relative to our hypothetical future machine progeny, and their rights and responsibilities relative to their creators.



**Katrina A. Bramstedt**

Associate Staff, Bioethics  
Dept., Cleveland Clinic  
Lerner College of Medicine

**Katrina A. Bramstedt Ph.D.** is a bioethicist with interests in the following areas: clinical consultation, transplant, implantable medical devices, and research ethics. She received her PhD from Monash University in Melbourne, Australia and completed fellowship training at UCLA School of Medicine.

#### **Caffeine Use by Children: The Quest for Enhancement**

Fair play, both in academics and sports, is a concept that is challenged by the notion of performance enhancement. Both cognitive and physical performance can be viewed as potentially enhanceable, and arguments can be made that enhancement can serve two purposes: gaining an edge or keeping up with others (who may or may not have used performance enhancing substances.) Caffeine, a central nervous system and cardiac stimulant, is frequently used by children for both academic and athletic performance enhancement. In fact, the marketplace contains a plethora of caffeinated products marketed directly to children. This paper examines ethical issues associated with the use of caffeine by children, and explores the question, Can cognitive performance enhancement be ethically permissible if sports performance enhancement is not?



**Jess Cadwallader**

Critical and Cultural Studies  
at Macquarie University in  
Australia

**Jess Cadwallader** is a second year doctoral candidate in Critical and Cultural Studies at Macquarie University in Australia, supervised by Dr Nikki Sullivan. Her thesis uses a Levinasian ethics, as well as the works of Foucault, Derrida, Diprose and Merleau-Ponty, to examine the construction of the experience of suffering, and its place within discourses of bodily modification. Her work has been positively received at numerous Australian and international conferences, including the Body Modification: Mark II Conference, the Identity Matters Conference and the Third Annual Association for Medical Humanities Conference (Treliske, UK).

#### **Suffering, Bodily Tolerances and ‘Enhancement’ Discourse**

I explore some of the discourses – such as the imperative to be ‘better than well’ identified by Carl Elliott – that contribute to current Western modes of subjectivity and bodily tolerances, attending particularly to the place of difference. I argue that when corporeal difference (recast as deviance, disease or pathology in relation to a culturally specific norm) is taken to be the cause of suffering, it is the removal of that difference which is alleged to relieve suffering. As a result, these investigations demonstrate some of the reasons that the majority of the technologies available for bodily alteration are currently used primarily for ‘normalisation’ or its counterpart, ‘enhancement.’



**Eva Caldera**

Associate Director, Institute  
for Ethics, University of New  
Mexico School of Law

**Eva Caldera** is Associate Director of the Institute for Ethics at the University of New Mexico and research professor of law at the University of New Mexico School of Law. She is a graduate of Harvard College, where she majored in philosophy, and Harvard Law School.

#### **Cognitive Enhancement and Theories of Justice**

As techniques for cognitive enhancement are being developed (including pharmacology, surgical modifications, transcranial stimulation, brain implants and other technologies), new questions are emerging about the availability, distribution and permissible uses of such techniques. This paper will provide an overview of possible approaches to these questions from within three different frameworks offered by political theory—libertarian (e.g. Robert Nozick), social contractarian (e.g. John Rawls) and communitarian (e.g. Michael Sandel). Each of these theories rests on particular assumptions about the relationship between individuals and society and on particular conceptions of human flourishing. This paper will examine whether the potential for cognitive enhancement requires re-examination of these fundamental premises about human nature and personal identity in connection with these theories of justice.



**Nigel Cameron**

Director, Center on  
Nanotechnology and Society  
at the Illinois Institute of  
Technology

**Nigel M. de S. Cameron, Ph.D.**, is Director of the Center on Nanotechnology and Society at the Illinois Institute of Technology (IIT), and Research Professor of Bioethics and Associate Dean at IIT's Chicago-Kent College of Law. He also chairs the Centre for Bioethics and Public Policy in London, UK. Widely recognized as a commentator on bioethics and biotech policy issues, Cameron has appeared on ABC Nightline, CNN, PBS Frontline, and the BBC. His books include *The New Medicine: Life and Death After Hippocrates* and *Human Dignity in the Biotech Century*. He has given congressional testimony on ethical and policy implications of human cloning stem cell research, and has also represented the United States as bioethics advisor on the U.S. delegation to the United Nations General Assembly meeting to consider a convention on human cloning, and the UNESCO Inter-governmental Committee of Experts that finalized the UNESCO Declaration on Bioethics and Human Rights. Cameron co-chaired the 2005 International Congress on Nanotechnology, and serves on the advisory boards for the Converging Technologies Bar Association and the Journal of Nanotechnology, Law and Business.

#### **Some caveats for enhancers**

Recent progress in a range of technologies, and the prospect of their exponential development, has given fresh credibility to the idea that we shall be able to bring about fundamental changes in human capacities. This proposal, *prima facie*, fascinates and encourages some as it creates distaste and alarm in others. The question we face, at one level, is whether wisdom lies in repugnance or enthusiasm. But the issues go well beyond the presence or absence of aesthetic appeal, and raise perhaps the most profound of all human questions - that of the given-ness of the human condition, and whether it is proper or wise to seek its end not in transcendence (which from primitive times has been the lot of human artistic creativity and the life of the mind) but its supersession in a re-engineered model of human being that breaks fundamentally with the analogy of given-ness and moves to a model of self-creation. What caveats suggest themselves?



**Dale Carrico**

Human Rights Fellow,  
Institute for Ethics and  
Emerging Technologies

**Dale Carrico Ph.D.** is a lecturer in the Department of Rhetoric at the University of California at Berkeley, from which he received his PhD. in 2005, and is also a member of the visiting faculty at the San Francisco Art Institute. He is the Human Rights Fellow at the Institute for Ethics and Emerging Technologies. He is currently adapting his dissertation into a book, *Pancryptics: Technological Transformations of the Subject of Privacy*. He discusses technoethics and the cultural politics of disruptive technological change in his personal blog, *Amor Mundi*, and elsewhere. He organized the 13th Annual Boundaries in Question Conference in March 2004, on the topic "New Feminist Perspectives on Biotechnology and Bioethics."

#### **Alone With My Thoughts: Private and Public Faces of Cognitive Self-Determination**

I will highlight those aspects in the history and concept of privacy that best facilitate legible performances of informed consent to procedures of medical modification. I will emphasize the ways in which privacy has articulated the notion of secure intimate associations (as between doctors and their patients, for example) and downplay the ways in which privacy has sometimes facilitated the disruption or dismantlement of public spaces. Informed consent is not a "natural capacity" that we must recognize and defend but a kind of public "scene" that is constructed and maintained in our ongoing negotiation of the legal, normative, fiscal, institutional/architectural "lines" between the public and the private. To the extent that "consenting" is conceived itself as a kind of cognitive act the demand to secure the scene of its legible performance in matters of cognitive modification will bring into special relief, and possibly bring into crisis, the dilemmas that attach more generally to the defense of morphological freedom, defined as the defense of consensual practices of genetic, prosthetic, and cognitive self-creation and self-determination.



**Michael Chorost**

Author of *Rebuilt: How Becoming Part Computer Made Me More Human*

**Michael Chorost Ph.D.** is the author of [\*Rebuilt: How Becoming Part Computer Made Me More Human\*](#). He has a B.A. from Brown University and a Ph.D. from the University of Texas at Austin. He lives in San Francisco, where he writes, teaches, and consults.

### **The Myths of Human Enhancement**

In this talk I'll start by destroying various myths of human enhancement. Since I've had my hearing restored with a computer implanted in my head, I'm often asked whether people will have superhuman hearing and vision in the future. My answer is usually, "You think you want that, but you really don't." I'll explain that by drawing on some basic facts about physics and cognition. Then I'll talk about what I think will happen in the future, and it's going to seem as strange as the Internet would have back in the age of 64-kilobyte Apple IIs. But for just that reason, I think it's much more interesting.



**Laura Colleton**

Harvard Divinity School

**Laura Colleton J.D.** studied international human rights and graduated from the University of Notre Dame in 1999 and Harvard Law School in 2003. She also worked for a human rights organization in Pristina, Kosovo. She has written on the abuse of UN power in the provisional Kosovo government as well as restoring humanity after violent ethnic conflict. She studies bioethics at the Kennedy School of Government and Harvard Divinity School, and expects to receive a Masters Degree in Theological Studies in 2006.

### **Health Care Access in the U.S. and the Elusive Line Between Enhancement and Therapy**

Biotechnology has made possible both treatments for diseases or disorders and enhancements of human traits, but the line between the two categories is unclear and uncertain. This paper will explore where that line has been placed, what this means for health care access, and thus where the line should be.



**Erik Davis**

Independent writer and culture critic

**Erik Davis** is a San Francisco-based writer, culture critic, and independent scholar. His book *TechGnosis: Myth, Magic, and Mysticism in the Age of Information* was released by Harmony Books in the fall of 1998. It has been translated into five languages, and has achieved, in certain circles, the vaguely enviable status of a "cult classic." Davis is a contributing writer for Wired magazines, and wrote "The Posthuman Condition" column for the sadly departed online magazine Feed. His essays have appeared in over half a dozen books, including *Zig Zag Zen: Buddhism and Psychedelics*, *The Disinformation Book of Lies*, *Prefiguring Cyberculture* and *Paul "DJ Spooky" Miller's Sound Unbound*. He has contributed articles and essays to a wide variety of publications, including *Bookforum*, *The Wire*, *ArtByte*, the *LA Weekly*, *Gnosis*, and the *Village Voice*.



**Aubrey de Grey**

Dept. of Genetics, Cambridge University

**Aubrey de Grey Ph.D.** is a biogerontologist at the University of Cambridge, UK. He designs interventions to reverse the cellular and molecular changes that accumulate with age and reduce remaining life expectancy. He has coined the term “strategies for engineered negligible senescence” (SENS) to describe these interventions, which he argues are the only feasible way to extend human lifespan by more than a decade. He is also co-founder and chief scientist of the Methuselah Mouse Prize, a contest designed to accelerate research into effective life extension interventions by awarding prizes to researchers who extend the lifespan of mice to unprecedented lengths.

### **Our Right to Life**

Humanity has long demonstrated a paradoxical ambivalence concerning the extension of healthy human lifespan. Modest health extension has been universally sought, whereas extreme (even indefinite) health extension has been regarded as a snare and delusion—a dream beyond all others at first blush, but actually something we are better off without. In my talk I will consider whether our present caution concerning the wisdom of truly curing aging is likely to survive the increased scrutiny that it will receive in coming years as a result of biomedical advances. I will argue that it will not, because of its irreconcilability with values that are more deeply held by the large majority of humanity than any values that argue against the quest for a cure. Foremost among these is the view that humans have a right to live as long as they wish to. Once we realise this, our determination to consign human aging to history will be second only to our shame that we took so long to break out of our collective trance.



**Richard Doyle**

Professor of Rhetoric and Science Studies, Penn State University

**Richard Doyle Ph.D.** is a Professor of Rhetoric and Science Studies at Penn State University. His works include *On Beyond Living*, *LSDNA A Work in Progress* and *Wetwares: Experiments in Post Vital Living*.

### **Biotelemetrics: Towards a Peer to Peer Privacy Planet?**

“Biotelemetrics” names a diverse set of practices, technologies and disciplines oriented toward the non-invasive determination of human identity at a distance. Facial recognition, iris scans, gait signatures, and residual DNA analysis all compete with dozens of other technologies to render the holy grail of contemporary security science: the cheap, reliable and anonymous apprehension of human identity. This talk will review emerging IEC/ITU/ISO standards for biotelemetrics and the technologies likely to emerge from them, with a focus on the socio-political effects of ubiquitous biotelemetrics. The talk will offer a model for a “Peer to Peer Privacy Planet” in which the commons, and not the State, becomes the most effective guardian of individual privacy and global security. More here: <http://biotelemetrica.pbwiki.com/FrontPage>



**George Dvorsky**

Associate Editor, Betterhumans

**George Dvorsky** is the Deputy-Editor of Betterhumans, co-founder and president of the Toronto Transhumanist Association, and the producer of Sentient Developments blog and podcast. Mr. Dvorsky served as conference chair for TransVision 2004, the WTA’s annual conference.

### **All Together Now: Considerations for biologically uplifting non-human animals**

As the potential for enhancement technologies migrates from the theoretical to the practical, a difficult and important decision will be imposed upon human civilization, namely the issue as to whether or not we are morally obligated to biologically enhance non-human animals and bring them along with us into advanced postbiological existence. There will be no middle road that we can take; humanity will either have to leave animals in their current state of nature or bring as many sentient creatures along into a posthuman future. A strong case can be made that life and civilizations on Earth have already been following this general tendency and that animal uplift will be a logical and reasonable developmental stage along this continuum of progress. But tendency does not imply right; more properly, given the potential expanse of legal personhood status to other sentient species, it will follow that what is good and desirable for Homo sapiens will also be good and desirable for other sapient species. If it can be shown that enhancement and postbiological existence is good and desirable for humans, and conversely that ongoing existence in a Darwinian state of nature is inherently undesirable, then we can assume that we have both the moral imperative and consent to uplift non-human animals.



**Nanette Elster**

Vice President, Spence & Elster, P.C.

**Nanette Elster J.D., M.P.H.** is Vice President of Spence and Elster in Chicago, and adjunct faculty teaching bioethics at DePaul University and the University of Illinois at Chicago. Ms. Elster has extensive experience in legal and ethical issues related to women's and children's health and assisted reproductive technologies. She serves on the Advisory Board of the Chicago Center for Jewish Genetic Disorders and is a member of the ABA coordinating group on bioethics and the law. She has been a co-chair of the Working Group on Reproductive Technology at the Institute for Science, Law and Technology and was a board member of the Integritas Institute for Health Care Ethics. She holds a Bachelor of Arts degree from the University of Illinois at Urbana-Champaign (1986), a law degree from Loyola University School of Law (1989), and a Master of Public Health degree from Boston University School of Public Health (1993). She is the author of numerous articles on genetic and reproductive health with a particular focus on the impact on women and children.

#### **Barriers to Procreative Liberty: Legal, Ethical, and Racial Issues**

This paper will discuss some of the barriers that may contribute to the current racial and ethnic disparities in the use of assisted reproductive technologies (ARTs) including adjunct therapies such as preimplantation genetic diagnosis (PGD). This, in turn, poses numerous barriers to procreative liberty. The paper will begin with a discussion of reproductive rights and whether ART is or should be considered a procreative liberty. Next, it will discuss some of the historical antecedents of racial inequality in reproductive health care, followed by an overview of infertility and ART along with adjunct therapies to ART including PGD in the US. Should all forms of human reproduction be seen as something to which every individual is entitled? How can bioethics support ART and other technological advances such as PGD in such a way that the technology is fairly and equitably used and distributed? Or should bioethics and law come together to identify acceptable barriers to procreative liberty within a specified context? With these questions as a guide, the paper will conclude with a discussion of the legal and ethical limits that may be considered to effectuate policy in this area without perpetuating racial and ethnic disparities and inequalities.



**Colin Farrelly**

Dept. of Political Science,  
University of Waterloo

**Colin Farrelly Ph.D.** is Assistant Professor in the Dept. of Political Science (cross-appointed with Philosophy) at the University of Waterloo. Colin is a political philosopher and his current research interests include the ethical, legal and social implications of the genetic revolution. His publications in this area include articles in *The American Journal of Bioethics*, *Journal of Medical Ethics*, *Bioethics* and *Kennedy Institute of Ethics Journal*. Colin is currently writing a book on genetic justice.

#### **Preimplantation Genetic Diagnosis and Deliberative Democracy**

In this paper I consider the issue of regulating (non-medical uses of) preimplantation genetic diagnosis (PGD) from the second-order social theory advanced by Amy Gutmann and Dennis Thompson (1996, 2004). Deliberative democracy does not champion the priority of one particular substantive (e.g. liberty, equality, etc.) or procedural value (e.g. democracy); rather it acknowledges a plurality of such values. Furthermore, it seeks to find a reasonable balance among these values in a way that takes seriously what Gutmann and Thompson call "provisionality". I outline a trade-off Model that captures these requirements in the context of reproductive freedom and regulating access to non-medical uses of PGD.



**Gregory Fowler**

Executive Director,  
GeneForum

**Gregory Fowler Ph.D.** is a co-founder and the Executive Director of GeneForum. He is also Senior Research Associate and Program Director, Technology & Citizenship Program, Center for Public Health Studies in the School of Community Health at Portland State University, and an Associate Clinical Professor in the Department of Public Health and Preventive Medicine, Oregon Health and Science University. An “Ethics and Values in Science and Technology (EVIST)” grant from the National Science Foundation and the National Endowment for the Humanities in 1985 to study the ethics of human genetic engineering, became the focus of 20 years of professional research and writing in science education, science and technology studies, and participatory democracy. He is a standing member of the Oregon State Legislature’s Advisory Committee on Genetic Privacy and Research mandated to create opportunities for public education and input on issues of genetic privacy and research. He is Oregon’s only Fellow of the World Academy of Art and Science, an international forum which elects scientists, artists and scholars with interdisciplinary accomplishments, a record of public service, and a global perspective to the Academy to discuss the vital problems of humankind and to “keep under continuous review the social consequences and policy implications of knowledge.” He holds a doctorate in genetics from Brown University.

#### **Democratizing Genetic Technology**

In a landmark popular referendum in June 1998, Switzerland voted by a 2:1 majority not to ban genetic engineering. The Swiss experience, especially, shows that given time, money and the open sharing of ideas, complex societal issues raised by new technologies can be brought to the public’s attention allowing informed democratic decisions to be reached. Ordinary citizens do not need to be scientists to understand the important implications of the new technological advances. The simultaneous challenge is to generate multiple and new approaches for the governance of technology that can draw ideas from past mistakes, cope with social complexity in the present, and harness technological change for the common good in the future. In this context—and drawing on the work of Benjamin Barber (1990) and the Oregon Health Decisions (Ref. M. Garland, 1999), the GeneForum model, which seeks to intensify the democratization of genetic technology, will be presented.



**Fred Gifford**

Dept. of Philosophy,  
Michigan State University

**Fred Gifford Ph.D.** is Professor of Philosophy and Faculty Associate in the Center for Ethics, Humanities and the Life Sciences at Michigan State University. He regularly teaches courses in philosophy of science and technology, bioethics and research ethics. He has published several articles on research ethics, especially the ethics of randomized clinical trials. He has been a member of MSU’s IRB for many years, and he has been a member of several data and safety monitoring boards at NIH.

#### **Ethical Issues in Enhancement Research**

Assuming we will have and endorse various enhancements (in part on grounds that individuals should be able to make such choices), it will be important to have reliable evidence of their safety and efficacy. A well-known set of principles and controversies exist concerning the ethics of human experimentation concerning the safety and efficacy of therapies: placebos, fair subject selection, worries about exploitation, barriers to consent such as the “therapeutic misconception”, etc. The purpose of this paper is to examine the extent to which these insights apply as well to the context of testing the safety and efficacy of enhancement regimens.



**Kristi Giselsson**

University of Southern  
Queensland

**Kristi Giselsson** is a doctoral student in English working within the Public Memory Research Centre at the University of Southern Queensland, Australia. She is researching the intersection between rhetoric, philosophy and ethics, the human and the posthuman.

**How can the language of human rights guide us in framing ethical issues surrounding human enhancement?**

As the main critique directed against humanism by posthumanists has been the apparent exclusion of diversity via the concept of a common humanity, one way to investigate how the language of human rights can guide us in framing some of the critical ethical issues surrounding human enhancement is to ascertain what ethical and epistemological grounds are needed in order to justify respect for difference. In this paper I will be suggesting that posthumanist ethics are actually substantiated by a rhetorical appeal to the concept of human rights and that ultimately, respect for diversity is impossible without retaining the notion of human being.



**Ravi Glasser-Vora**

Department of Critical &  
Cultural Studies at Macquarie  
University, Australia

**Ravi Glasser-Vora** is a PhD candidate in the Department of Critical & Cultural Studies at Macquarie University in Sydney, Australia. His research is concerned with the impact of an ethics of informed consent on health technologies and medical practice. He has previously presented papers on circumcision & the anti-communitarianism of a neonatal right to bodily integrity and Foucault's archaeology of medical perception & the birth of informed consent.

**Informed Consent: the break between eugenics and techniques of human enhancement**

This paper investigates the continuities and breaks between eugenics and contemporary techniques of human enhancement. In both public discourse and academic work such debates often centre on whether it is legitimate to write off eugenics as a pseudoscience, while contemporary genetic technologies and study can be preserved as legitimate based on their ability to empirically see and test human inheritance. By examining the historical role of individual rights in determining the interventions of the human biological sciences, this paper, instead, moves the debate to the social organisation of human enhancement technologies. It argues that precisely where individual informed consent becomes insufficient to authorise the effects of contemporary enhancement and treatment technologies, new kinds of sociality are developing around the proliferating categories of biomedical classification that both reiterate and challenge the old models of eugenic hygiene.



**Chris Hables Gray**

Computer Science, University  
of Great Falls in Great Falls,  
Montana

**Chris Gray Ph.D.** is Professor of the Cultural Studies of Science and Technology for Goddard College. He is the author or editor of five books, *Postmodern War*, *Technohistory*, *The Cyborg Handbook*, *Cyborg Citizen* (which includes a "Cyborg Bill of Rights"), and *Peace, War and Computers*.

**Cyborg Political Technologies: Citizenship, Democracy, Constitutions, and Bills of Rights**

To what extent do new cyborgian technosciences mandate the (re)creation of political technologies and forms? And how are we to choose which are the right ones?



**Hank Greely**

Director, Center for Law and the Biosciences, Stanford Law School

**Henry T. (Hank) Greely J.D.** is the Deane F. and Kate Edelman Johnson Professor of Law and Professor, by courtesy, of Genetics at Stanford University. He specializes in legal and social issues arising from advances in the biosciences and in health law and policy. He has written on issues concerning genetic testing and discrimination, the ethics of human genetics research, human stem cell research, and ethical and legal issues in neuroscience, among other things. He chairs the steering committee of the Stanford University Center for Biomedical Ethics and directs the Stanford Center for Law and the Biosciences and the Stanford Program on Stem Cells and Society.

**Rights to Enhancement: The Current American Legal Landscape**

This talk surveys contemporary American law in search of arguable rights to human biological enhancing technology, as well as the general regulatory situation. It concludes that only limited circumstances currently exist where such rights could plausibly be asserted.



**Martin Gunderson**

Department of Philosophy, Macalester College

**Martin Gunderson Ph.D.** is a professor of philosophy at Macalester College where he teaches courses on ethics and bioethics. He received his PhD from Cornell University and his JD from the University of Minnesota. He has published articles on the right to die, informed consent, freedom of speech and privacy. He is currently working on the ethics of genetic engineering.

**Genetic Engineering and the Consent of Future Generations**

The debate over whether germ-line genetic engineering is justified on the basis of the consent or presumed consent of future generations is mired in philosophical confusion and best avoided by relying instead on the value that justifies the consent requirement. While most bioethicists ground the requirement on individual autonomy, I argue that it is best grounded on respect for moral agency—the ability to reflect on moral considerations and conform one’s behavior to those considerations. Genetic engineering, including engineering for the purpose of enhancement, is justified insofar as it respects the value we place on moral autonomy.



**Patrick Hopkins**

Assoc. Prof. of Philosophy, Millsaps College

**Patrick D. Hopkins Ph.D.** teaches philosophy and science and technology studies at Millsaps College in Mississippi. He is the author of numerous articles on bioethics, technology studies, and gender studies. He is editor of *Sex/Machine: Readings in Culture, Gender, and Technology* (Indiana University Press, 1999).

**Why Human Rights are a Problem for Enhancement**

The concept of human rights poses a problem for enhancement. The basic concept of a “human right” or “natural right” developed historically as a secular implication of natural law theory and is conceptually founded on the idea that rights flow from basic human nature and human needs. Given that human rights thinking is about fulfilling specifically human capacities, it will be extremely difficult for such a framework to accommodate any “right” to move beyond those capacities. I’ll explain this problem and offer three possible ways to deal with it.



**James Hughes**

Exec. Dir., Institute for Ethics  
and Emerging Technologies

**James Hughes Ph.D.** teaches Health Policy at Trinity College in Hartford Connecticut, and serves as Trinity's Associate Director of Institutional Research and Planning. Dr. Hughes also serves as the Executive Director of the Institute for Ethics and Emerging Technologies and its affiliated World Transhumanist Association. Dr. Hughes produces the weekly syndicated public affairs talk show *Changesurfer Radio* and is the author of *Citizen Cyborg: Why Democratic Societies Must Respond to the Redesigned Human of the Future*. Dr. Hughes lives in rural eastern Connecticut with his wife, the artist Monica Bock, and their two children.

**Virtue Engineering: Applications of Neurotechnology to Improve Moral Behavior**

In the near future we will have many technologies that will allow us to modify and assist our emotions and reasoning. One of the purposes we will put these technologies to is to assist our adherence to self-chosen moral codes and citizenship obligations. For instance we will be able to suppress unwelcome desires, enhance compassion and empathy, and expand our understanding our social world and the consequences of actions. So, contrary to the bioconservative accusation that neurological self-determination and human enhancement will encourage more selfishness in society, it will probably permit people to be even more moral and responsible than they currently are.



**William Hurlbut**

Stanford University

**William Hurlbut, M.D.** is a consulting professor in the Program in Human Biology at Stanford University. In January 2002, Dr. Hurlbut was appointed to the President's Council on Bioethics. His main areas of interest involve the ethical issues associated with advancing technology and neuroscience and the integration of the philosophy of biology with Christian theology. Dr. Hurlbut has co-taught integrative courses at Stanford with Luca Cavelli-Sforza, director of the Human Genome Diversity Project, and Nobel Prize winner Baruch Blumberg. Dr. Hurlbut also works with the Center for Security and International Cooperation on a project formulating policy on Chemical and Biological Warfare and with NASA on projects in Astrobiology.

**Winning by Losing: Biotechnology and Human Enhancement**

Technological intervention for purposes beyond healing challenges our traditional concepts of nature and human nature. Yet, even without assumptions of a benevolent creator and an implicit image of natural health, a purely scientific analysis may raise troubling concerns about proposals for the biological improvement of human life. In this presentation I will discuss the social ideals that guide our current understanding of human agency in projects for our own perfection. We will explore the relationship between means and ends, specialization and overall balance, and the personal meaning of imperfection, struggle and suffering. Within this frame human enhancement will be recognized as posing a grave danger when empowered by selfish ambitions and appetites, or a noble sacrifice when in the service of serious human purposes. This recognition of what is at stake on a biological, social and personal level may guide us in the wise use of our emerging powers.



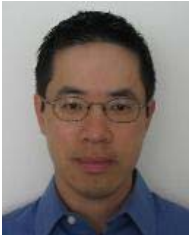
**Dawn Jakobowski**

Asst. Prof. of Philosophy and  
Director of Gender Studies

Dawn Jakobowski Ph.D.'s research and teaching interests include Theoretical & Applied Ethics, Race & Gender Studies, Feminist Theory, and Social & Political Philosophy. Her work has appeared in the Encyclopedia of Feminist Theories, the Society for Philosophy in the Contemporary World and the Journal of the Southwestern Philosophical Society, and she has made presentations to such groups as the Society for Phenomenology and Existential Philosophy, the Central States Philosophical Association, and the 10th Conference of Cuban and North American Philosophers and Social Scientists (in Havana, Cuba).

### **Cognitive Enhancement and Liberatory Possibilities**

A growing number of social critics and feminist scholars have raised substantial concerns about the frequent and widespread use of anti-depressants in our culture. Opponents have laid out two main criticisms: 1) Increased use of antidepressant therapy leads to social conformity and reinforces capitalist ideals such as the pleasure-driven consumer. 2) Antidepressant discourse reinforces gender oppression by advancing new forms of body ideals and inequalities, i.e., the cultural valorization of productivity and competition. Do antidepressants merely create false or artificial selves that are dominated by patriarchal, capitalist values? In this paper, I claim that critics have too quickly dismissed anti-depressants and in doing so have failed to examine the ways in which brain chemistry modifications may positively affect an individual's ability to resist patently unjust social arrangements.



**Patrick Lin**

The Nanoethics Group

**Patrick Lin Ph.D.** is the research director for The Nanoethics Group, and adjunct assistant professor at Western Michigan University. He has worked with start-ups to established companies such as Covisint (venture founded by Ford, GM, DaimlerChrysler, et al.), Volkswagen, Nextel, Sprint PCS, Microsoft, IBM, Hewlett-Packard, Compaq, Omnisky, Siemens, Business Objects, Veritas, JetBlue, eBay, E\*TRADE, Blue Cross Blue Shield, Medtronic, Telus, and other market makers. Dr. Lin received his B.A. in philosophy (political & legal theories) from the University of California at Berkeley in 1990, with significant coursework in the physical sciences. He earned his M.A. and Ph.D. in philosophy (ethics and political & economic theories) from the University of California at Santa Barbara in 1997.

### **Finding Reasons: A Critical Look at Recent Pro-Enhancement Arguments**

The ethics of human enhancement is more than a debate over possible benefits versus harms. It is also a deeply philosophical one in which both pro- and anti-enhancement camps have cited reasons to defend their positions. However, critical evaluation of these reasons has been largely focused on the anti-enhancement side, e.g., deconstructing the concept of human dignity or questioning metaphysical assumptions. Without endorsing either position, this presentation turns the spotlight on pro-enhancement reasons, as articulated in "More Than Human" (2005) by Ramez Naam who is also a speaker at this conference. While these reasons may sound initially plausible and perhaps even intuitive, we will show that they are problematic and, by themselves, cannot convincingly justify the pro-enhancement position.



**Kerry Lynn Macintosh**

Professor of Law, Santa Clara University School of Law

**Kerry Lynn Macintosh J.D.** is a member of the law and technology faculty at Santa Clara University School of Law. She received her B.A. from Pomona College and her J.D. from Stanford Law School, where she was elected to the Order of the Coif. She has published papers and articles in the field of law and technology in journals such as *Harvard Journal of Law & Technology*, *Boston University Journal of Science*, and *Berkeley Technology Law Journal*. She is the author of *Illegal Beings: Human Clones and the Law*.

#### **Illegal Beings: Human Clones and the Law**

Public attitudes toward human reproductive cloning are negative. The very idea that cloning might be used to mass-produce human copies provokes hysteria. But this hysteria is based on a scientific fallacy. Genes are not destiny; it is impossible to copy a human being. A human clone will be an individual, just as identical twins are individuals. Nevertheless, through the alchemy of the political process, public hysteria has been transmuted into law. Several states have outlawed reproductive cloning, and Congress is trying to enact a federal ban. These laws seek to prevent the existence of a disfavored class (human clones) based on the genetic characteristics of its members. Thus, laws against cloning are laws against morphological diversity. Laws cannot stop human clones from coming into existence. When cloning becomes safe and effective, it will find a ready market. Infertile men and women, carriers of heritable diseases, and gays and lesbians are among those who will find cloning a reasonable alternative to sexual reproduction. Laws against cloning are bad public policy. They will send parents to prison for the crime of having the wrong kind of child, stigmatize human clones as unworthy of existence, and undermine our society's commitment to egalitarianism.



**Jeff Medina**

FutureTAG and IIEET

**Jeff Medina** is a philosopher and technology consultant based in the Washington D.C. metro area. He is a staffperson for the Future Technologies Advisory Group and a consultant to AT&T. In his capacity as a teacher, trainer, and public speaker, Jeff has taught and spoken on topics as diverse as ethics, physics, human rights, computer science, mechanical engineering, and poetry at institutions like the University of Washington, the University of Toronto, and the University of Delaware. As a technologist, Jeff focuses on object-oriented architecture and design. Jeff has studied at Harvard University, the University of Delaware, UC Berkeley, SUNY Stony Brook, and the University of London.

#### **Personhood, complexity, and enhancement**

Personhood ethics in its most widespread form typically holds as a key criterion of personhood that a being's thoughts be sufficiently complex. Previously, this had been found acceptable, with human thought considered an exemplar of complex thought against which to compare other, nonhuman candidates for personhood. But complexity is an entirely relative term. Although humans meet the complexity criterion and qualify as persons in their own view, to a suitably enhanced being, human thought won't be complex at all, instead seeming as simplistic to them as the aforementioned fish and insects seem to us. This leads us to a dilemma, neither horn of which will nor should be appealing to personhood-ethics advocates or human enhancement advocates; either enhanced beings really won't be compelled to consider humans morally significant even if they maintain a personhood-based moral philosophy, as suggested by a number of critics of human enhancement, or personhood theorists must modify the "sufficiently complex" criterion, defining it to include current human complexity. The former option would give much ground to the counter-enhancement interlocutors, while the latter option would make personhood ethics as arbitrarily "human-racist" as the species-based ethical views personhood theory is held up as having overturned and improved upon. Personhood-based ethics must find a way to resolve this problem, or a new approach to ethics must be found to supersede the personhood view, just as personhood ethics itself overturned its anthropocentric predecessors.



**Brad Mellon**

Frederick Mennonite  
Community

**Brad Mellon Ph.D.** has a Master of Divinity degree from Biblical Theological Seminary, a Master of Sacred Theology degree, and is a Doctor of Philosophy in Hermeneutics from Westminster Seminary. He is Director of Pastoral Care for the Frederick Mennonite Community

#### **Christian Reflections on Radical Life Extension and Human Rights**

Radical life extension is an idea that is being promoted by a number of scientists and philosophers and it may very well be the ultimate in human enhancement, supported by emerging new technologies, such as stem cell research and nanotechnology. Whereas some Christians may be both critical and skeptical of the approach, there is much to commend it. After all, the Bible upholds the sanctity of life, and supports human rights. What I think Christians are afraid of, however, is that technology will be employed without restraint and cause us to lose our ‘human dignity.’ This paper attempts to engage the issue of extending human life in a positive way, while taking a serious look at the promises and potential pitfalls.



**Andy Miah**

U. of Paisley, Scotland, UK

**Andy Miah Ph.D.** is Lecturer in Media, Bioethics and Cyberculture at University of Paisley. He is author of *Genetically Modified Athletes: Biomedical Ethics, Gene Doping & Sport* (2004, London & New York, Routledge).

#### **The Right to Remain Natural: Criminalising Enhancement in Elite Sport**

I suggest that emerging legal instruments on human rights and the human genome do not justify the limiting of access to genetic enhancement, nor the prohibition of genetic tests. However, it would appear that the reaction from the world of sport to this challenge is to re-describe unethical enhancement practices as criminally illegal in order to legitimise its objection to the unnatural human.



**Annalee Newitz**

Contributing editor, Wired  
magazine

**Annalee Newitz Ph.D.** is currently a freelance writer and a contributing editor at Wired magazine, as well as a former policy analyst at the Electronic Frontier Foundation. Her work has appeared in numerous magazines and newspapers, and several academic journals and anthologies, including her two books *White Trash: Race and Class in America* (Routledge, 1997) and *The Bad Subjects Anthology* (NYU Press, 1998). She has a weekly syndicated column, Techsploitation. Her extended-play bio is here: [www.techsploitation.com/about](http://www.techsploitation.com/about)

#### **Feminists for Genetic Engineering**

In this presentation, I will make the case for a pro-genetic engineering feminism. For thousands of years, women have been subjected to a genetic engineering program known as patriarchy – from an evolutionary perspective, patriarchy is a system in which men choose mates for women, and it has affected the culture and genetic makeup of countless generations. Today many of us live in post-patriarchal societies with fairly advanced reproductive technology. Can we use this technology in the service of a feminist genetic engineering project? I argue that we can. Topics I’ll touch on will include artificial wombs, altering the number and genders of parents who contribute genetic material to their offspring, new kinds of surrogacy, and the social roles of women who choose not to pass on their genetic material.



**Ted Peters**

Prof. of Theology, Pacific Lutheran Theo. Seminary

**Ted Peters Ph.D.** is a professor of Systematic Theology at Pacific Lutheran Theological Seminary and the Graduate Theological Union (GTU) in Berkeley, California. He is author of *GOD-The World's Future* (Fortress 2000) and *Science, Theology, and Ethics* (Ashgate 2003). He is editor-in-chief of *Dialog, A Journal of Theology*. He also serves as co-editor of *Theology and Science* published by the Center for Theology and the Natural Sciences in Berkeley.



**Christine Peterson**

Vice President Foresight Nanotech Institute

**Christine Peterson** writes, lectures, and briefs the media on coming powerful technologies, especially nanotechnology. She is Founder and Vice President, Public Policy, of Foresight Nanotech Institute, the leading nanotech public interest group. Foresight educates the public, technical community, and policymakers on nanotechnology and its long-term effects. She serves on the Advisory Board of the International Council on Nanotechnology, the Editorial Advisory Board of NASA's Nanotech Briefs, and on California's Blue Ribbon Task Force on Nanotechnology.

#### **Use of Technology for Body Enhancement: Prospects, Ethics & Limits**

The drive for enhancement has been strong throughout human history. A primary objection to new methods of enhancement has been the prospect of increased inequality, disrupting social cohesion. Efforts to suppress enhancement may lead to unintended consequences, including even greater inequality. We can begin today to draw distinctions between modifications that society should permit, and those that may need to be discouraged.



**Eric Racine Ph.D.**

Post-Doctoral Fellow, Stanford Center for Biomedical Ethics

**Eric Racine, PhD**, is a postdoctoral fellow with the Neuroethics Imaging Group at the Stanford Center for Biomedical Ethics. His current research focuses on the public understanding of neuroscience as well as on ethical issues in the clinical application of neurological sciences.

#### **Two moral tests for enhancement**

I propose two moral tests to approach the ethics of enhancement based on two complementing concepts of morality: moral acceptability and moral praiseworthiness. The moral acceptability test requires that enhancement technology fulfill scientific (e.g., risk assessment), ethical (e.g., consent), social (e.g., health coverage) and regulatory criteria (e.g., approval mechanisms). The moral praiseworthiness test entails considerations on the broader desirability of enhancement. Answers to the moral tests are discussed according to three moral-political philosophies: conservatism (morally unacceptable/morally praiseworthy), liberalism (morally acceptable/morally praiseworthy; and moderate liberalism (potentially morally acceptable/debatable praiseworthiness). I argue for moderate liberalism and discuss its implications for researcher responsibility and public policy.



**Shannon Ramdin**

Law program, University of  
Ottawa

**Shannon Ramdin** is in her final year of the common law program at the University of Ottawa. Her LL.B. is to be conferred this summer. Prior to Law School, she attended the University of Calgary where she received a B.A. (Honours) in English Literature with a focus on cross-cultural relations during the Renaissance as well as a minor in Communications and Culture. She became interested in Human Enhancement while participating in Dr. Ian Kerr's seminar "Building Better Humans" at the University of Ottawa. If she is not too busy with law school, Shannon spends her time training and competing in triathlons.

#### **Transhumanism and the O(o)ther**

In the debates about human enhancement, some believe that its use must be regulated because of its potential to discriminate. O(o)thers disagree, claiming that the use of enhancement technologies ought to be made available as a basic human right and that a failure to do so raises the possibility of racism. Both points of view imply that one group – the enhanced or the unenhanced – is subject to a process of "othering". This paper extends the post-colonial notion of the Other/other and the process of othering to the enhancement debate, investigating whether transhumanists reiterate or are themselves subjected to a "relationship of power, of domination, of varying degrees of a complex hegemony". Are transhumanists others, or the Other?



**Thomas B. Roberts**

Northern Illinois University

**Thomas B. Roberts, Ph.D.**, is an educational psychologist at Northern Illinois University. He has taught the course Psychedelic Mindview for 25 years, the first catalog-listed course on psychedelics at a university. He organized a conference on the entheogenic uses of psychedelics which was jointly co-sponsored by the Chicago Theological Seminary and the Council on Spiritual Practices and edited *Psychoactive Sacramentals: Essays on Entheogens and Religion* (2001). His online reference Religion and Psychoactive Sacraments excerpts over 550 books and dissertations. He originated Bicycle Day to celebrate Albert Hofmann's first intentional LSD experience, observed on April 19th, and was a founding member of the Multidisciplinary Association for Psychedelic Studies, the International Transpersonal Association, and the Council on Spiritual Practices. He is co-editing a two volume anthology *Hallucinogens and Healing* (due 2007) and is writing *Increasing Spiritual Intelligence — Chemical Input, Religious Output*. His book *Psychedelic Horizons: Snow White, Immune System, Multistate Mind, Enlarging Education* was published this January. His website resides at: [http://www.cedu.niu.edu/epf/edpsych/faculty/roberts/index\\_roberts.html](http://www.cedu.niu.edu/epf/edpsych/faculty/roberts/index_roberts.html).

#### **A New Scientific Endeavor: Psychedelic Enhancements and Mindbody Psychotechnologies**

As the loudest of the mindbody psychotechnologies — the one whose voice we cannot ignore — psychedelics offer to boost intelligence, increase spiritual development, assist creative problem solving, as well as provide methods of psychotherapy. They undermine the singelstate fallacy that all worthwhile human abilities reside in our ordinary mindbody state. By illustrating that multiple mindbody states enhance human development, psychedelics and other mindbody psychotechnologies support exploring and developing the full range of mindbody states. Beyond merely discovering, describing, and domesticating mindbody states as they now exist, is it possible to design new states? This new scientific endeavor reframes current ethical, policy, and legal questions and envisions new problems that society will face in the near future.



**Martine Rothblatt**

Executive Director, Terasem  
Foundation

**Martine Rothblatt Ph.D, JD, MBA** is responsible for launching several satellite communications companies, including the first nationwide vehicle location system (Geostar, 1983), the first private international spacecom project (PanAmSat, 1984), the first global satellite radio network (WorldSpace, 1990), and the first non-geostationary satellite-to-car broadcasting system (Sirius, 1990). As an attorney-entrepreneur she was also responsible for leading the efforts to obtain worldwide approval, via new international treaties, of satellite orbit/spectrum allocations for space-based navigation services (1987) and for direct-to-person satellite radio transmissions (1992). In the 1990s Dr. Rothblatt entered the life sciences field by leading the International Bar Association's project to develop a draft Human Genome Treaty for the United Nations (submitted in 1999), and by founding a biotechnology company, United Therapeutics (1996). Dr. Rothblatt is the author of books on satellite communications technology (*Radiodetermination Satellite Services and Standards*), gender freedom

(*Apartheid of Sex*), genomics (*Unzipped Genes*) and xenotransplantation (*Your Life or Mine*). She is also cyberscripted and produced one of the first cybermuseums, the World Against Racism Museum. Under the auspices of her Terasem foundation, Martine organized the First Annual Colloquium on the Law of Transhuman Persons held in Florida, December 10, 2005.



**Anders Sandberg**

EU Enhance Project, Oxford University

**Anders Sandberg Ph.D.** is a Swedish computational neuroscientist and a prolific writer on transhumanism on the web for the last ten years. He has maintained one of the central transhumanist websites, co-founded Aleph, the Swedish Transhumanist Association, and consults on futurist topics with the firm Tankesmedjan Eudoxa AB.

**Memory Modification and Authenticity**

Memory enhancement and modification (the creation of false memories, changing the emotional impact of memories) is possible today. Memory is also a key part of human narrative identity and modifications have potential to affect identity and the authenticity of life. This paper studies the ethical aspects of memory modification, exploring in what ways memory modification and enhancement constitutes a threat to authenticity and personal identity.



**Robert Schwartz**

Prof. of Law and Pediatrics, University of New Mexico

**Robert Schwartz J.D.** served as legal research associate at The High Court of American Samoa in Pago Pago and then became a Post-Doctoral Fellowship at the Hastings Center. He has been teaching at the University of New Mexico since 1976. He has had Fulbright grants in India and Spain, and he has taught at the University of Tasmania in Australia. He is a co-author of *Health Law* (Fifth edition), and he is the author of many articles on bioethics. In 2005 he received the Jay Healey Award as the Health Law Teacher of the Year from the American Society of Law, Medicine and Ethics.

**The Medicalization of Body Modification and the Ethical Obligations of Health Care Providers**

What forms of body modification should be medicalized, and where can the advantages of medicalization be gained in other ways? Will medicalization undermine some of the purposes of body modification (like rebellion and spiritually valuable pain)? And, finally, and, for health care providers, most significantly, what are the ethical obligations of physicians who are asked by a patient to participate in body modification? Is the health care provider limited to providing treatment, and thus only available when the modification is “therapeutic”? What should a surgeon say when he is confronted with a patient who demands that his arm be severed for therapeutic purposes (“it will exorcise my demons”)?



**Anita Silvers**

Dept. of Philosophy, San Francisco State University

**Anita Silvers Ph.D.**, Professor of Philosophy at San Francisco State University, has published seven books, including *Medicine and Social Justice* (with Rosamond Rhodes and Margaret Battin), *Americans With Disabilities: Exploring Implications of the Law for Individuals and Institutions* (with Leslie Francis), *Disability, Difference, Discrimination: Perspectives on Justice in Bioethics and Public Policy* (with David Wasserman and Mary Mahowald), *Sociobiology and Human Nature* (with Michael Gregory), and *The Recombinant DNA Controversy* (with Michael Gregory). She has written more than one hundred book chapters and articles on ethics and bioethics, social philosophy, aesthetics, law, feminism, and disability studies.

**The right not to be normal as the essence of freedom**

Enhancement is as American as Apple Pie. An avalanche of moral and political claims have been launched to cast enhancement as alien or alienating. But their real target is whoever and whatever appears to be an outlier, namely, anybody or anything considered not to be normal. To the contrary, the personal liberty value to which our nation is subscribed is most fruitful when promoting diversity that frees us not to be normal. What of the fear that permitting this freedom to some inevitably reduces other people’s freedom? Prudence is advisable because the availability of enhancement technologies contingently could do so, but enhancement’s basic nature is to nourish freedom, not to starve it.



**Kirsten Rabe  
Smolensky**

MacLean Ethics Center for  
Clinical Medical Ethics,  
University of Chicago Law  
School

**Kirsten Smolensky J.D.** is a Bigelow Fellow at the University of Chicago Law school where she teaches reproductive law and ethics and legal research and writing. She is also an Ethics Fellow at the MacLean Center for Clinic Medical Ethics at the University of Chicago. Recent publications include “Telemedicine Reimbursement: Raising the Iron Triangle To A New Plateau,” and “Any DNA to Declare? Regulating Offshore Access To Genetic Enhancement.” This fall she will be joining the faculty at the University of Arizona James E. Rogers College of Law as an Associate Law Professor.

**Parental Liability for Germline Genetic Enhancement: To Be or Not to Be?**

It has been suggested that children may one day be able to sue their parents for negligently engineering their germline. In fact, certain international documents suggest that everyone has a legal right to reparations for damages sustained as a result of harmful genetic interventions. Documents like this may one day form the basis for a child’s legal right to sue his or her parents for making “bad” choices when enhancing their child’s genetic germline. This paper argues that while children may have a moral right to an unaltered genome, they do not and should not have a concomitant legal right absent a large, and unlikely, expansion of current tort law.



**Susan Stryker**

Independent Scholar and  
Filmmaker

**Susan Stryker, Ph.D.** is an internationally recognized independent scholar and filmmaker whose historical research and theoretical writings have helped shape the field of transgender studies. In addition to numerous academic articles and works of popular nonfiction, Dr. Stryker was contributing editor of the transgender studies special issue of *GLQ: A Journal of Lesbian and Gay Studies* (1998), and co-editor, with Stephen Whittle, of *The Transgender Studies Reader* (Routledge, 2006). With colleague Victor Silverman she wrote, directed, and produced the public television *Screaming Queens: The Riot at Compton’s Cafeteria* (USA 2005), which examines the militant origins of the contemporary transgender movement in the 1960s.

**Nikki Sullivan Ph.D.** is a Senior Lecturer in the Department of Critical and Cultural Studies, Macquarie University, Australia. She is the author of *Tattooed Bodies: Subjectivity, Textuality, Ethics and Pleasure* (Praeger 2001) and *A Critical Introduction to Queer Theory* (NYUP 2003) as well as numerous articles on body modification.



**Nikki Sullivan**

Department of Critical and  
Cultural Studies, Macquarie  
University

**King’s Body, Queen’s Member: State Sovereignty, Transsexual Surgery, and Self-Demand Amputation**

The technologically modified human form has not only a future, but also a past. We understand transsexual surgery and self-demand amputation as two quite different practices that reveal, in complementary ways, the complex state regulatory regimes that historically have governed antinormative surgical body modifications, and which thus help us chart the trajectory of emerging developments in the field of somatomorphic enhancement technologies. We demonstrate how a discourse of bodily integrity has been deployed both for and against transsexual surgery and self-demand amputation at various historical moments and in differing social contexts. Drawing on Hobbes’ theory of sovereignty in *Leviathan* as well as Foucault’s critique of centralized state authority, we argue that “integrity” is not predicated on notions of natural, biologic, organic unity, but rather on the availability of the body for integration as a source of biopower into the State’s projects. We thus arrive at a radically antihumanist understanding of the political struggles that structure the occupation of one’s own embodied space, and which ultimately determine whether the body is available as a resource for subjective needs as well as state functions.



**Robin Zebrowski**

Department of Philosophy,  
University of Oregon

**Robin Zebrowski** has been in the field of artificial intelligence for about 10 years, but believes the entire project needs an overhaul based on the philosophical work being done in embodiment. And she's the one who plans to do the overhauling. She is currently working on her Ph.D. on the (incorrect) notion of a standard body implicit in the theory of embodied metaphor in cognitive linguistics.

**Every Body is Already Different: How the Myth of a Standard Body Feeds the Myth of an Authentic Self**

The notion of a standard body underlies many philosophical and scientific theories. Yet if there is no standard body, then no bodily alteration can destroy something core. Every body is altered constantly by physical and social forces outside of our control. There is a paradox – selfhood is traditionally something immutable and simple. But critics of enhancement argue that changing the body alters selfhood. We must face the paradox, and if there is no standard body then no alteration destroys this mythical core. I look at neuroscientific and phenomenological accounts of bodily experience to show that there is no standard body.

## Recipients of the Mental Diversity Scholarships

**John Schloendorn** holds a German diploma degree in biochemistry from the University of Tuebingen, Germany. Currently, he is a visiting scholar at the Biodesign Institute, Arizona State University, researching “strategies for engineered negligible senescence” (SENS). This project is supported by the Methuselah Foundation, a non-profit organization advocating for “the defeat of age-related disease and the extension of the healthy human lifespan.” Schloendorn is also an advisor on biotechnology at the Immortality Institute, which is a non-profit organization dedicated to “conquering the blight of involuntary death.”

**Chris Roebuck** is a medical anthropologist who is interested in the relationships between human enhancement technologies, gender, and embodiment. He currently conducts ethnographic research in San Francisco that explores emergent forms of life among MTF transgender women in the context of day-to-day survival strategies, relations of care and kinship, transnational migration, and biomedical enhancements of the gendered body. Recognizing the contemporary era as a time in which human bodies are increasingly the objects of ethical, political, and biomedical technique, Roebuck's research tracks the ways in which specific configurations of knowledge and power shape bodies, social relations, and what it means to be human in the world today. His research asks, on the horizon of life/death, what dangers and possibilities human enhancement technologies present for the embodied biological-social actors we have come to know as humans.

**Sunil Aggarwal** is a fourth-year MD/PhD student at the University of Washington in Seattle, WA. In 2004, as a third-year medical student, he joined the university's geography doctoral program to study medical geography. Sunil's areas of interest include the political ecology of health and disease, structural violence and human rights abuses, and subjective health-related quality of life—especially in the context of human-cannabis relations. He holds a BS in chemistry and a BA in philosophy from the University of California, Berkeley.

**Laura Colleton, J.D.**, studied international human rights and graduated from the University of Notre Dame in 1999 and Harvard Law School in 2003. She also worked for a human rights organization in Pristina, Kosovo. She has written on the abuse of UN power in the provisional Kosovo government as well as restoring humanity after violent ethnic conflict. She studies bioethics at the Kennedy School of Government and Harvard Divinity School, and expects to receive a Master's Degree in Theological Studies in June 2006. At this weekend's conference, Colleton will present on “Health Care Access in the U.S. and the Elusive Line Between Enhancement and Therapy” during the Saturday session, “Equity, Technology and State Power” 3pm-4:30pm.