

# NEWSBYTES

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“Let us be alert to the season in which we are living. It is the season of the Blessed Hope, calling for us to cut our ties with the world and build ourselves on this One who will soon appear. He is our hope—a Blessed Hope enabling us to rise above our times and fix our gaze upon Him.” Tozer

***What could possibly go wrong? At what point will humans no longer be made in God’s image? Days-of-Noah judgment is on its way. Here’s some chilling behind the scenes context – MD***

## **Scientists Use CRISPR to Engineer a New “Superbug” that’s Invincible to All Viruses**



### **Can we reprogram existing life at will?**

To synthetic biologists, the answer is yes. The central code for biology is simple. DNA letters, in groups of three, are translated into amino acids—Lego blocks that make proteins. Proteins build our bodies, regulate our metabolism, and allow us to

function as living beings. Designing custom proteins often means you can redesign small aspects of life—for example, getting a bacteria to pump out life-saving drugs like insulin.

All life on Earth follows this rule: a combination of 64 DNA triplet codes, or “codons,” are translated into 20 amino acids.

But wait. The math doesn’t add up. Why wouldn’t 64 dedicated codons make 64 amino acids? The reason is redundancy. Multiple codons often make the same amino acid.

So what if we tap into those redundant “extra” codons of all living beings, and instead insert our own code?

A team at the University of Cambridge recently did just that. In a technological tour de force, they used CRISPR to replace over 18,000 codons with synthetic amino acids that don't exist anywhere in the natural world. The result is a bacteria that's virtually resistant to all viral infections—because it lacks the normal protein “door handles” that viruses need to infect the cell.

But that's just the beginning of engineering life's superpowers. Until now, scientists have only been able to slip one designer amino acid into a living organism. The new work opens the door to hacking multiple existing codons at once, copyediting at least three synthetic amino acids at the same time. And when it's 3 out of 20, that's enough to fundamentally rewrite life as it exists on Earth.

We've long thought that “liberating a subset of...codons for reassignment could improve the robustness and versatility of genetic-code expansion technology,” wrote Drs. Delilah Jewel and Abhishek Chatterjee at Boston College, who were not involved in the study. “This work elegantly transforms that dream into a reality.”

### **Hacking the DNA Code**

Our genetic code underlies life, inheritance, and evolution. But it only works with the help of proteins. The program for translating genes, written in DNA's four letters, into the actual building blocks of life relies on a full cellular decryption factory.

Think of DNA's letters—A, T, C, and G—as a secret code, written on a long slip of crinkled paper wrapped around a spool. Groups of three “letters,” or codons, are the crux—they encode which amino acid a cell makes. A messenger molecule (mRNA), a spy of sorts, stealthily copies the DNA message and sneaks back into the cellular world, shuttling the message to the cell's protein factory—a sort of central intelligence organization.

There, the factory recruits multiple “translators” to decipher the genetic code into amino acids, aptly named tRNAs. The letters are grouped in threes, and each translator tRNA physically drags its associated amino acid to the protein factory, one by one, so that the factory eventually makes a chain that wraps into a 3D protein.

But like any robust code, nature has programmed redundancy into its DNA-to-protein translation process. For example, the DNA codes TCG, TCA, AGC, and AGT all encode for a single amino acid, serine. While it works in biology, the authors wondered: what if we tap into that code, hijack it, and redirect some of life's directions using synthetic amino acids?

## Hijacking the Natural Code

The new study sees nature's redundancy as a way to introduce new capabilities into cells.

For us, one question was "could you reduce the number of codons that are used to encode a particular amino acid, and thereby create codons that are free to create other monomers [amino acids]?" asked lead author Dr. Jason Chin.

For example, if TCG is for serine, why not free up the others—TCA, AGC, and AGT— for something else?

It's a great idea in theory, but a truly daunting task in practice. It means that the team has to go into a cell and replace every single codon they want to reprogram. A few years back, the same group showed that it's possible in *E. Coli*, the lab and pharmaceutical's favorite bug. At that time, the team made an astronomical leap in synthetic biology by synthesizing the entire *E. Coli* genome from scratch. During the process, they also played around with the natural genome, simplifying it by replacing some amino acid codons with their synonyms—say, removing TCGs and replacing them with AGCs. Even with the modifications, the bacteria were able to thrive and reproduce easily.

It's like taking a very long book and figuring out which words to replace with synonyms without changing the meaning of sentences—so that the edits don't physically hurt the bacteria's survival. One trick, for example, was to delete a protein dubbed "release factor 1," which makes it easier to reprogram the UAG codon with a brand new amino acid. Previous work showed that this can assign new building blocks to natural codons that are truly "blank"—that is, they don't encode anything naturally anyways.

## A Synthetic Creature

Chin's team took this much further. The team cooked up a method called REXER (replicon excision for enhanced genome engineering through programmed recombination)—yeah, scientists are all about the backronyms—which includes the wunderkind gene editing tool, CRISPR-Cas9. With CRISPR, they precisely snipped out large parts of the *E. coli* bacterial genome, made entirely from scratch inside a test tube, and then replaced more than 18,000 occurrences of 'extra' codons that encode for serine with synonym codons.

Because the trick only targeted redundant protein code, the cells were able to go about their normal business—including making serine—but now with multiple natural codons free. It's like replacing "hi" with "oy," making "hi" now free to be assigned a completely different meaning.

The team next did some house cleaning. They removed the cells' natural translators—the tRNAs—that normally read the now-defunct codons without harming the cells. They introduced new synthetic versions of tRNAs to read the new codons. The engineered bacteria were then naturally evolved inside a test tube to grow more rapidly.

The results were spectacular. The superpowered strain, Syn61.Δ3(ev5), is basically a bacterial X-Men that grows rapidly and is resistant to a cocktail of different viruses that normally infect bacteria.

“Because all of biology uses the same genetic code, the same 64 codons and the same 20 amino acids, that means viruses also use the same code...they use the cell's machinery to build the viral proteins to reproduce the virus,” explained Chin. Now that the bacteria cell can no longer read nature's standard genetic code, the virus can no longer tap into the bacterial machinery to reproduce—meaning the engineered cells are now resistant to being hijacked by almost any viral invader.

“These bacteria may be turned into renewable and programmable factories that produce a wide range of new molecules with novel properties, which could have benefits for biotechnology and medicine, including making new drugs, such as new antibiotics,” said Chin.

Viral infection aside, the study rewrites what's possible for synthetic biology.

“This will enable countless applications,” said Jewel and Chatterjee, such as completely artificial biopolymers, that is, materials compatible with biology that could change entire disciplines such as medicine or brain-machine interfaces. Here, the team was able to string up a chain of artificial amino acid building blocks to make a type of molecule that forms the basis of some drugs, such as those for cancer or antibiotics.

But perhaps the most exciting prospect is the ability to dramatically rewrite existing life. Similar to bacteria, we—and all life in the biosphere—operate on the same biological code. The study now shows it's possible to get past the hurdle of only 20 amino acids making up the building blocks of life by tapping into our natural biological processes.

Next up, the team is looking to potentially further reprogram our natural biological code to encode even more synthetic protein building blocks into bacterial cells. They'll also move towards other cells—mammalian, for example, to see if it's possible to compress our genetic code.

# G7 to donate 1 billion COVID-19 vaccine doses; PM Johnson calls to vaccinate the entire world

watch.org

US President Joe Biden laughs while speaking with Britain's Prime Minister Boris Johnson during their meeting, ahead of the G7 summit, at Carbis Bay, Cornwall, Britain June 10, 2021. (REUTERS) (photo credit: REUTERS)



REUTERS)

CARBIS BAY, England, June 11 - British Prime Minister Boris Johnson expects the Group of Seven to agree to donate 1 billion COVID-19 vaccine doses to poorer countries during its summit starting on Friday, and help inoculate the world by the end of next year.

Just hours after US President Joe Biden vowed to supercharge the battle against the coronavirus with a donation of

500 million Pfizer shots, Johnson said Britain would give at least 100 million surplus vaccines to the poorest nations.

Johnson has already called on G7 leaders to commit to vaccinate the entire world by the end of 2022 and the group is expected to pledge 1 billion doses during its three-day summit in the English seaside resort of Carbis Bay.

## Welcome Back To School - Real-Time Crime Center To Monitor Students Live



How does a school committee respond to a year of remote student learning? How will the Springfield, MA School Committee respond to post-COVID schooling?

Now that public schools are reopening (just in time for summer vacation) what are officials worried about? Is it face-to-face learning? Is it in-person interactions with students? Nope, it is mass surveillance and how to let Real-Time

Crime Centers (RTCC) monitor students under the guise of public safety.

As MassLive reports, the decision to let the Springfield Police Department monitor students in real-time "feels tone deaf."

The school committee took a half hour to decide that the best way to make students and faculty feel safe is to allow Big Brother to monitor them in real-time.

It is becoming more apparent to even casual observers, that our public schools resemble our prison system. Our schools are increasingly tied to the school-to-prison pipeline with CCTV cameras watching a students' every movement; to weapons detectors at entrances, to vape detectors in bathrooms, and to police officers waiting for students to commit an infraction.

Will tying school surveillance cameras to RTCCs be the proverbial straw that broke the camel's back?

The Springfield Police Department's Real-Time Analysis Center (R-TAC) uses BriefCam's surveillance technology to monitor the public and students. As the video explains, the police use BriefCam's license plate readers to ID and track innocent motorists without a warrant. BriefCam is also well-known for its facial recognition capabilities.

"Users can rapidly pinpoint people of interest, create scalable watchlist management and powerful rule configuration for real-time alerts in critical, time-sensitive situations using external image sources, digital images extracted from video, and pre-defined watchlists. The ability to detect, track, extract, classify, catalog and alert on persons-of-interest appearing in video surveillance footage in real-time."

Is it a coincidence that police department RTCCs are closely linked to Fusion Centers?

As EFF's "Atlas of Surveillance" points out, RTCC's are part of Homeland Security's 79 Fusion Center national network.

"Technologies such as networked cameras, automated license plate readers, and gunshot detection are deployed around the clock, as are the tools to process this data, such as predictive policing software and AI-enhanced video analytics."

"The technologies, working in concert, are being consolidated and fed into physical locations called Real Time Crime Centers. These high-tech hubs, filled with walls of TV monitors and computer workstations for sworn officers and civilian analysts, not only exploit huge amounts of data, but also are used to justify an increase in surveillance technology through new data-driven or intelligence-led policing strategies."

The new proposal allows Springfield's RTCC to log into the school's surveillance system without a warrant.

"Under the proposal, police personnel at the R-TAC would be able to log onto the school system and view footage immediately. Walsh said the proposal includes strict guidelines -- limiting such use of the system to emergency situations, and limiting access to analysis center staff and a group of detectives and supervisors. Police will be required to log each time they access the system, documenting who signed in and why."

The Springfield police cannot wait to use BriefCam to monitor students. "There's a lot more it can do. It's a phenomenal tool," said William Schwarz, director of the Springfield Police Crime Analysis Unit, which oversees the R-TAC."

As school committee member LaTonia Monroe Naylor warned, "the policy has too many gray areas that need clarification." What constitutes an emergency situation? "It doesn't have to be a 911 call," Naylor said. Is it an emergency if someone is in a school with a gun? Is a fight in a hallway an emergency? What about someone on school grounds selling drugs? "What we call surveillance, they call an 'emergency situation,'" she said.

## G7 affirms anti-capitalist 'Great Reset' to exploit COVID crisis

*British PM: 'Build back better' in 'greener, gender neutral, more feminine way'*

Affirming the globalist agenda of the "Great Reset of capitalism," which has been adopted by the Biden administration, British Prime Minister Boris Johnson told leaders of the G7 nations Friday that they must "build back better," remaking their economies in a "greener," "more gender neutral and perhaps a more feminine way."

Johnson said "it is vital that we don't repeat the mistakes" of the 2008 economic crisis. "The recovery was not uniform across all parts of society," he said. "And I think what's gone wrong with this pandemic ... is that the inequalities may be entrenched." The British leader said that as the economies of the world powers recover, "we need to make sure that we level up across our societies and we build back better."

"Build back better" was coined by the World Economic Forum – known for its annual Davos meeting of top political and business leaders – before Joe Biden adopted it as a slogan for his plan for economic recovery after the COVID-19 pandemic. Last year, WEF founder Klaus Schwab called for exploiting the pandemic with a "Great Reset of capitalism." At WEF's virtual meeting in January featuring its Great Reset initiative, a Fortune 500 CEO affirmed WEF's assertion that "capitalism as we have known it is dead." "This obsession we have with maximizing profits for shareholders alone has led to incredible inequality and a planetary emergency," said Marc Benioff, the CEO of Salesforce, which is regarded as a pioneer of cloud computing.

WEF and its allies advocate "stakeholder capitalism," meaning that rather than pursuing profits, companies would "pursue the wellbeing of all people and the entire planet. Ahead of the January meeting, Schwab published an op-ed about the need for a "Davos Manifesto" for "a better kind of capitalism."

"Business leaders now have an incredible opportunity. By giving stakeholder capitalism concrete meaning, they can move beyond their legal obligations and uphold their duty to society," the WEF founder wrote. "They can bring the world closer to achieving shared goals, such as those outlined in the Paris climate agreement and the United Nations Sustainable Development Agenda. If they really want to leave their mark on the world, there is no alternative."

Last November, WND reported, former Secretary of State John Kerry and European Commission President Ursula von der Leyen said in a WEF panel that a Joe Biden presidency would help propel the "Great Reset" plan. "The notion of a reset is more important than ever before," Kerry said. "I personally believe ... we're at the dawn of an extremely exciting time."

Kerry said Biden was ready to rejoin the Paris Climate Accord, which would help drive the "Great Reset." But rejoining Paris is "not enough," Kerry said.

"The Biden administration will focus on every sector of the American economy," he said. "There will be a 2035 goal to achieve net neutrality with respect to power and production.

Kerry said the U.S. is "ready to come back in and help to lead and raise the ambition in Glasgow to accelerate this incredible capacity for a transformation in the private sector.

On Friday, the White House published a statement announcing Biden was set to meet with G7 leaders "to discuss ways to forge a more fair, sustainable, and inclusive global economy that meets the unique

challenges of our time." Among the White House initiatives toward that end is pushing for a "global minimum tax" on multinational corporations of at least 15%. WEF's January meeting was kicked off by a speech from China's president and general secretary of the Communist Party, Xi Jinping.

Schwab introduced Xi by commending China for its "many initiatives" undertaken "in the spirit of creating a world where all actors assume a responsible and responsive role."

"Mr. President, I believe this is the time to reset our policies and to work jointly for a peaceful and prosperous world," Schwab said.