

Technologies & Applications / Politics & Policies / Center for Genetics and Society Activities 2000–2014

| Technologies & Applications | Politics & Policies | CGS Activities |
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| <p>2000</p> <ul style="list-style-type: none"> • First successful somatic gene therapy experiment, for X-SCID • Human genome mapped (Collins, Venter) • Nematodes engineered for double life-span • First cloned pigs • Genetically modified fluorescent rabbit created as artwork • Mice genetically modified to resist obesity • Birth of first “savior sibling,” Adam Nash (UK) | <p>2000</p> <ul style="list-style-type: none"> • Controversy over 1999 death of Jesse Gelsinger following gene therapy experiment • Bill Joy cites dangers of genetic engineering, nanotech & robotics in <i>Wired magazine</i> • Major European bank bans loans to companies promoting human genetic modification • Japan, Netherlands ban cloning and inheritable genetic modification (IGM) • AAAS report opens doors to IGM • Council for Responsible Genetics issues "Genetic Bill of Rights" | <p>2000 (pre-CGS “Exploratory Initiative on the New Human Genetic Technologies”)</p> <ul style="list-style-type: none"> • First sign-on letter: “Say No to Human Germline Engineering” for Asilomar conference • First funder briefing: Tides Center, San Francisco • First radio interviews: KPFA Morning News • First briefing for women’s health/feminist leaders • First strategy meetings: San Francisco in April and August • First briefing for environmental and other NGO leaders in DC |
| <p>2001</p> <ul style="list-style-type: none"> • First attempt to clone an endangered ox species, a Gaur; it dies • First cloned cat (Genetic Savings and Clone) • First ooplasmic transfers creating children with three genetic parents • First genetically modified primate • ACT falsely claims to have created the first clonal human embryo | <p>2001</p> <ul style="list-style-type: none"> • UK allows creation of clonal human embryos • President Bush permits federal funds for research on existing stem cell lines; establishes Bioethics Task Force w Leon Kass, Chair. • World Conference on Racism condemns human genetic engineering • US House passes ban on all cloning • France and Germany call for UN to draft global cloning treaty • First World Transhumanist Association international assembly • Council of Europe Convention on Biomedicine & Human Rights enters into force • Biotechnology Industry Organization calls for voluntary moratorium on reproductive cloning | <p>2001</p> <ul style="list-style-type: none"> • CGS established, with Tides Center as fiscal sponsor • Briefing for funders at Rockefeller Foundation, NYC • Women’s health leaders strategy meeting, San Francisco • CGS meetings in Geneva: World Health Assembly, World Council of Churches • CGS pressures American Society for Reproductive Medicine to modify position on sex selection • First CGS conference: <i>Beyond Cloning</i> at Boston University; w/ Global Lawyers & Physicians, Our Bodies Ourselves • CGS moves to Oakland office; 5 staff |

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| <p>2002</p> <ul style="list-style-type: none"> • Covert attempts to create clonal human embryos at Stanford University and UCSF • Polio virus synthesized using mail-order DNA • Craig Venter announces intention to create first true artificial life • Cloning hoaxes: Raelians, Antinori, Zavos • Chinese researchers claimed to have created human clonal embryos with rabbit eggs; reports of success using human eggs | <p>2002</p> <ul style="list-style-type: none"> • UN launches process for international convention to ban human cloning • Australia and Norway pass cloning laws • European bioethicists release statement supporting inheritable genetic modification • World Olympics Committee bans gene doping • German Foreign Minister Joschka Fischer calls for international accord on human genetics • California bans reproductive cloning, allows cloning-based stem cell research • US Senate deadlocked on cloning • World Health Organization report sanctions IGM | <p>2002</p> <ul style="list-style-type: none"> • CGS website goes online • First CGS op-eds • Sign-on letter to US Senators on cloning legislation with 100+ liberal and progressive leaders • First CGS conference call press briefing • CGS briefings for UN delegates and NGO leaders, NYC • Regional briefings for Planned Parenthood • <i>World Watch</i> magazine special Issue on human biotech, guest-edited by CGS • CGS Panel at <i>World Congress of Bioethics</i> in Brasilia |
| <p>2003</p> <ul style="list-style-type: none"> • First genetically modified animal to be sold as a pet, the “Glofish” • First cloned mules, horses, deer, rats • First synthetic virus • Stem cells derived from monkey parthenotes • Scientists create human embryo that is both male and female • Gene therapy trials cause leukemia in French children • Sperm and eggs derived from mouse embryonic stem cells • UK women screen embryos to ensure birth of a deaf child | <p>2003</p> <ul style="list-style-type: none"> • US Congress passes bill banning all human cloning • Publication of <i>Enough: Staying Human in an Engineered Age</i>, by Bill McKibben • ETC Group publishes <i>The Big Down</i>; first activist attention to nanotechnology • Spread of commercial advertisements for sex selection • US governors apologize for past eugenic sterilizations • Spain reverses earlier policy, allows cloning-based stem cell research • Many US states initiate stem cell programs | <p>2003</p> <ul style="list-style-type: none"> • CGS panel at World Social Forum in Porte Alegre • Round of CGS briefings and meetings in Paris, Brussels, Strasbourg, Bonn, Berlin, Geneva, Zurich • First CGS symposium: Bill McKibben on <i>Enough</i> • First CGS International conference: <i>Within and Beyond the Limits of Human Nature</i>, in Berlin; co-sponsored w/ Heinrich Boell Foundation, IMEW • CGS organizes symposium at Carnegie Endowment for Peace in Washington DC • CGS briefs leaders of the National Council of Churches |

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| <p>2004</p> <ul style="list-style-type: none"> • In Korea, Hwang Woo Suk claims stem cells extracted from clonal human embryos • Mice genetically modified for increased muscle mass • First parthenote mouse: two female genetic parents, no male parent • United Kingdom begins serious attempts to create clonal human embryos • Genetics Savings and Clone offer commercial cat cloning @ \$30,000 each. • “Savior siblings” created to provide stem cells for children suffering from non-genetic diseases • Researchers create zebrafish from genetically modified sperm • Several companies working on artificial human chromosomes | <p>2004</p> <ul style="list-style-type: none"> • Canada, France, and New Zealand approve legislation allowing stem cell research, banning SCNT and germline • First SynBio conference held at MIT • James Martin donates \$100 million for program at Oxford University promoting transhumanism • Japan allows SCNT, under oversight • UK approves PGD for late-onset conditions • US President’s Bioethics Council releases <i>Reproduction and Responsibility: The Regulation of New Biotechnologies</i> • California voters approve Proposition 71 to fund stem cell research (59%-41%) • Israel and Brazil ban reproductive cloning | <p>2004</p> <ul style="list-style-type: none"> • CGS presents at World Social Forum in Mumbai • CGS Conference on <i>Gender, Justice and the Gene Age</i>, NYC; 65 participants (w Our Bodies Ourselves, CWPE) • CGS symposium on <i>Inequality, Democracy and New Human Biotechnologies</i>, NYC; 130 participants • CGS Gender, Justice and Human Genetics program begins • CGS leads pro-choice opposition to California’s \$3 billion stem cell initiative, Proposition 71 • CGS symposium at <i>World Congress of Bioethics</i>, in Sydney, Australia • CGS symposium on <i>The Next Four Years, the Biotech Agenda, the Human Future</i>, NYC; 400 participants |
| <p>2005</p> <ul style="list-style-type: none"> • First “home test” for sex selection (Baby Gender Mentor) offered but found to be a fraud • First cloned dog (Korea) • First face transplants (France, US) • Gene identified having “major” influence on IQ • Korean cloning claims found to be fabricated • Stanford researchers create chimeric mice with human nervous system • Sex selection “clinical trial” to study social effects of the practice • Gene sequence for virulent influenza virus sequenced and published online | <p>2005</p> <ul style="list-style-type: none"> • US Patent Office rejects request to patent human-ape embryo • US Congress passes bill increasing funding for stem cell research using IVF embryos • UN ends debate on human cloning treaty with inconclusive non-binding resolution • Committee of UK Parliament supports inheritable genetic modification • US FDA approves first race-specific drug • Connecticut, Illinois, and New Jersey approve stem cell research funding • National Council of Churches (USA) approves new policy on human biotechnologies • US National Academies publishes permissive stem cell research guidelines | <p>2005</p> <ul style="list-style-type: none"> • CGS panel at World Social Forum in Porte Alegre • CGS leadership on post-ballot stem cell controversies in California • CGS exposes conflicts of interest on California stem cell board • Publication of <i>Human Genetic Engineering</i> by CGS Associate Pete Shanks • CGS meetings and briefings in Costa Rica and El Salvador • CGS receives “Local Heroes” award from <i>SF Bay Guardian</i> • CGS presents at the biennial conference of the ACLU • CGS engages women’s advocates in India and Thailand • Expansion of CGS staff from 5 to 10, moves to larger office |

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| <p>2006</p> | <p>2006</p> | <p>2006</p> |
| <ul style="list-style-type: none"> • Hwang Woo Suk disgraced amid scandal of false data, embezzlement, & improper egg acquisition • Genetic Savings and Clone closed • UK scientists produce mice from sperm derived from embryonic stem cells • Survey finds almost half of US fertility clinics offer non-medical sex selection • Progress toward creation of stem cell lines which don't destroy embryos • Harvard begins work towards cloning-based stem cell research • ACT complains that it is unable to get women to provide eggs for SCNT • First scientific meetings on the risks of providing eggs for research | <ul style="list-style-type: none"> • Publication of <i>Beyond Bioethics</i> by Francis Fukuyama and Franco Furger • Media attention to "Synthetic Biology"; researchers call for self-governance; civil society protests • "Hinxtion Group" of international bioethicists and scientists call for minimal stem cell regulations • AAAS convenes supporters of human "enhancement" to discuss views and strategy • Missouri voters pass stem cell ballot measure • President Bush vetoes Castle-DeGette stem cell bill • Australia lifts moratorium on SCNT | <ul style="list-style-type: none"> • CGS publishes <i>The California Stem Cell Program at One Year: A Progress Report</i> ; calls for resignation of chair Robert Klein • Century Foundation publishes <i>Stem Cells and Public Policy</i>, by CGS staff • Continued round of Gender and Justice meetings, briefings and workshops • Briefing for funders at the Ford Foundation • CGS conference call briefing for journalists on stem cell politics • California approves bill protecting women egg donors, following call and advocacy by CGS • CGS and ACLU sponsor regional leadership conference on human biotechnologies • CGS presentations at conference on women and stem cell research in Seoul, Korea • Gender and Justice leadership convening at Asilomar • CGS blog, <i>Biopolitical Times</i>, goes online • CGS cosponsors two-day event on LGBT perspectives on genetic technologies in New York, NY • CGS co-hosts dialogue on women of color and new human genetic technologies, in Los Angeles |

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| 2007 | 2007 | 2007 |
| <ul style="list-style-type: none"> • Craig Venter announces replacement of bacterial genome, key step towards artificial life • California issues first US public funding of cloning-based stem cell research • Harvard unable to get women to provide eggs for cloning-based stem cell research • Genes for skin color identified and proposed for general use by consumers • Genetic basis claimed for voting behavior, Industrial Revolution, children’s taste in food • Texas fertility center offers “custom designed” embryos • Controversy over death in gene therapy experiment in Illinois • Egg freezing increasingly available and promoted • <i>23andMe</i> set to offer complete personal genomic sequencing; Google invests • New at-home tests allow expectant mother to determine sex of future child at six weeks • Clonal monkey embryos produce embryonic stem cells; but monkey repro cloning fails • Embryonic stem cells derived from skin cells, obviating need for human embryos | <ul style="list-style-type: none"> • UK approves creation of human-animal hybrid embryos for stem cell research • Bill to restrict human gene patents introduced in US Congress • Craig Venter files patent for first artificial life • Synthetic biologists outlined plan for self-regulation; civil society protests • California governor vetoes law requiring labeling of food from cloned animals • International Society for Stem Cell Research releases permissive guidelines • Publication of <i>The Case Against Perfection</i>, by Harvard professor Michael Sandel • Launch of direct-to-consumer ads for genetic tests • New Jersey residents to vote on stem cell funding • UK bill would allow creation of genetically modified human embryos for research • Major attention to political implications of iPS: Are the stem cell wars over, or not? | <ul style="list-style-type: none"> • New CGS website launched • CGS presents on biotech regulatory policy at a Washington DC Capitol Hill briefing organized by New America Foundation • CGS hosts Michael Sandel at events in Berkeley • Gender and Justice program prepares to become independent organization • Roundtable discussions with disability rights and reproductive rights leaders • CGS briefing for Friends of the Earth International in Amsterdam • CGS participates in World Council of Churches human biotech convening in Johannesburg, SA • CGS presentations at venues including LGBT Funders Network, Calif Women’s Commission, American Assoc of People with Disabilities, National Health Law Program, Empowering Women of Color, Law Students for Choice, Facing Race, The Business of Race and Science, From Abortion Rights to Social Justice, Reproductive Technologies and Social Justice, Center for American Progress, Planned Parenthood, Causes in Common, SisterSong, US Social Forum, Progressive Bioethics Summit, Black Women for Wellness, WEACTION Conference on Genes and Justice, Law Students for Reproductive Justice, and American Public Health Association • Strong CGS response to iPS announcements: op-eds, press citations, TV & radio interviews, letters. |

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| 2008 | 2008 | 2008 |
| <ul style="list-style-type: none"> • Prenatal test for hundreds of genetic conditions under development • Gene test for children's purported athletic tendencies marketed to parents • Study: IVF greatly increases birth defects • First ovary transplant • Eggs grown from five-year-old girls' ovarian tissue • Egg freezing becomes more widely available • Personal Genome Project launched • Improvements to producing stem cells via reprogramming • Medical gene transfer successfully treats blindness, cancer in clinical trials • DIY biology • Ian Wilmut quits cloning-based stem cell research • First clonal human embryo • First genetically modified human embryo reported • First animal-human cytoplasmic hybrid embryo • Over-the-counter paternity tests • Commercial dog cloning revived | <ul style="list-style-type: none"> • Barack Obama elected president; promises to remove Bush stem cell funding restrictions • Biotech industry, Calif stem cell agency face cash crunch • New Jersey, Maryland stem cell programs essentially ended; stem cell ballot initiative passes in Michigan • UK HFEA overhauled by legislation • UK HFEA approves cytoplasmic hybrids for stem cell research, PGD for breast cancer gene • Vatican issues first in-depth statement on reproductive technologies in 21 years • US federal govt expands collection of DNA to all people arrested for federal crimes and immigration charges • European court rules against UK DNA database • Protocol on Genetic Testing added to the Council of Europe's Convention on Human Rights and Biomedicine • Renewed push for cognitive enhancement • Media reports that economic downturn leads to more women offering eggs, surrogacy • NitroMed abandons marketing of BiDil • UNESCO committee considers re-introducing treaty to ban reproductive cloning • Under pressure, Google, Microsoft pull ads for sex selection • Consumer genetic testing companies face regulators in California, New York • Australia, Japan approve cloning-based stem cell research • Netherlands government almost collapses over PGD • US Genetic Information Nondiscrimination Act becomes law • Push for payments for eggs for stem cell research in California, Singapore | <ul style="list-style-type: none"> • CGS's Gender and Justice program becomes an independent organization, Generations Ahead • CGS testifies at US House Foreign Affairs Committee hearing on international regulation of human biotech: <i>Is There an Emerging International Consensus on the Proper Uses of the New human Genetic Technologies?</i> • CGS testifies at a hearing on CIRM held by the "Little Hoover" Commission • CGS co-publishes report on geneticization and racial health disparities with Center for American Progress • CGS holds five invitational strategy sessions involving approximately 65 key colleagues in five cities • CGS staff speaking at conferences including <i>Facing Race</i> and teach-in on synthetic biology • <i>BioPolicy Wiki</i> launched, compiling laws on 8 biotechnology practices in close to 200 countries • CGS establishes presence on YouTube, Facebook, LinkedIn and Change.org • Redesigned and restructured monthly newsletter launched; <i>Weekly Views & News</i> launched • CGS op-eds, TV/radio interviews, and citations in major media outlets on DTC gene tests, race-based drugs, DNA forensic databases, dog cloning, genetically modified human embryos, sex selection, human-animal chimeras |

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| <p>2009</p> | <p>2009</p> | <p>2009</p> |
| <ul style="list-style-type: none"> • ATrun, an anti-clotting drug made from the milk of genetically engineered goats, receives FDA safety clearance • PGD used to screen an embryo for the breast-cancer version of the BRAC1 gene • DNA contamination of swabs found to have confused German police for 15 years • Genome-wide association studies criticized for lack of effectiveness in identifying links to diseases • First transgenic (fluorescent) dogs created in Korea, and marmosets in Japan • Cost of genome sequencing continues to fall; \$1000 genome promised in two years • UCLA researchers produce precursors to human sperm from induced pluripotent stem cells, which in turn are reprogrammed from normal body cells • Live mice are produced from induced pluripotent stem cells • At least two companies apply for permission to conduct clinical trials using human ESCs • Efforts continue to use cloning and/or genetic modification to save endangered species or revive extinct ones • Three more teams of researchers create cloned human embryos, but fail to derive stem cells from them | <ul style="list-style-type: none"> • A Los Angeles woman gives birth to octuplets after IVF, is quickly dubbed “Octomom” by the media, and provokes a debate about guidelines & regulation • President Obama announces new federal policies on stem cell research and reproductive cloning • California’s “Little Hoover” Commission issues its legislature-requested report on CIRM; it reflects a number of concerns voiced in invited CGS testimony • Montana bans human cloning • A Los Angeles fertility clinic announces it will screen embryos for eye, hair and skin color; backs down after a storm of protest • “Singularity University” announced • Consumer market for genetic tests continues to grow • ACLU files lawsuit against Myriad’s breast cancer gene patent on behalf of scientific organizations, women’s health organizations, breast cancer patients, others • NIH issues guidelines for federal funding of embryonic stem cell research, allowing use of embryos created but not needed for fertility treatment • President’s Council on Bioethics disbanded; later, Presidential Commission for the Study of Bioethical Issues announced • Laws against reproductive human cloning renewed in Israel • New York stem cell research program approves payments for women to provide eggs for stem cell research • Growth of forensic DNA databases accelerates at both federal and state level | <ul style="list-style-type: none"> • CGS meets, by invitation, with members of the Obama transition team in Washington DC • CGS publishes recommendations for the new presidential administration, <i>Responsible Federal Oversight of the New Human Biotechnologies</i> • Tarrytown Meetings Steering Committee established and meets at conference venue; organizing for inaugural Tarrytown Meeting ramps up • CGS urges New York stem cell research program not to approve payments for eggs for stem cell research and publishes op-ed in <i>Newsday</i> • With other public interest groups, CGS files an amicus brief in the ACLU lawsuit challenging human gene patents; publishes invited article on human gene patents in <i>The American Interest</i> • CGS helps derail offer by LA fertility clinic to screen embryos for eye, hair and skin color; staff quoted in national news outlets • CGS staff are widely cited in national news reports on birth of IVF octuplets, and write several invited commentaries on the need for public policy • CGS calls for Congressional hearings on regulation of the US fertility industry • CGS launches invited blog on <i>Psychology Today</i> site and establishes its Twitter feed • CGS office moves from Oakland to Berkeley • CGS holds invitational briefing in Washington DC on international policies addressing human biotechnologies, in collaboration with the Johns Hopkins School of Advanced International Studies and Consortium for Science, Policy and Outcomes • CGS op-eds, TV/radio interviews, and citations in major media outlets on topics including ART regulation, sex and trait selection, race and biotechnology, genetic tests, gene patents, transgenic primates progressive bioethics, stem cell research policy |

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| <p>2010</p> | <p>2010</p> | <p>2010</p> |
| <ul style="list-style-type: none"> • Scientists at Stanford turn skin into nerve cells without any intermediate step • Continued discussion of re-creating Neanderthals, also other extinct and endangered species • US horse racing authorities refuse to allow the registration of clones • Unexpected deaths of genetically modified cows that were intended to generate human follicle stimulating hormone (New Zealand) • A team led by Craig Venter synthesizes a complete bacterial genome and uses it to take over a cell; scientific critics insist this is not a new life form or created from scratch, others raise ethical objections • Accuracy of DTC gene tests questioned after reports of lab mistakes • A decade after the initial Human Genome Project announcement, some are disappointed with the lack of medical treatments derived from it • The arrest of a serial killer in L.A. as a result of familial DNA search sparks calls for increased use of the technique • Reproductive tourism continues globally, drawing increased attention but little regulation • Cost of full-genome sequencing continues to plummet, drops below \$10,000 • First patient treated in clinical trial based on embryonic stem cells | <ul style="list-style-type: none"> • New York becomes the latest jurisdiction to permit the controversial familial matching of DNA for forensic evidence • Sex ratios clearly affected by selection in countries around the world, especially in East Asia • Laws against reproductive human cloning renewed in Russia • Federal district court rules that human genes cannot be patented; appeals attract many amicus briefs; US Justice Department files brief apparently contradicting US Patent Office policy by favoring limits on patents • UK forensic DNA database, previously ruled illegal by EU, becomes an election issue; new government pledges reform • Canadian Assisted Human Reproduction agency beset by controversy as board members resign without comment • Doubts are raised about the validity of stem cell patents owned by WARF and licensed by Geron; they are upheld, then overturned, and remain in question • Walgreens plans to sell DTC test kits until FDA complains • GAO investigation of DTC gene testing industry concludes that companies mislead customers • UC Berkley offers controversial gene tests to incoming students. Calif Health Department rules they can't release results to students and the program is scaled back • EU temporarily bans animal cloning for food production, but allows imports of food derived from the offspring of clones • UK announces regulatory changes, abolishing the HFEA and transferring its duties to other bodies as yet unspecified • Robert Edwards wins Nobel Prize for development of IVF • Presidential Bioethics Commission holds hearing on synthetic biology | <ul style="list-style-type: none"> • July 27-29: The inaugural Tarrytown Meeting, the first of three planned annual events. 105 invited advocates, scholars and others meet to consider what can be done to ensure that human biotechnologies support rather than undermine social justice, human rights, ecological integrity and the common good. Tarrytown Meeting website established to serve as networking hub for the series and beyond. Videos and reports prepared. Planning begins for Tarrytown 2011. • CGS plays key role in stopping controversial UC Berkeley offer of gene tests to incoming students • CGS collaborates with Mothers for a Human Future, Jamestown Project and Public Conversation Project on BioConversations.org • CGS speaks at international consultation on assisted reproductive technologies organized by SAMA: Resource Group for Women & Health in New Delhi • CGS speaks at symposium convened by Center for American Progress and <i>Democracy</i> to mark publication of MIT Press anthology with chapter authored by CGS assoc director • CGS presents at UC Hastings School of Law symposium, "Choice in the 2^{1st} Century? Regulating Reproductive Technologies" • CGS submits comments on synthetic biology to the President's Bioethics Commission • CGS op-eds, TV/radio interviews, and citations in major media outlets on topics including personal genetic testing, DNA forensics, patents on human genes, potential new methods for human genetic modification, ART public policy, progressive biopolitics |

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| <ul style="list-style-type: none"> • 2011 | <ul style="list-style-type: none"> • 2011 | <ul style="list-style-type: none"> • 2011 |
| <ul style="list-style-type: none"> • Geron Corp. abandoned the field of embryonic stem cell research and the first clinical trial ever approved. CIRM had authorized a \$25m loan to pursue the trial; the \$6m spent was paid back. • A new cloning technology to make ESCs was announced. Like previous methods, it would require large numbers of women's eggs. • Research continued on induced pluripotent stem cells, though reports of compatibility issues and unexpected mutations dampened optimism. • First success reported in gene therapy for hemophilia; also, resistance to HIV infection in mice was reported; and the experimental use of stem cells to reverse liver disease, also in mice. • "Proof of principle" reported for testing full fetal genomes via maternal blood tests very early in pregnancy; a prenatal test for Down Syndrome went on sale (via doctors). • A California fertility clinic offers PGD for sex selection without requiring that the family already have at least one child of the other sex. • Gene tests purported to identify athletic talent were marketed to the general public. • Data handling and interpretation rather than sequencing now said to be the bottleneck for genomic personalized medicine. • Human DNA contamination seen in many nonhuman genome databases. • Using synthetic biology, a Harvard team efficiently altered <i>E. Coli's</i> genetic code; synthetic DNA was added to yeast cells. • Cats were genetically modified, for AIDS research; Hwang Woo-suk cloned coyotes; and New Zealand researchers abandoned animal cloning because of the death rate. | <ul style="list-style-type: none"> • Sex selection became a major news story. Exploiting these concerns, opponents of abortion rights introduced a federal bill to ban sex-selective and "race selective" abortions. • Cross-border commercial surrogacy drew continued attention. Several countries postponed or withheld citizenship for children born to foreign surrogates. • In California, the FBI uncovered a baby-selling scheme involving prominent surrogacy lawyers; sentencing of principals has begun. • The rights of "donor offspring" and gamete donor anonymity became a public issue, sparked by a British Columbia ruling and by disclosure of sperm donors with up to 150 children. • The UK agreed to comply with a European Court ruling and, in principle, to delete the DNA of innocent people from its forensic database. • Controversy in the US over collecting DNA from people arrested but not convicted. Familial searching boosted by success in California, and for its minor role in identifying Osama bin Laden. • The President's bioethics commission reviewed international clinical trials, following up on scandal in Guatemala. • An FDA panel recommended that genetic testing always be under a doctor's supervision, but firm rules have not been implemented. • Proposals to compensate victims of eugenic sterilizations in North Carolina gained national attention. Eugenics archives in both Philadelphia and London were published online. • An appeals court reversed a lower court ruling against Myriad in the gene patent lawsuit, but ACLU and others are appealing to the Supreme Court. In Europe, the Court of Justice denied patents for some stem cell techniques. • In California, Robert Klein stepped down as chair of CIRM and was succeeded by Jonathan Thomas, whose large salary attracted criticism. Thomas promoted state funding of businesses developing stem cell-based therapies. | <ul style="list-style-type: none"> • Some 121 invited advocates, scholars, scientists, artists and others met July 25-27 for the second annual Tarrytown Meeting. Sessions built on and significantly expanded and enhanced the discussions held at the inaugural Tarrytown Meeting in 2010. Plenaries highlighted international concerns, the need for better education about human genetics, and public communication skills training. • CGS hosted an invitational discussion with Helen Wallace of GeneWatch UK about medical and forensic DNA databases, and the challenges they pose for privacy, justice and human rights. • CGS hosted an invitational discussion with Mara Hvistendahl of <i>Science</i> about her widely reviewed book on sex selection, <i>Unnatural Selection</i>. • CGS organized two talks by noted author Dorothy Roberts about her book on race and genetics, <i>Fatal Invention: How Science, Politics, and Big Business Re-create Race in the Twenty-first Century</i> (in Berkeley, co-sponsored by Generations Ahead, and in LA, co-sponsored by Ms). • CGS staff members quoted by print, radio, television, and on-line media on a diverse range of topics. • Op-eds and articles by CGS staff, fellows and consultants appeared in professional journals, edited volumes, popular magazines, and major blogs. • CGS staff and fellows gave invited talks and lectures at professional, educational and public venues. • CGS staff invited by <i>Psychology Today</i> to publish on their site. |

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| • 2012 | • 2012 | • 2012 |
| <ul style="list-style-type: none"> • The Nobel Prize in Physiology or Medicine went to John Gurdon for cloning a frog and to Shinya Yamanaka for discovering how to reprogram adult cells into induced pluripotent stem cells. • Mitinori Saitou and colleagues in Kyoto created mice by using sperm and eggs grown from iPS cells, though supplied ovaries were also needed. • Scientists in Oregon combined sperm with the nuclear DNA from one egg and the mitochondrial DNA from another to generate blastocysts, in a process they call maternal spindle transfer. Scientists in Newcastle undertook a similar technique called pronuclear transfer, as did the Columbia Medical Center along with the New York Stem Cell Foundation with what they call nuclear genome transfer. The goal of these techniques is to allow women with mitochondrial disease to have an unaffected child, but they are currently illegal because they require inheritable genetic modification. • Whole genome sequencing became cheaper and more viable; it was offered to medical students in a NY class and was developed by various DTC companies. • Non-invasive prenatal diagnostic testing, which analyzes fetal DNA circulating in the mother's blood early in pregnancy, was shown to be feasible. • The number of IVF babies worldwide reached five million. • Reproductive tourism continued to grow, with India and the US as favored, if problematic, locations. • Revelations surfaced of forced sterilizations around the world and within CA's prisons. | <ul style="list-style-type: none"> • The White House unveiled a "National Bioeconomy Blueprint" that relied heavily on synthetic biology. • A broad coalition of over 100 civil society organizations developed Principles for the Oversight of Synthetic Biology. • The main players in an illegal "baby-selling ring", including a prominent surrogacy attorney, were sentenced to prison. • North Carolina's Senate blocked payments supported by the governor and approved by the House for victims of eugenic sterilizations, though compensation may be considered again. A Virginia lawmaker considered symbolic reparations. • Many countries and U.S. states greatly expanded their DNA police databases, by taking DNA from everyone who is arrested even if not convicted, or from all who are convicted, even for misdemeanors; the issue has been in and out of the courts with critics saying these practices violate the 4th amendment. • The American Society for Reproductive Medicine removed its experimental label from egg freezing, though only for women at risk of losing their fertility due to medical treatments. • In the UK, the HFEA held a public consultation about the social and ethical implications of allowing mitochondrial replacement techniques to move to human clinical trial. • The Institute of Medicine issued a report criticizing the California Institute for Regenerative Medicine for conflicts of interest built into the agency's governance structure. • Stem cell scams were common, with Celltex and RNL Bio mired in controversy and Celltex a subject of FDA concern. • The Supreme Court agreed to hear a challenge to human gene patents held by Myriad Genetics in a suit brought by the ACLU on behalf of research organizations, women's health groups, and others. | <ul style="list-style-type: none"> • The third and final annual Tarrytown Meeting was held July 23-25 with 101 participants. The incorporation of a track system allowed scholars, activists, and artists to delve into specific biopolitical topics in depth and develop action items; plenary sessions allowed everyone to come together and furthered the sense of the collective Tarrytown network. • CGS co-hosted an invitational strategy session in which some 30 key advocates and scholars focused on the ongoing implications of eugenic practices and ideologies in CA, followed by a public symposium at the UC Berkeley law school which drew over 200 participants and was webcast live. • CGS inaugurated its "Talking Biopolitics" online webinar series of interviews with noted colleagues. • CGS hosted a press briefing on synthetic biology, discussing the proposal of a new synthetic biology lab in Richmond, CA. • Marcy Darnovsky and several colleagues presented on emerging human biotechnologies at the Psychosocial Workshop. • Marcy Darnovsky delivered invited comments to the IOM Committee on a review of CIRM. • CGS joined other public interest organizations in an amicus curiae brief with the U.S. Federal Circuit Court of Appeals and two amici curiae briefs to the Supreme Court in the case on human gene patents against Myriad Genetics and the US Patent and Trade Office. • CGS filed a response to the UK HFEA's consultation on mitochondria replacement and encouraged the participation of 17 scholars and activists from around the world. • CGS staff gave invited talks and lectures at professional, educational and public venues including UC Berkeley, the Applied Brilliance Conference, and the U of Maryland's Biopolitical Constitution Roundtable. • CGS staff members were quoted by print, radio, television, and on-line media regularly and on a diverse range of topics. • Op-eds and articles by CGS staff and fellows appeared in professional journals, edited volumes, popular magazines, and major blogs. • CGS's social media presence rose sharply with 144 Biopolitical Times blog posts and greatly increased interaction through its website, newsletter, Facebook, Twitter, YouTube and Google+. |

| • Technologies & Applications | • Politics & Policies | • CGS Activities |
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| <ul style="list-style-type: none"> • 2013 | <ul style="list-style-type: none"> • 2013 | <ul style="list-style-type: none"> • 2013 |
| <ul style="list-style-type: none"> • 23andMe is awarded a “designer baby” patent that would let users investigate the kinds of children they might have with each other; says it has no intentions of using the technology. • The CRISPR/Cas system attracts attention as a more precise gene editing tool; Editas Medicine launches to commercialize it. • Oregon scientists successfully create first human embryonic stem cells using cloning technique, somatic cell nuclear transfer. • Synthetic artemisinin and vanilla marketed; “glowing plants” offered as part of a Kickstarter campaign. • Newcastle researchers clone an extinct frog, but the embryos die after several days. • Proposals for “de-extinction” via cloning of mammoths, Neanderthals, other species gain attention. • State and federal DNA police databases expand; more states opt for including arrestees or people convicted of low-level crimes. • Stem cell scams unfold in Texas, Italy & the Philippines. • BGI’s Cognitive Genomics Project works on “uncovering” the genetic basis of intelligence. • Researchers show that anonymity of those whose genetic sequences are in databases can’t be guaranteed. • Non-invasive prenatal genetic testing is heavily marketed; disability rights advocates raise concerns. • Google launches Calico to extend the human life span; hires Ray Kurzweil as a Director of Engineering. • UK researchers genetically modify mouse sperm & find functional changes persisting through 3 generations. • New evidence of epigenetics: mice studies show learned fear can be inherited through multiple generations. • Early success in gene therapy trials to repair heart damage and blood cancers. | <ul style="list-style-type: none"> • US Supreme Court rules unanimously in <i>Molecular Pathology v. Myriad Genetics</i> that naturally occurring human genes cannot be patented but that cDNA can. • US Supreme Court rules in <i>Maryland v. King</i> that police can take DNA from an arrestee for a serious offense prior to conviction. A California Appeals Court case could complicate this ruling. • US Supreme Court declines to intervene to block federal funding of embryonic stem cell research. • A California bill that would have expanded the market for women’s eggs is vetoed by Governor Brown. • FDA orders 23andMe to stop making health predictions. • UK Dept of Health says it will draft regulations to change UK law against human inheritable genetic modification to allow “mitochondrial replacement” techniques. • FDA announces a meeting to discuss the feasibility of the same techniques moving to human clinical trials. • Professional organizations ACMG, AAP, ACOG and NSGC release controversial policy statements on genetic testing of children, reporting of incidental findings in genetic tests, and guidelines for noninvasive fetal gene tests. • A consortium called the global alliance of 69 institutions in 13 countries was created to promote the free flow of genetic information. • North Carolina approves compensation payments for surviving victims of eugenic sterilizations. • Investigation reveals nearly 150 women illegally sterilized in California prisons between 2006 and 2010. • Australian-based Virtus Health becomes first IVF company to be publicly traded on the stock market. • India limits surrogacy to heterosexual married couples. Fertility companies open markets in Mexico and Thailand. • Anti choice policy makers introduce sex-selective abortion bans to undermine women’s reproductive rights. | <ul style="list-style-type: none"> • Founding Executive Director Richard Hayes steps down; former Associate ED Marcy Darnovsky takes the helm at beginning of year. • CGS co-organizes full-day public symposium <i>Future Past: Disability, Eugenics and Brave New Worlds</i> at SF State University. • <i>Talking Biopolitics</i>: six online conversations with key thinkers and writers. • CGS joins SynBioWatch consortium and co-organizes 4 public events on synthetic biology and human biotechnology. • The Tarrytown Meetings website is made publicly accessible; report on the Tarrytown Meetings initiative is published. • Opposition to “3-person IVF,” risky techniques that would constitute human inheritable genetic modification, includes letter to FDA with more than 250 signers; articles in <i>Nature</i>, <i>The European</i>, and <i>Huffington Post</i>; two press statements; numerous appearances on radio, TV, and news stories; letter to the Parliamentary Assembly of the Council of Europe. • CGS helps defeat fertility industry-sponsored California bill to permit researchers to pay women for eggs and undermine protections; testifies at Senate Health Committee. • CGS files an amicus brief with SCOTUS in <i>Association for Molecular Pathology v. Myriad Genetics</i>, arguing that human genes are “common heritage of humanity” and should not be patent eligible. • CGS and colleagues persuade CIRM’s Standards Working Group to reject a proposal to reverse current policy and expand the market in women’s eggs. • CGS launches the invitational Assisted Reproductive Working Group for reproductive justice, health, and rights advocates. • CGS publishes in <i>NY Times</i>, <i>Wall St Journal</i>, <i>Sci American</i>, <i>LA Times</i>, <i>Nature</i>, others; is cited in more than 130 news stories. • Online resources include blogs at <i>Biopolitical Times</i> and <i>Psychology Today</i>, a bi-weekly news digest and bi-monthly newsletter, expanding social media presence on Twitter, Facebook, Google+, and YouTube. |

| Technologies & Applications | Politics & Policies | CGS Activities |
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| 2014 | 2014 | 2014 |
| <ul style="list-style-type: none"> • STAP cells are presented in January as a stem cell paradigm changer, but no one can reproduce the results. The relevant papers are retracted and in December the lead author resigned. • Two more research teams produce ESCs by nuclear transfer. • Stem cells are moving into clinical trials, mostly with adult stem cells but also with the first iPSC-based trial. • Facebook and Apple announce a \$20,000 benefit for their female employees toward elective egg freezing; informational “egg-freezing parties” take place in New York and California. • A study of 300,000 births finds slightly greater risk of complications for IVF babies; several medical associations push for elective single embryo transfers to reduce risks. • The first baby is born following a womb transplant. • An “undercover” assessment of 5 early prenatal gene test labs finds a need for better quality control, and an investigative journalist shows NIPT to be much less accurate than claimed. • More people travel to the US for social sex selection via IVF/PGD. • The first baby is born after having his whole genome sequenced in utero. Proposals for whole-genome newborn testing gain steam. • Lee Silver and others launch GenePeeks, which uses DNA of sperm donors and recipients to create “virtual babies” with desirable traits. • Concrete evidence emerges about errors in DTC gene test interpretation causing potential harm. • 23andMe launches its tests (including the health information now prohibited in the US) in Canada and the UK. • The long-awaited \$1,000 genome is announced by Illumina with help from the US government, though the price tag ignores substantial hidden costs. • Craig Venter forms Human Longevity Inc. with the goal of sequencing half a million human genomes within five years. • Google sets up a cloud for your DNA, joins forces with Global Alliance, continues move into the healthcare business. • Gene-editing technique CRISPR continues to gain attention, awards and funding as various parties vie for patents. • Scientists seriously consider “gene drives” to alter genes and then deliberately spread them through the entire population of a species. • Efforts move forward to “humanize” pigs through genetic engineering to make organs for transplant into humans. • The US Dept of Defense creates a unit to pursue synthetic biology. • FBI audit of a national DNA database finds 170 profiles with errors. • First gene therapy drug is announced, with a record price tag of \$1.4 million. | <ul style="list-style-type: none"> • A series of much-publicized abuses leads Thailand’s Parliament to ban all commercial surrogacy in the country. • A white Ohio woman sues her sperm bank, alleging that the company mistakenly gave her vials from an African-American donor. • Right-wing bans on sex-selective abortion continue to be introduced in various US states and in Congress; a report by abortion rights supporters identifies six major inaccuracies in their claims. • An FDA expert committee meets in February to consider “3-person IVF” and concludes it could take decades to confirm its safety and efficacy. • The next day, the UK government issues proposed regulations to allow the techniques to be used in fertility clinics. The House of Commons and Parliament’s Science & Technology Committee later debate the issue, and at year’s end draft regulations await a vote. • North Carolina becomes the first US state to compensate its victims of eugenic sterilizations. • California Gov. Jerry Brown signs SB 1135 into law, providing protection against sterilization abuses in California prisons. • The Federal Trade Commission charges GeneLink, which served 30,000 customers, for making claims not based on science and failing to protect consumer information. • Myriad Genetics continues to suffer setbacks in its legal battles over its BRCA gene patents in the US; Australia chooses to uphold Myriad’s patents. • A California appeals court decides unanimously that the practice of requiring people arrested for felonies to submit samples of their DNA to police violates the state constitution. • The FBI is preparing to accelerate the collection of DNA profiles for the government’s massive new biometric identification database, and is hoping to use a machine that can scan DNA in 90 minutes. • CIRM celebrates its 10th anniversary without having any cures close to the clinic. Its recently departed President, Alan Trounson, provokes a conflict-of-interest scandal. | <ul style="list-style-type: none"> • CGS and Our Bodies Ourselves receive a two-year grant from the MacArthur Foundation to investigate human rights and social justice concerns about cross-border surrogacy and commercial egg retrieval. • CGS welcomes three new fellows, Diane Beeson, Lisa Ikemoto and Gina Maranto, to work with us on these issues. • CGS co-organizes a three-day forum on international commercial surrogacy in the Netherlands to help inform the work of the Hague Convention as its member states consider an agreement on international surrogacy. • In preparation for the FDA meeting to discuss “3-person IVF,” CGS sends the committee a letter, as well as a sign-on letter with more than 250 signatures; CGS’s Marcy Darnovsky testifies at the meeting and writes an op-ed for <i>The New York Times</i>. • CGS’s Marcy Darnovsky debates the ethics of “designer babies” with Nita Farahany at The Aspen Institute. • CGS’s Jessica Cussins presents on the implications of human genetic engineering at a San Antonio high school. • Other presentations CGS include talks at “The Future of Reproduction” in Washington, DC; the first Disability Rights Leadership Institute on Bioethics; Leonardo Art Science Evening Rendezvous; Global Summit on Childhood. • <i>Talking Biopolitics</i> hosts Dorothy Roberts and Jon Marks assessing reactions to former <i>NY Times</i> reporter Nicholas Wade’s new book arguing that genetic variation between races could underlie global economic, political and social differences. • <i>Talking Biopolitics</i> hosts Charis Thompson interviewed by David Winickoff about her book, <i>Good Science: The Ethical Choreography of Stem Cell Research</i>. • CGS co-organizes an event to honor the work and life of prominent sociologist Troy Duster at UC Berkeley School of Law. • There is strong reaction to CGS press statements addressing Facebook and Apple’s egg freezing “benefit”; the UK’s move toward “3-person IVF”; a safety update on “3-person IVF”; the need for the US to prohibit reproductive cloning given research developments; the need for the FDA to preserve the consensus against human germline modifications. • 107 blogs posted at <i>Biopolitical Times</i> and/or <i>Psychology Today</i>. • CGS publishes 19 articles in outlets including <i>The New York Times</i>, <i>New Scientist</i>, and <i>CNBC</i>. • CGS staff cited in print, online, TV & radio more than 140 times. • CGS’s social media presence grows considerably across Twitter, Facebook, Youtube, and Google+. |