Scale Bio Draws Nearly 1 Billion Cells in Global Health and Disease Research Challenge

Company names winning projects for the 100M cell challenge demonstrating the power of single cell omics across diverse applications, from global health initiatives to therapeutic discovery

Scale Bio is expanding support to all qualifying projects

SAN DIEGO, CALIF., November 7, 2024 – In an exciting moment for genomics research, Scale Biosciences (Scale Bio) announced today the winning projects of the 100 Million Cell Challenge representing more than a dozen projects addressing critical challenges in global health — from childhood respiratory diseases to cancer disparities. These projects, chosen from 147 proposals submitted across 27 countries, represent a total of 50 million cells and will be fully subsidized by the Chan Zuckerberg Initiative (CZI). The selected projects span a remarkable range of applications, from expanding the first global atlas of pediatric health to investigating population-specific differences in cancer outcomes. Collectively, they demonstrate how increased scale in single cell analysis can transform our understanding of human biology and disease.

The overwhelming response from the scientific community—with submitted projects totaling nearly one billion cells—demonstrates the tremendous demand for accessible, large-scale single cell analysis. In recognition of this unprecedented interest and the high quality of submissions, Scale Bio will expand the program to enable support for all eligible researchers, representing more than 600 million cells of submitted projects.

The 100 Million Cell Challenge reflected unprecedented industry collaboration between Scale Bio, CZI, Ultima Genomics, NVIDIA and Bioturing, a new partner. To support this ambitious initiative, BioTuring will offer all participating researchers complimentary access to their advanced analysis platform, BBrowserX, empowering the researchers with cutting-edge tools and accelerating their path to scientific insights.

"The overwhelming success of this program in attracting a diverse array of projects totaling nearly a billion cells is a testament to the pent-up demand for single cell omics solutions, and the opportunity to unlock new insights when technical and cost barriers are removed," said Giovanna Prout, President and CEO of Scale Bio. "When researchers can analyze millions of cells instead of thousands, we unlock entirely new possibilities for understanding human health and disease. With Scale Bio’s innovative QuantumScale workflow and ScalePlex multiplexing technology, we are enabling many more researchers to tackle single cell omics research projects at unprecedented scale.”

The 100 Million Cell Challenge is possible due to Scale Bio’s dual innovations: QuantumScale, a single cell RNA sequencing technology, and ScalePlex, a novel multiplexing technology that enables seamless sample pooling. Together, these technologies enable researchers to multiplex samples and prepare up to 2 million cells in parallel at a breakthrough price point of 1 cent per cell. The purpose-built innovations are designed for simplicity, flexibility and quality, with a clear multiplexing and single cell protocol that can be done with standard laboratory equipment and limited technician training.

"The scale of these single cell omics projects will enhance Chan Zuckerberg CELL by GENE Discover – a platform CZI built where scientists can explore curated cellular data and discover new information – making it an even more powerful resource for the global research community," said Jonah Cool, Cell Science Senior Program Officer at CZI. "Each cell analyzed

brings us closer to understanding diverse populations, complex diseases and how to develop more effective treatments." Data from the winning projects will be made openly available on CZ CELLxGENE Discover and will accelerate modeling efforts including CZI's commitment to build AI-powered virtual cell models, capable of predicting the behavior of healthy and diseased cells.

"It's inspiring to see the science that can be enabled by pushing the scale of single cell studies to many millions of cells," said Gilad Almogy, CEO of Ultima Genomics. "We are excited to continue to support the 100 Million Cell Challenge as it expands to enable even more researchers across the globe."

"The ability to extract information for projects of this size requires computational resources that scale efficiently," noted George Vacek, Global Head of Genomics Alliances at NVIDIA. "Analysis at scale powered by NVIDIA technology will help transform this incredible data into actionable scientific insights."

Winning projects were selected to reflect four key priorities in biomedical research:

1. Global Health Equity: Studies spanning multiple continents and diverse populations across age and ancestry
2. Disease Characterization: Looking at many patients and tissues temporally to fully understand disease-specific mechanisms
3. Cancer Biology: New approaches to understanding treatment responses
4. Therapeutic Innovation: Novel platforms for disease perturbations and drug development

The projects selected for full subsidy include:

- Federico Gaiti, University Health Network, Elucidating molecular dependencies of glioblastoma cells engaged in neuronal crosstalk
- Caleb Webber, UK Dementia Research Institute, Zebrafish whole brain disease modelling
- Sophia George, University of Miami, African Caribbean Single Cell Network
- Kevin Matthew Byrd, Virginia Commonwealth University, Mapping the pediatric inhalation interface at single cell resolution
- David van Heel, Genes & Health / Queen Mary University of London, Genes & Health, multiomics
- Tom Taghon, Department of Diagnostic Sciences, Faculty of Medicine and Health Sciences, Ghent University, Molecular drivers of human T cell development
- Drew Neavin, Garvan Institute of Medical Research, Identifying patients at risk of drug-induced cardiotoxicity
- Luis Barreiro, University of Chicago, Unveiling immune variation across diverse human populations
- Barbara Treutlein, ETH Zurich, Predictive modeling of cell state-specific responses to small molecule perturbations in human organoids
- Zack Lewis, Allen Institute for Brain Science, Sympathetic nervous system atlas
- John Tsang, Yale University/Chan Zuckerberg Biohub New York, Deciphering the immune health of global populations
- Constantine Tzouanas, MIT, Protein platform perturbing human PBMCs with transcriptomic readout

- Christine Disteche, University of Washington, Single cell transcriptome analyses of sex differences in normal human development and in genetic conditions with an abnormal number of sex chromosomes
- April Foster, Wellcome Sanger Institute, Signalling perturbations to understand human development

Project details and updates will be available at scale.bio/100MillionCells.

About Scale Biosciences

At Scale Bio, we are committed to accelerating scientific breakthroughs by providing innovative single cell omics solutions that redefine accessibility, flexibility, and scalability, empowering researchers to unlock the full potential of single cell omics. Leveraging our core massively parallelized single cell barcoding technology, we offer a range of advanced workflow solutions that maximize insights delivered with every experiment and sample type, allowing scientists to generate more data, analyze more samples, and explore more omics, cost efficiently and with unprecedented ease. Founded by scientists and technologists with experience across a range of multiomics disciplines, Scale Bio has attracted financing from leading life sciences tools investors including ARCH Venture Partners, BNG01, and Tao Capital. Scale Bio is headquartered in San Diego, Calif. Visit scale.bio to learn more.

About Ultima Genomics

Ultima Genomics is unleashing the power of genomics at scale. The Company's mission is to continuously drive the scale of genomic information to enable unprecedented advances in biology and improvements in human health. With humanity on the cusp of a biological revolution, there is a virtually endless need for more genomic information to address biology's complexity and dynamic change—and a further need to challenge conventional next-generation sequencing technologies. Ultima's revolutionary new sequencing architecture drives down the costs of sequencing to help overcome the tradeoffs that scientists and clinicians are forced to make between the breadth, depth and frequency with which they use genomic information. The new sequencing architecture was designed to scale far beyond conventional sequencing technologies, lower the cost of genomic information and catalyze the next phase of genomics in the 21st century. To learn more, visit www.ultimagenomics.com/

About the Chan Zuckerberg Initiative

The Chan Zuckerberg Initiative was founded in 2015 to help solve some of society’s toughest challenges — from eradicating disease and improving education, to addressing the needs of our local communities. Our mission is to build a more inclusive, just, and healthy future for everyone. For more information, please visit chanzuckerberg.com.

About Bioturing

BioTuring’s cloud-based platform enables rapid, large - scale single cell analysis, empowering researchers to seamlessly upload, visualize, analyze, and share complex datasets in real time. With advanced tools like BBrowserX, BioTuring offers intuitive tools to support analysis of million-cell datasets, allowing researchers to extract deeper insights from their data and accelerate breakthroughs in biology. This powerful platform provides comprehensive insights across diverse sample types, supporting innovation in life sciences- no coding experience required.

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