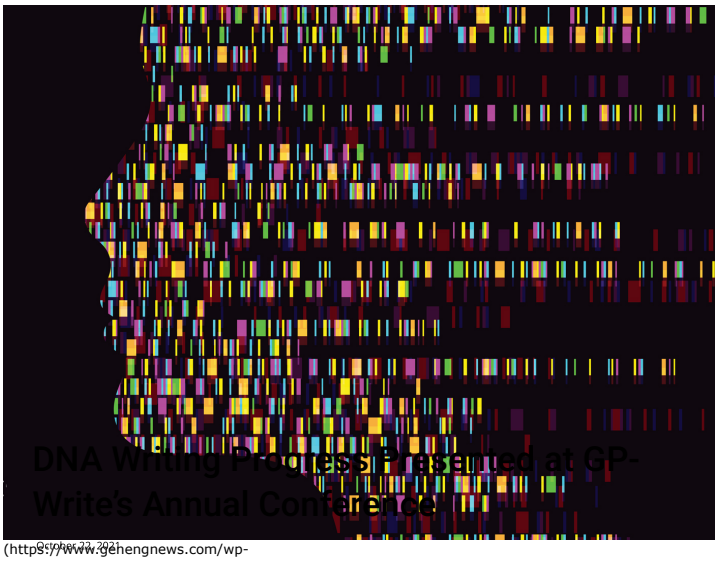

(https://www.genengnews.com/wp-content/uploads/2020/12/Dec2_2020_Getty_1155935470_GenomeMap.jpg)
Source: Olena Yepifanova/Getty Images

Launched in 2015, Genome Project-write (GP-write) is holding its virtual conference on Thursday and Friday of this week. The group, with a focus on writing DNA, was conceived as a sequel to the Human Genome Project. They stated that writing DNA is the "future of science and medicine, and holds the promise of pulling us forward into a better future."

The capability to write DNA code, according to GP-write, remains limited. This, in turn, restricts the ability to understand and manipulate biological systems. GP-write, they noted, "will enable scientists to move beyond observation to action, and facilitate the use of biological engineering to address many of the global problems facing humanity."

But the group consists of much more than sequencing experts. They are synthetic biologists and geneticists from all walks of academia and industry. They hope to progress the goal of driving dramatic cost reductions and expedite whole-genome writing and redesign over the next decade.

Since the 2019 meeting, the GP-write Technology Launch has produced the GPW CAD, a next-generation software for the whole-genome design of any species' genome. This platform was released and demonstrated by Douglas Densmore, PhD, associate professor, electrical and computer engineering, Boston University. The CAD enables technology for advancing genome writing capabilities and will serve as a foundational platform in GP-write's international foundry and incubator.

"GP-write's Tech Launch now culminates in the roll out of a foundational genome design platform—a 'one-stop shop' in the newly-minted GP-write international foundry and incubator for the design, assembly, and testing of whole genomes," noted Amy Cayne Schwartz, GP-write president and general counsel.

A researcher will soon be able to leverage the platform to design a genome, directly order synthetic DNA from a GPW industrial partner, and select a foundry for assembly and testing.

"This is a tremendous leap forward for the engineering biology community and GP-write Consortium," said Schwartz. "We are proud to partner with global leaders on our Industrial

he road toward more facile writing of genomes."

ed closely with industry partners and is expanding their reach in that area. logies is the most commercially viable platform to use synthetic DNA for rage and computation. Future integration could provide a next-gen solution nts of genomic data generated by GP-write software. Other company gilent Technologies, Ansa Biotechnologies, Twist Bioscience, and the gene-companies Inscripta and Lattice Automation.

rship with SOSV's IndieBio, the world's leading biotech startup ram, will be announced and formalize the roll out of GP-write's virtual p ecosystem. Together, the GP-write and IndieBio teams will vet and select advance genome writing capabilities, an important step toward achieving : to drive down the cost of writing and testing whole genomes 1000-fold le.

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Reducing the cost and ease of design, they say, will have high utility and provide broad accessibility. Students, citizen scientists, professionals, and industry will soon be able to learn how to design genomes from scratch and receive feedback on the functional consequences of these designs. Tools to manage data among a distributed community will enable learning from others' design processes through shared results.

As biosecurity is a top priority, DNA Script will host a biosecurity roundtable on Friday to engage collaborative discussion about the implications of benchtop DNA synthesis for biosecurity, and the measures companies should consider when using enabling genome engineering technologies such as GP-write's design platform and DNA Script's printers.

Once set in motion, George Church PhD, professor of genetics at Harvard Medical School, and one of the scientific leaders of GP-write, noted that GP-write's genome design software, foundry, and incubator model "will move the field of genome engineering closer to uncovering complex biological behavior and engineer organisms to correct genetic mutations that cause crippling disease, reverse damage to the environment, and create a more sustainable future in agricultural biotechnology."

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