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CGS COMMENTARY

<u>Fond Farewells and Warm Welcomes at the Center for Genetics and Society</u>

by Marcy Darnovsky

Changes are in the works here at the Center for Genetics and Society, both on our staff and our Advisory Board.



The Science and Ethics of Genetically Engineered Human DNA

by Pete Shanks

Discussion of germline genetic modification continues, most recently in the House of Representatives Research and Technology Subcommittee, Committee on Science, Space, and Technology.

UK Seeks Regulatory Advice for "Mitochondrial Replacement," Fails to Mention Cross-Generational Implications

by Jessica Cussins

How does one go about regulating the world's first cross-generational biological experiment in human germline modification? The regulating body in charge isn't exactly sure.



U.S. Bioweapons Research: Are Anthrax Lab Accidents All We Have to Fear?

by Gwen D'Arcangelis, *Biopolitical Times* guest contributor Mishaps involving loss or release of bacteria, viruses, and toxins reported by U.S. laboratories to the Centers for Disease Control number more than 200 incidents per year.



No Mjs Bebés: A Documentary on the Sterilizations of Latina Mothers at an LA County Hospital

by Jonathan Chernoguz

During the late 1960s and early 1970s, some women who went to Los Angeles County-USC Medical Center to deliver their babies went home without the ability to have children again.



NEWS

California Stem Cell Agency Symposium: 'Vague Fears' vs. Potential Genetic Alteration of Human Race

[Quotes CGS's Marcy Darnovsky]

by David Jensen, California Stem Cell Report

California's \$3 billion stem cell agency has called a high-level meeting for next fall to examine a "red-hot" issue that many researchers say could lead to alteration of the human race.

▶ Brave New Genome

by Eric S. Lander, *New England Journal of Medicine*It has been only about a decade since we first read the human genome.
We should exercise great caution before we begin to rewrite it.

CIRM Pursues "Prudent Path" Forward with Genome Editing Technologies

by Jonathan Thomas, The Stem Cellar

CIRM Board Chair Jonathan Thomas will convene a public workshop on genome editing technologies this November.

► Genetics in Medicine — Progress and Pitfalls

by Editorial, The Lancet

According to a White House statement, the "administration believes that altering the human germline for clinical purposes is a line that should not be crossed at this time."

CRISPR, The Disruptor

by Heidi Ledford, Nature News

A powerful gene-editing technology is the biggest game changer to hit biology since PCR. But with its huge potential come pressing concerns.

▶ Should We Edit the Genetic Essence of Life?

by Margaret Somerville, *The Globe and Mail*Will we create a new class-based society of the "gene rich" and "gene poor"? Is there a human right not to be designed?

Surrogate Parenting: A Worldwide Industry, Lacking Global Rules

by Ari Shapiro, NPR

The bottom line: If you're an American in the market for a surrogate — and you have money to spend — you can do it.

Human Factory Farming and the Campaign to Outlaw Surrogacy

by Mirah Riben, Dissident Voice

America is known as the most lax country for adoption and surrogacy. It has been called the Wild West for its lack of regulation of these practices. Is this a legacy we want to continue?

Switzerland, Inter-Country Surrogacy and Public Policy

by Michael Wells-Greco, BioNews

The Swiss Federal Court refused to register a male couple, who are in a civil partnership, as the legal fathers of a child born following an intercountry surrogacy arrangement.

► IVF: A Numbers Game Made Worse by Roque Clinics

by Loretta Houlahan, The Age [Australia]

A big discrepancy in the success rates of clinics is kept secret from us.

Down Syndrome Screening isn't About Public Health. It's About Eliminating a Group of People.

by Renate Lindeman, Washington Post

Testing should be used to enhance health and human well-being instead of discriminating against people based on their genetic predisposition.

► Prenatal DNA Test Patent Invalid, U.S. Appeals Court Says

by Andrew Chung, Reuters

The appeals court said the DNA's presence in the blood fell under the U.S. Supreme Court's rule against patenting natural phenomena.

► Pre-Implantation Diagnosis to be Allowed

by Jeannie Wurz, SwissInfo [Switzerland]

About 62% of Swiss voters have said yes to genetic screening of embryos before implantation in a woman's uterus.

▶ IVF isn't a Fix-All for Those Choosing to Delay Adulthood

by William Ledger, *The Age* [Australia]

Today, just 12 per cent of IVF cycles in women over 40 result in the birth of a baby.

► The Success Rates From IVF are Nowhere Near What People

Think

by Ellie Kincaid, Business Insider [Australia]

Around 40% of IVF cycles result in babies for women aged 32 and younger. Not even 10 years later, for women aged 40, that success rate is cut in half to less than 20%.

NHS Fertility Doctor Says Women 'Should Start Trying by 30' as Problems Can Take Years to Resolve

by Louis Doré, The Independent

"If a woman starts trying at 35, doctors have got to sort it out when she is already on a slippery fertility slope."

► <u>Unused Embryos Pose Difficult Issue: What to Do With Them</u>

by Tamar Lewin, The New York Times

In storage facilities across the nation, hundreds of thousands of frozen embryos — perhaps a million — are preserved in silver tanks of liquid nitrogen.

Peruvian Women Haunted by Forced Sterilization Seek State Apology

by Anastasia Moloney, Reuters

Some 350,000 women and 25,000 men were sterilized as part of the mid-1990s program.

Building the Face of a Criminal From DNA

BBC

The face of a killer constructed from DNA left at the scene of a crime: it sounds like science fiction. But revealing the face of a criminal based on their genes may be closer than we think.

Why it's so Hard to Keep Bad Forensics Out of Canada's Courtrooms

MetroNews [Canada]

"The bottom line is, we love science. We naively believe that because we can put a rover on Mars, we can identify people through blood samples...without mistake. They're not equivalent."

FBI Notifies Crime Labs of Errors used in DNA Match Calculations Since 1999

by Spencer S. Hsu, Washington Post

While the bureau has said it believes the errors are unlikely to result in dramatic changes that would affect cases, crime labs and lawyers said they want to know more about the problem.

► Amazon, Google Race to Get Your DNA into the Cloud

by Sharon Begley and Caroline Humer, Reuters

The tech giants are racing to store data on human DNA, seeking market

share in a business that may be worth \$1 billion a year by 2018.

When Your Genome Costs Less Than Your iPhone: The Beautiful, Terrifying Future of DNA Sequencing

by Jo Best, Tech Republic

Mapping the human genome was one of humanity's greatest scientific breakthroughs. Now, the cloud and supercomputing are taking it to new heights, bringing breathtaking and disturbing possibilities.

Rebooting the Human Genome

by Antonio Regalado, *MIT Technology Review*The official map of the human genome can't tell you everything about your genes. Does graph theory offer a better way?

Bill to Protect the Genetic Profiles of Californians Clears Assembly Floor – AB 170

by Christopher Simmons, California Newswire

The legislation will will allow parents to make informed decisions about allowing their newborn's blood sample to be retained and leased to researchers.

Taking Control of Our Genetic Information: Could it Go Too Far?

by Karthika Muthukumaraswam, *The Huffington Post* Up until recently, those in the technology industry and those conducting genomic research would have been considered strange bedfellows. But big data - more specifically, big genomic data - is bringing the two groups together.

► Company Aims to Democratize Genetic Tests at \$475 a Pop

by Matthew Herper, Forbes

The idea behind Invitae is that the plummeting cost of sequencing DNA using machines made by San Diego's Illumina will make it profitable to sell genetic tests at a flat rate.

'Devious Defecator' Case Tests Genetics Law

by Gina Kolata, The New York Times

The case is an effort by an employer to detect employee wrongdoing with genetic sleuthing.

First Evidence of How Parents' Lives Could Change Children's DNA

by Helen Thomson, New Scientist

For the first time, scientists have discovered a mechanism in humans that could explain how your lifestyle choices may impact your children and grandchildren's genes.

► University of Minnesota to Overhaul Research Protections

by Jennifer Couzin-Frankel, Science

More than a decade after Dan Markingson's suicide, the University of Minnesota released a 75-page document describing an effort to restructure its system and calm its critics.

Morality, Religion and Experimenting on You

by Robert Klitzman, Huffington Post

Experiments on humans have become not only more common, but more complicated and controversial, often raising profound moral dilemmas.

The Pentagon's Gamble on Brain Implants, Bionic Limbs and Combat Exoskeletons

by Sara Reardon, Nature News

DARPA is making a big push into biological research — but some scientists question whether its high-risk approach can work.

The De-Extincting Science in Jurassic World Is Right Around the Corner

by Maddie Stone, Gizmodo

The prospect of bringing back extinct creatures is looking a lot less science fictional.

A Community Bio-Tech Lab Offers a Crash Course in Designing Life — Open to the Public

by Adam Wernick, PRI

Genspace, in downtown Brooklyn, is the world's first "community bio-lab." It offers a three-class crash course in synthetic biology to anyone who is interested.

► China's Big Biotech Bet Starting to Pay Off

by Alexandra Harney and Ben Hirschler, *Reuters*Overall funding for research and development more than quadrupled to \$191 billion in 2005-13, allowing China to jump quickly on new technologies, often first developed elsewhere.

► Looking back: Daniel Callahan

by Michael Cook. BioEdge

A retrospective by one of the founders of American bioethics is a reminder of a broader and more communitarian view of the discipline.

► Radio Review: The Business of Genetic Ancestry

by Matthew Thomas, BioNews

The science is, as tends to happen, rather more nuanced than stories of descent from famous dead people.

► Ancient American Genome Rekindles Legal Row

by Ewen Callaway, Nature News

The finding seems likely to rekindle a legal dispute between Native American tribes and the researchers who want to keep studying the 8,500-year-old skeleton.

► Retractions Coming Out From Under Science's Rug

by Benedict Carey, *The New York Times*Scientists in fields as diverse as neurobiology, anesthesia and economics are debating how to reduce misconduct, without creating a police-state mentality that undermines creativity and collaboration.

Stanford Stem Cell Product, Delayed for More than a Decade, to be Tested Again

by Lisa M. Krieger, San Jose Mercury News

A quarter-century after Irv Weissman conceived a method to regenerate patients' blood-forming systems after high-dose chemotherapy, the technique is finally back in his hands - although Novartis still holds the patent.

► Mosaic Mutations May Not Be Rare

by Anna Azvolinsky, *The Scientist*Somatic mosaicism may be responsible for a larger proportion of genomic variability within humans than previously thought.

► The Bioethics of Genetic Diversity

by Xavier Symons, BioEdge

The ethical issues surrounding the protection of genetic variation in a population are examined.

