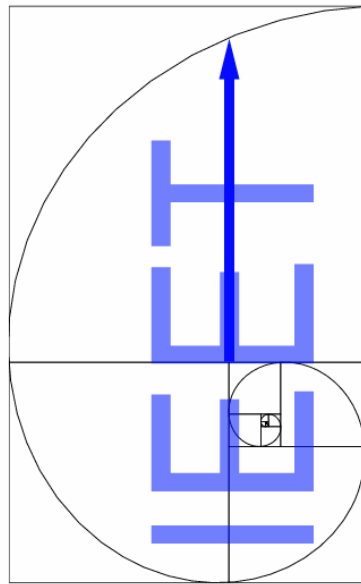
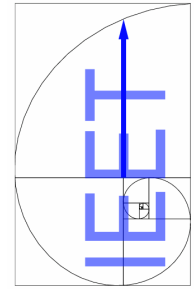


# Institute for Ethics and Emerging Technologies



Working to ensure that humanity  
*survives* and *thrives* in the 21<sup>st</sup> century

# Examining social implications of scientific and technological progress



## WHAT WE DO

The Institute for Ethics and Emerging Technologies was formed to study and debate vital questions such as:

- Which technologies, especially new ones, are likely to have the greatest impact on human beings and human societies in the 21st century?
- What ethical issues do those technologies and their applications raise for humans, our civilization, and our planet?
- How much can we extrapolate from the past and how much accelerating change should we anticipate?
- What sort of policy positions can be recommended to promote the best possible outcomes for individuals and societies?

## MISSION

The IEET is a center for voices arguing for a responsible, constructive, ethical approach to the most powerful emerging technologies. We believe that technological progress can be a catalyst for positive human development so long as we ensure that technologies are safe and equitably distributed. We call this a *technoprogressive* orientation.



We aim to showcase technoprogressive ideas about how technological progress can increase freedom, happiness, and human flourishing in democratic societies.

Focusing on emerging technologies that have the potential to positively transform social conditions and the quality of human lives—especially "human enhancement technologies"—the IEET seeks to cultivate academic, professional, and popular understanding of their implications, both positive and negative, and to encourage responsible public policies for their safe and equitable use.

## HISTORY

The Institute was founded in 2004 by philosopher Nick Bostrom and bioethicist James J. Hughes, and is incorporated as a nonprofit organization in the United States. Current members of the Board of Directors are from Spain, Canada, the UK and the United States. By promoting and publicizing the work of thinkers who examine the social implications of scientific and technological progress, we seek to contribute to the understanding of the impact of emerging technologies on individuals and societies.



## PURPOSE

The liberal democratic revolution, centuries old and still growing strong, has at its core the idea that people are happiest when they have rational control over their lives. Reason, science, and technology provide one kind of control, slowly freeing us from ignorance, toil, pain, and disease. Democracy provides the other kinds of control, through civil liberties and electoral participation.

Technology and democracy complement one another, ensuring that safe technology is generally accessible and democratically accountable. The convergence of nanotechnology, biotechnology, information technology, and cognitive science in the coming decades will give us unimaginable technological mastery of nature and ourselves. That mastery requires progressive democratization.

Our purpose, therefore, is to stimulate and support constructive study of ethical issues connected with these powerful emerging technologies.

## The Debate Over Human Enhancement

In the next fifty years, artificial intelligence, nanotechnology, genetic engineering, and cognitive science will allow human beings to transcend the limitations of the human body. Healthy lifespans will extend well beyond a century. Our senses and cognition will be enhanced. We will have greater control over our emotions and memory. Our bodies and brains will be surrounded by and merged with computer power. We will use these technologies to redesign ourselves and our children in ways that push the boundaries of “humanness.”



The prospect of rapid change in the human condition understandably worries many people. Now a loose coalition of groups has emerged to forbid human enhancement—from genetic therapies and psychopharmaceuticals to prosthetic organs and nanomedical robotics. This “bioconservative” coalition is diverse, including some bioethicists, religious conservatives, disability rights and environmental activists, and leftist critics of biotechnology.

The IEET believes this debate desperately needs voices that avoid these extremes, voices that argue for the potential benefits of new technologies while proposing realistic policies to mitigate their risks within a strong democratic framework.

## Defending Rights While Taking Risks Seriously

Responding to the polarization of the debate between technophobes and anti-regulatory technophiles, an emerging global network of technoprogressive thinkers are defending individuals’ rights to use human enhancement technologies, while taking seriously the need to regulate their safety and social consequences. Technoprogressives address questions such as peoples’ right to use—and not use—cognitive enhancement technologies in an increasingly competitive society.

How much clinical testing will be necessary to ensure the safety of genetic enhancements? How can we regulate psychoactive drugs in a way that respects cognitive liberty? When should parents be permitted to genetically enhance their children? How can we avoid exacerbating inequality as human enhancement technologies spread? Which enhancement therapies should be provided through the market and which as

a right of citizenship through universal health plans? As yet there has been no institutional home for the consideration of these ethical challenges of emerging technologies free from both technophobic red herrings, such as anxieties about transgressing the boundaries of humanness and human reason, and from anti-regulatory dogmas that reject democratic public policy as an avenue to address future risks. The Institute for Ethics and Emerging Technologies intends to fill that gap.

## A Focus on Individuals and Societies

Personal enhancement—potentially transforming some humans into posthumans—is an obvious and necessary area of study for the Institute. But the recognition that all individuals exist within societies, and that personal choices may overlap the rights of others within those societies, makes the work of IEET scholars more complex and also more urgent.



As technoprogressives, we want to see all sentient beings protected in their rights for self-augmentation, enhancement, or modification, and we want everyone to have fair and equal access to such treatments. However, we believe those technologies must be tested for safety and efficacy, and made universally accessible. Their consequences for society will be profound, and need to be thoroughly considered.

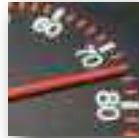
Similarly, we affirm the possibility of a bountiful technological future. But we believe robust efforts are required to insure that the path of technological development is safe, sustainable, and offers abundance for all.

We desire to live in a world where peace and security are considered a given everywhere around the globe. Thus, we encourage activism that reaches across ethnic, cultural, and geographic lines, especially when those initiatives involve transnational cooperation. We strongly support the use of emerging technologies to extend human capacities for knowledge, for understanding, for communication, and for wise decision-making.

## IEET PROGRAMS

### Securing the Future

Under our “Securing the Future” research program we link with like-minded organizations working to identify and advocate for global solutions to threats to the future of civilization.



#### Action to Date

- Published numerous articles on geoengineering as a possible approach to climate change, the effects of emerging technologies on war and conflict, the prospects for greater than human intelligence, and the effects of technology on surveillance and political power.
- Held a one day seminar on “Global Catastrophic Risks” at the Computer History Museum on November 14, 2008. All talks were videotaped and posted online, along with transcripts.
- IEET Chair Nick Bostrom and IEET Fellow Milan Cirkovic published the edited volume *Global Catastrophic Risks* in 2008 and organized a three day conference on “Global Catastrophic Risks” at Oxford University July 17-20, 2008, at which IEET Executive Director James Hughes and IEET Managing Director Mike Treder both spoke. All four also had chapters in the GCR volume.
- IEET Fellow Jamais Cascio has published a volume of essays on geo-engineering, and done extensive public speaking on the topic.

#### Current Activity

- The IEET manages the ‘existential-risk’ mailing list to help coordinate those interested in mitigating catastrophic risks.

#### Plans in Progress

- Organize a larger conference to continue the building of a catastrophic risks assessment and mitigation dialogue.
- Fund IEET Fellows to write about catastrophic risks, such as support for Cascio to write more on geo-engineering.
- Assist IEET Fellows and staff in attending and addressing meetings on catastrophic risk-related topics, such as the militarization of space, biosafety, nanotechnology, species diversity, cybersecurity, etc.

### Rights of the Person

Sane adult citizens have a right to control their own bodies and minds. Through the “Rights of the Person” program we engage the human rights community, legal scholars, reproductive rights activists, the transgendered community, and advocates of public health approaches to illicit drugs in a campaign to deepen and broaden the concept of human rights. In particular we believe that the right to technological self-determination should be protected by laws and treaties.



#### Action to Date

- Published numerous articles on cognitive liberty, rights to enabling therapies, reproductive rights and great ape rights.
- Held a three-day conference May 26-28, 2006 at the Stanford Law School on “Human Enhancement Technologies and Human Rights.” The meeting was co-sponsored by the IEET, the Center for Cognitive Liberty and Ethics, Stanford Center for Law and the Biosciences, Stanford Program in Ethics in Society, GeneForum, ExtraLife Inc. The papers from this conference were published as a special issue of JET (see below) in 2007.
- On Friday, December 1, 2006, the IEET and IHEU/Appignani Center for Bioethics—the bioethics liaison office of the International Humanist and Ethical Union—co-sponsored a panel discussion on “Cognitive Liberty in an Age of Neurotechnology.”
- Held a three day conference “Human Rights for the 21st Century” at United Nations Plaza in New York City, May 11-13, 2007. The meeting was co-sponsored with the IHEU/ Appignani Center for Bioethics. All talks were recorded and free podcasts made available online.
- In 2008, IEET Chair Nick Bostrom published a collected volume of essays, *Human Enhancement*, with co-editor Julian Savulescu.

#### Current Activity

- The IEET manages the ‘technoprogressive’ mailing list to help coordinate those interested in maintaining and expanding human rights.

### *Plans in Progress*

- Prepare a grant proposal to the National Science Foundation to support a workshop on “Nanotechnology and the Boundaries of Personhood” in 2010.
- Convene a group of lawyers and legal scholars to draft cognitive liberty, bodily autonomy and reproductive rights amendments to the Universal Declaration of Human Rights and European Union human rights conventions.
- Support and coordinate with drug law reform efforts, reproductive rights campaigns, transgender rights, access to treatment and assistive devices for the disabled, and extending rights to great apes.
- Publish white papers on disability, transgender, reproductive rights, drug law reform. and personhood recognition for great apes.

### **Longer, Better Lives**

Twenty extra years of healthy life are just as valuable in someone’s second century of life as in their first. With the “Longer, Better Lives” program we seek to make the case for longer healthier lives, addressing objections to life extension, from the alleged problem of overpopulation to the threat of ennui. We are coordinating and seeking consultation with senior citizens groups and organizations of the disabled to help them challenge ageist and ableist attitudes that discourage the full utilization of health technology.



### *Action to Date*

- Held a one-day seminar for Longevity Dividend activists on July 23, 2007 in Chicago. All talks from the seminar were posted online.
- Ran a ten-week distance learning course in 2008 on aging and public policy to train activists to make the case for the Longevity Dividend.
- Have published many articles in defense of radical longevity and life-enhancing biotechnologies such as cognitive enhancing drugs and performance enhancement in sports.

### *Current Activity*

- The IEET manages the ‘ieet-life’ mailing list to share information about longevity and public policy among Longevity Dividend activists.

### *Plans in Progress*

- Continue to coordinate with the Alliance for Aging Research in Washington D.C. to promote U.S. funding for anti-aging research.
- Network between the longevist community, the bio-gerontology community, and health policy community.
- Publish a special issue of JET (see below) on the Longevity Dividend.

### **Envisioning the Future**

Through our “Envisioning the Future” program we engage with culture critics, artists, writers, filmmakers and consumers to explore the biopolitics implicit in depictions of technology in literature, film and television.



### *Action to Date*

- Published many critiques of technology depiction in popular culture, such as a ten-part series discussing the biopolitical implications of the *Battlestar Galactica* series in 2008, as well as pieces on virtual worlds and copyleft culture.
- IEET Fellow Andy Miah published two recent books, *Human Futures: Art in the Age of Uncertainty* by Andy Miah (2008) and *The Medicalization of Cyberspace* (2007).

### *Current Activity*

- Manage the ‘ieet-images’ list to discuss biopolitics in popular culture.
- Maintain the *Changesurfer* podcast and a multimedia channel through the IEET site.

### *Plans in Progress*

- Establish an IEET bloggingheads-style video log.
- Send representatives to speak at appropriate meetings, such as conferences on science fiction and popular culture, and organize panels at SF cons on the need for more complex portrayals of a posthuman future.
- Arrange fora and meetings with authors, artists and culture creators to discuss the biopolitical messages in popular culture, and heighten their sensitivity to bioconservative tropes and biases.

## IEET PERSONNEL



**IEET Chair Nick Bostrom Ph.D.** is a Professor of Philosophy at Oxford University, and the Director of Oxford's Future of Humanity Institute. He co-founded Humanity+ (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), the European Commission, and the European Group on Ethics (Brussels).

**Executive Director James Hughes Ph.D.** is a bioethicist and sociologist at Trinity College in Hartford Connecticut where he teaches Health Policy. He holds a doctorate in sociology from the University of Chicago, where he also taught bioethics. Dr. Hughes is author of *Citizen Cyborg: Why Democratic Societies Must Respond to the Redesigned Human of the Future* (Westview Press, 2004), and produces a syndicated weekly radio program, *Changesurfer Radio*. James is a member of the American Society of Bioethics and Humanities and the Working Group on Ethics and Technology at Yale University. He is working on a second book tentatively titled *Cyborg Buddha*, on the uses of neurotechnology for the enhancement of moral behavior.



**Mike Treder, Managing Director of the IEET,** is the former Executive Director and co-founder of the Center for Responsible Nanotechnology, a non-profit organization working to raise awareness of issues presented by advanced nanotechnology. Mike has addressed conferences and groups worldwide on the societal implications of emerging technologies. In addition to his work with the IEET, he is a consultant to the Millennium Project of the American Council for the United Nations University, is a member of the Board of Directors of Humanity Plus, serves on the Scientific Advisory Board for the Lifeboat Foundation, is a consultant to the Future Technologies Advisory Group, and is a member of the World Future Society.

### 2009-2010 Program Fellows

The Fellows of the Institute represent diverse constituencies and political orientations. But they have this in common: a determination to ensure that developments in biotechnology, nanotechnology and artificial intelligence improve the common good and sustain, and do not subvert, democratic values of liberty, equality and social solidarity.

**Senior Fellow William Sims Bainbridge Ph.D.** is a prolific and influential sociologist of religion, science and popular culture. Dr. Bainbridge serves as co-director of Human-Centered Computing at the NSF and has published more than a dozen more books dealing with space, religion, and psychology. Dr. Bainbridge's long-standing interest in "personality capture," using extensive personality surveys to record individual personalities in software, is reflected in works such as *Experiments in Psychology* (1986) which included cutting-edge psychology experimentation software written by Bainbridge. Dr. Bainbridge was instrumental in creating the NBIC Converging Technologies program. Dr. Bainbridge's two most recent books are *God from the Machine* (2006) and *The Secular Abyss* (2007). Dr. Bainbridge has published over 200 articles and essays for various journals and encyclopedias.

**Senior Fellow Jamais Cascio** has consulted for government, nonprofits and the private sector. He co-founded WorldChanging.com, a website on tools for a better world. Jamais was primary author of the 2003 Global Business Network core global scenarios. Jamais has written about the collision of technology and society for *Salon*, *Wired*, *The Washington Post*, *Seattle Weekly*, *Johannesburg Mail & Guardian*, and *Time* magazine. Recently he published *Hacking the Earth*, a collection of essays on geoengineering.

**Peter Bebergal** received his Masters of Theological Studies from Harvard Divinity School in 1996. Since that time he has written widely on religion, science fiction, and the intersection of science and faith. He also regularly reviews science fiction and fantasy for various publications. He is working on a book on the history of psychedelics and mysticism in America. Peter is the coauthor with Scott Korb of *The Faith Between Us*.

**Russell Blackford Ph.D. LLB**, an attorney, science fiction author and critic, and philosopher, lives in Melbourne Australia. He teaches in the School of Philosophy and Bioethics, and is an research associate at Monash University. He writes frequently on bioethical issues, including cloning, stem cell research, and genetic engineering, in the *Journal of Medical Ethics*, *Betterhumans* and the Australian journal *Quadrant*.

**Marshall Brain** is the author of *The Day You Discard Your Body*, *Manna* and the founder of HowStuffWorks.com. He is known for his book for teenagers entitled *The Teenager's Guide to the Real World*.

**Riccardo Campa Ph.D.** is assistant professor of sociology at the University of Cracow, where he teaches the sociology of science, technology, and terrorism. He is the author of *Epistemological Dimensions of Robert Merton's Sociology*, *Il filosofo è nudo* and a forthcoming book on transhumanism. Riccardo wrote for the newspaper *La Voce di Mantova* and newsmagazine *Il Mondo*. In 2004 he won a NATO fellowship to research techno-ethics. Presently, he writes regularly for the journal *MondOperaio*.

**Milan Ćirković** is Senior Research Associate at the Astronomical Observatory of Belgrade and Assistant Professor of the Department of Physics at the University of Novi Sad in Serbia and Montenegro. He is co-editor with IJET Chair Nick Bostrom of the 2008 volume *Global Catastrophic Risks* from Oxford University Press.

**Ben Goertzel** is founder and CEO of two computer science firms, Novamente and Biomind, and of the nonprofit Artificial General Intelligence Research Institute. He has served as university faculty in several departments of mathematics, computer science and cognitive science in the U.S., Australia, and New Zealand. He is author of two books focused on the future of technology and society, *Creating Internet Intelligence*, and *The Path to Posthumanity*. Ben serves as Director of Research for the Singularity Institute for AI.

**Aubrey de Grey Ph.D.** is a biogerontologist who designs interventions to reverse the cellular and molecular changes that accumulate with age and reduce remaining life expectancy. He has published widely on such technology, and is the 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.

**Linda MacDonald Glenn, J.D., LL.M.** is a bioethicist and attorney, and Women's Bioethics Project Scholar. Linda teaches bioethics at the University Of Vermont and lectures and speaks widely on medical ethics issues. Prior to returning to an academic setting, Linda consulted and practiced as a trial attorney with an emphasis in patient advocacy, bioethical and biotechnology issues, end of life decision-making, reproductive rights, genetics, neuroethics, parental/ biological issues, and animal rights.

**Randall Mayes** is a science writer and policy analyst with a focus on athletics and performance enhancement. He is author of *The Cybernetics of Kenyan Running*. He holds a Masters in Environmental Management from Duke University where he worked on cybernetic approaches to solving environmental problems and developing policy solutions, and policy analysis of government failures in science policy.

**Andy Miah Ph.D.** is Lecturer in Media, Bioethics, and Cyberculture at University of Paisley, Scotland. He has recently published many academic articles on bioethics and is author of *Genetically Modified Athletes* (2004), *The Medicalisation of Cyberspace* (2006) and *CyberSport: Digital Games, Ethics & Cultures* (The MIT Press, 2007). Andy is a member of the Royal Institution of Great Britain and editorial board member for *Genomics, Society & Policy*.

**Ramez Naam** is the author of *More than Human: How Technology Will Transform Us and Why We Should Embrace It*. Naam is senior technologist at Microsoft working on Internet Explorer and Outlook.

**Douglas Rushkoff** is author of, among his ten books, *Playing the Future*, *Open Source Democracy* and *Get Back in the Box: Innovation from the Inside Out*. Rushkoff also wrote the acclaimed novels *Ecstasy Club* and *Exit Strategy* and graphic novel, *Club Zero-G*. He has written and hosted two Frontline documentaries - "The Merchants of Cool" and "The Persuaders," about corporate influence on culture and consumer resistance. Rushkoff's commentaries air on CBS Sunday Morning and NPR's All Things Considered, and have appeared in publications from The New York Times to Time magazine.

**Susan Schneider** is Assistant professor for the Department of Philosophy, University of Pennsylvania and an Affiliated Faculty Member at the Institutes for Research in Cognitive Science and Center for Cognitive Neuroscience. She focuses on issues involving the philosophy of cognitive science and, in particular, the plausibility of computational theories of mind and theoretical issues in artificial intelligence. She also has authored numerous articles in metaphysics.

**Wrye Sententia Ph.D.** is director of the Center for Cognitive Liberty and Ethics (CCLE), a nonprofit research, policy, and public education center working to advance and protect freedom of thought into the 21st century. Dr. Sententia has guided the CCLE in sponsoring the National Science Foundation's initiatives aimed at "Converging Technologies for Improving Human Performance." In 2002, Sententia provided comments to the appointed President's Council on Bioethics in Washington D.C., on the topic of cognitive enhancement technologies and in October 2004 debated members of the Council on the democratic values of the US Declaration of Independence in relation to emergent enhancement biotechnologies and human freedom.

**Natasha Vita-More** is a media designer and futurist, and a prominent proponent of ethical means for achieving human enhancement. She has spoken worldwide on futurism and art for two decades. She is currently a Ph.D. Candidate at the Faculty of Technology, University of Plymouth. Her work has been featured in *Wired*, *LA Weekly*, *The New York Times*, *U.S. News & World Report*, *Net Business*, *Teleopolis*, *Village Voice*, and in more than a dozen documentaries.

## IEET ACTIVITIES

The Institute has built a network of visionary thinkers and activists working on the policy implications of emerging technologies.

**Fellows and Interns** - Since 2004, IEET Fellows have written hundreds of op-eds, journal articles and book chapters, and the IEET has promoted their work through our website and publications. Numerous interns work with our fifteen fellows, doing research, editing manuscripts, and assisting with IEET projects.

**Networking Scholars and Organizations** - In each of our four programmatic areas we are building a database of scholars and networking with organizations working on similar topics from similar points of view.

**Conferences and Speakers** - The IEET organizes several events per year—conferences and one-day seminars in Europe and North America—to promote discussion of technoprogressive policy ideas.

**Media outreach** - Through targeted press releases and the provision of qualified spokespersons, the Institute disseminates key policy ideas that address emerging technologies. The Institute sponsors the weekly syndicated *Changesurfer Radio*, and is developing other educational materials for radio, television and the web.

**Books** - Collectively IEET Fellows and staff have authored dozens of books on technoprogressive themes.

**White Papers** - In each of our four program areas we have outlined a set of position papers to address benefits and risks of emerging technologies.

**Publications** - The Institute solicits articles from recognized experts and thinkers for publication in the IEET's *Journal of Evolution and Technology*, at the IEET website, in booklets, and in newspapers and magazines that reach a broad and informed audience.



**Journal of**  
**EVOLUTION**  
& **Technology**

jetpress.org

The *Journal of Evolution and Technology* is a scholarly peer-reviewed journal, publishing academic-quality research since 1998. JET welcomes submissions on subject matter that many mainstream journals shun as too speculative, radical, or interdisciplinary on issues relating to the future prospects of the human species and its descendants. JET's editor-in-chief is the Australian bioethicist and attorney Russell Blackford.

### OUR GLOBAL VISION

Ultimately we want to see the enforcement of international law and human rights agreements, such as the Universal Declaration of Human Rights, promising fundamental freedoms, health, welfare, and education for all.

We also want to see an extension of international human rights to include the rights to bodily autonomy, reproductive choice, and cognitive liberty for all persons.

We place great value on a healthy biosphere, realized through a combination of wise democratic action and the responsible deployment of powerful new technologies.

We favor expanded, enlightened definitions of personhood, to take in all sentient beings, whether human in origin or not.

We look forward to increased equality of opportunity, decreased suffering, and flourishing diversity in human and posthuman development.

### STAY IN TOUCH

#### Subscribe to the IEET Blog

Receive notices of the latest articles published by IEET Fellows and staff.

<http://feeds.feedburner.com/EthicalTechnology>

#### Receive notification of IEET news, articles and events

Sign up to receive notice of upcoming events, news and published articles.

Subscribe to [ieet-announce](http://ieet.org) at <http://ieet.org>

#### Receive a daily news feed of technoprogressive items of interest

Discuss technoprogressive policy with other supporters of the IEET.

Subscribe to [ieet-news](http://ieet.org) at <http://ieet.org>

#### Subscribe to our podcast

Receive a weekly download of *Changesurfer Radio*, produced by James Hughes.

<http://feeds.feedburner.com/ChangesurferRadio>

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