



## Illumina expands Billion Cell Atlas program with new AI drug developers

July 16, 2026

*Partners will use unprecedented data scale to advance more precise medicines to approval*

SAN DIEGO, July 16, 2026 /PRNewswire/ -- Illumina, Inc. (NASDAQ: ILMN) today announced that the Billion Cell Atlas alliance has added three new member companies, including AI-native drug developer Formation Bio. As leaders in AI-driven drug discovery, design, and development, alliance members will use the unprecedented scale of Illumina's genome-wide perturbation data as infrastructure for the next generation of therapeutics.

"We are building the cell atlas to address key bottlenecks across the drug discovery and development continuum," said Rami Mehio, senior vice president and general manager of BioInsight at Illumina. "We are creating the foundational framework to train virtual cell models and solve some of the most fundamental challenges in biology. Together, partners using this unique dataset can have a significant impact in de-risking and accelerating the journey from biological insights to approved drugs."

Introduced in [January 2026](#) with founding participants AstraZeneca, Merck, and Eli Lilly and Company, the Atlas enables users to discover and validate novel targets, characterize drug and disease mechanisms of action, and explore potential new indications. Over 350 million cells have been sequenced to date, generating upwards of six petabytes of genomic data. The scale and diversity of the Atlas across hundreds of disease-relevant and healthy cell types can reveal how diseases originate and develop, as well as how we may be able to reverse their progression.

"Formation Bio's model is to identify and acquire promising medicines already close to or in the clinic, then use AI and technology to develop them faster and more efficiently. A core part of that model is making better asset-selection and indication decisions, especially for first-in-class programs where the evidence is often fragmented," said Benjamine Liu, CEO and co-founder of Formation Bio. "We are excited to leverage the Illumina Billion Cell Atlas to credential therapeutic-area hypotheses and target-indication pairs against a new layer of cell-specific causal biology. Combined with genetics, human biology, translational evidence, and clinical data, these insights can help us choose the right assets, indications, patients, and trial designs—and ultimately increase the probability that important new medicines reach patients."

### **Transforming drug discovery and development requires biological understanding at scale**

For Formation Bio, the Atlas can provide insight into why a drug might work or fail in a specific patient population. Single-cell perturbation data at scale will enable researchers to build more precise models of how candidate drugs interact with disease biology, improving their ability to identify which patient subgroups are most likely to respond and inform clinical trial design. The Atlas will also strengthen one of the most consequential decisions in drug development: choosing which assets to advance and in which indications.

This is particularly important for first-in-class medicines, where the target biology may be compelling but clinical precedent is limited. By integrating cell-state-specific perturbation data with genetic, human, translational, and clinical evidence, Formation Bio can more rigorously credential target-indication pairs, identify the disease contexts and patient populations most likely to respond, and prioritize programs with the strongest probability of clinical success.

"The next frontier of AI in biology hinges on the creation of foundational training datasets," said Kyle Farh, vice president of Artificial Intelligence at Illumina. "Up until now, most single cell data has been observational. We aim to change that, and in the process, reimagine what is possible in biology."

### **About the Illumina Billion Cell Atlas**

The Illumina Billion Cell Atlas — the world's largest genome-wide genetic perturbation dataset — is capturing how one billion individual cells respond to genetic changes via CRISPR across more than 200 disease-relevant cell lines. The program launched in [January 2026](#), and members include AstraZeneca, Eli Lilly and Company, Formation Bio, Merck, and two additional AI-driven drug discovery partners. It will be the most comprehensive map of human disease biology upon completion. To learn more about the Illumina Billion Cell Atlas and other multiomics initiatives, visit this [link](#).

### **About Illumina**

Illumina is improving human health by unlocking the power of the genome. Our focus on innovation has established us as a global leader in DNA sequencing and array-based technologies, serving customers in the research, clinical, and applied markets. Our products are used for applications in the life sciences, oncology, reproductive health, agriculture, and other emerging segments. To learn more, visit [illumina.com](https://www.illumina.com) and connect with us on [X](#), [Facebook](#), [LinkedIn](#), [Instagram](#), [TikTok](#), and [YouTube](#).

### **Contacts**

### **Investors:**

Illumina Investor Relations  
858-291-6421  
[IR@illumina.com](mailto:IR@illumina.com)

**Media:**

Christine Douglass  
[PR@illumina.com](mailto:PR@illumina.com)

 View original content to download multimedia: <https://www.prnewswire.com/news-releases/illumina-expands-billion-cell-atlas-program-with-new-ai-drug-developers-302827780.html>

SOURCE Illumina, Inc.