



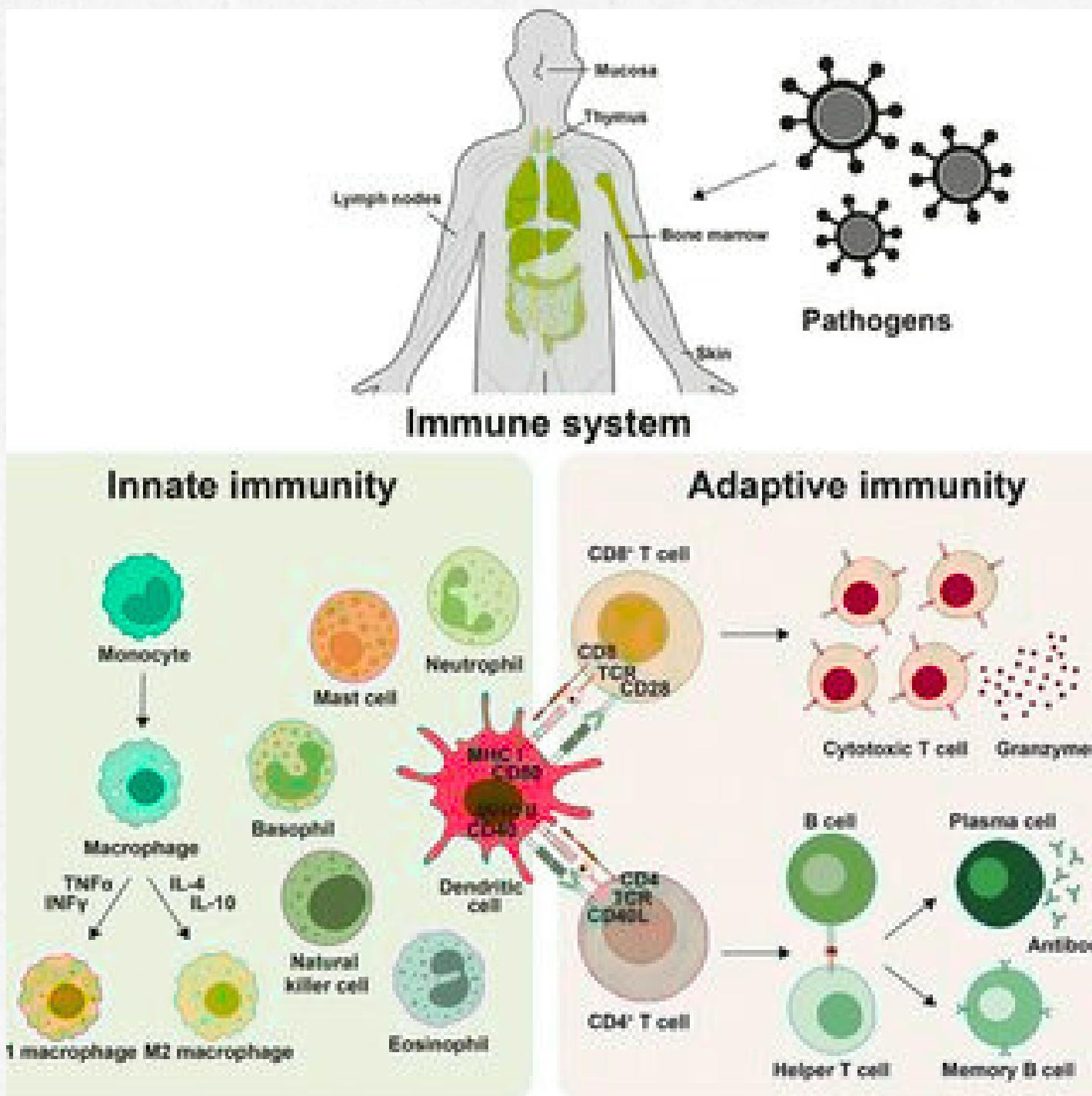
Single-Cell Genomics: A Stepping Stone for Future Immunology Discoveries

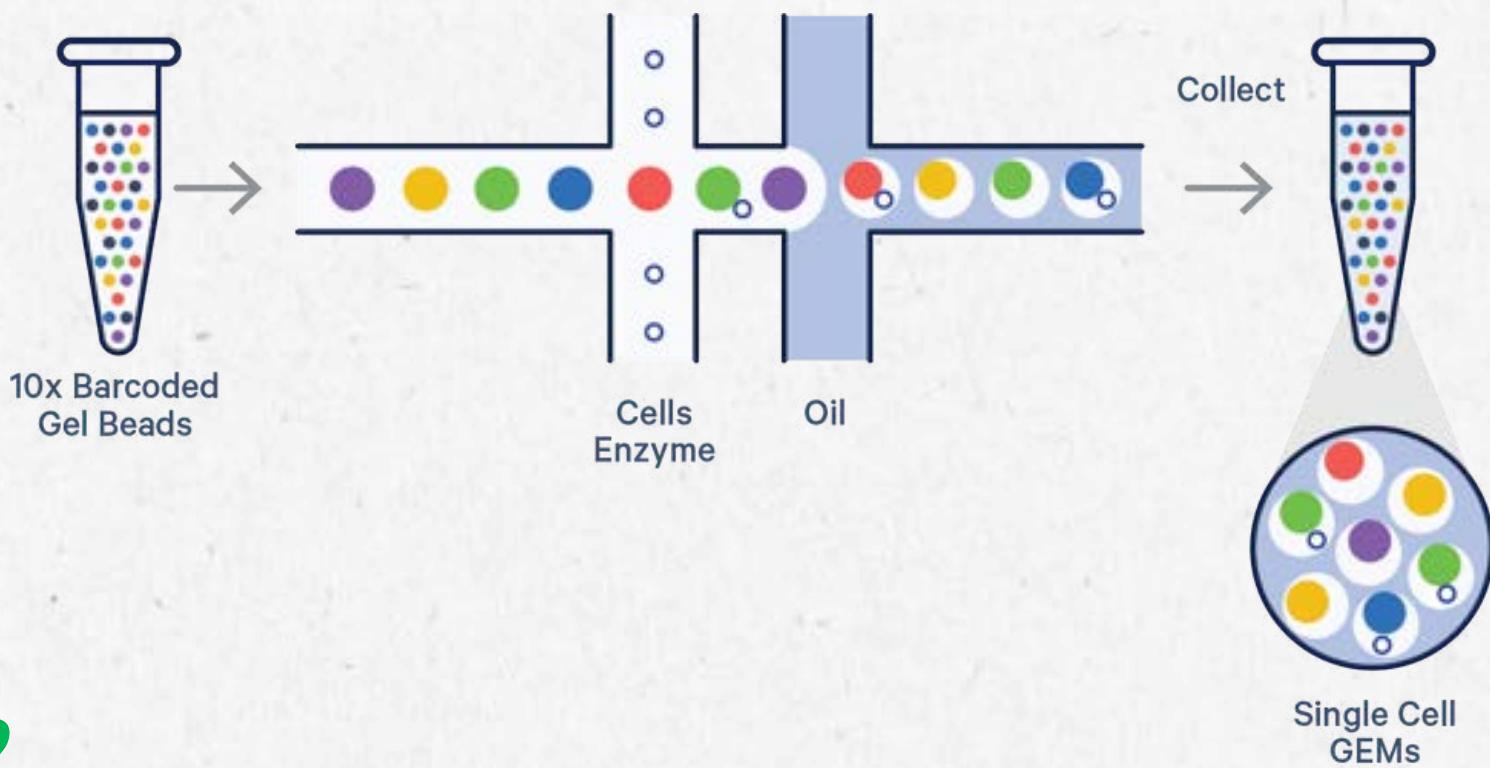
HOW ONE CELL AT A TIME IS RESHAPING THE
FUTURE OF IMMUNE RESEARCH

READ MORE A small, green, rounded rectangular button with a white arrow pointing to the right, indicating a link or call to action.

Why Immunology Needed an Upgrade

- For decades, scientists classified immune cells using fixed molecular markers – helpful, but limited.
- The immune system isn't static. Its cells adapt, switch roles, and behave differently across tissues and diseases.

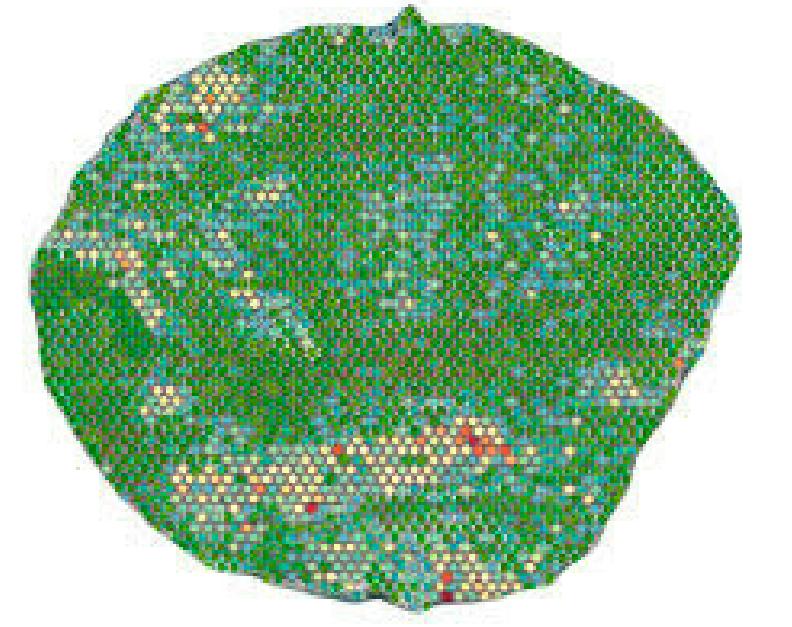




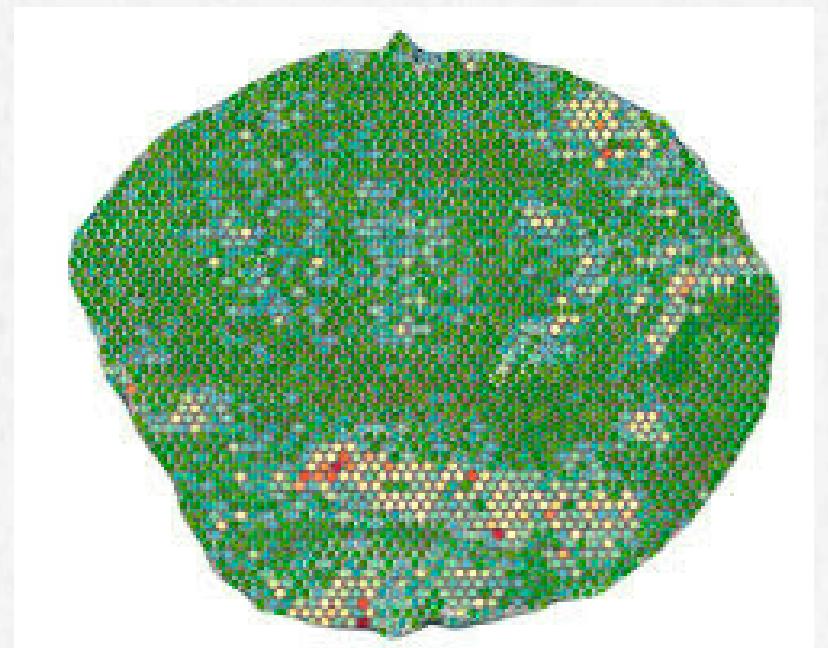
The Breakthrough:

Single-Cell Genomics

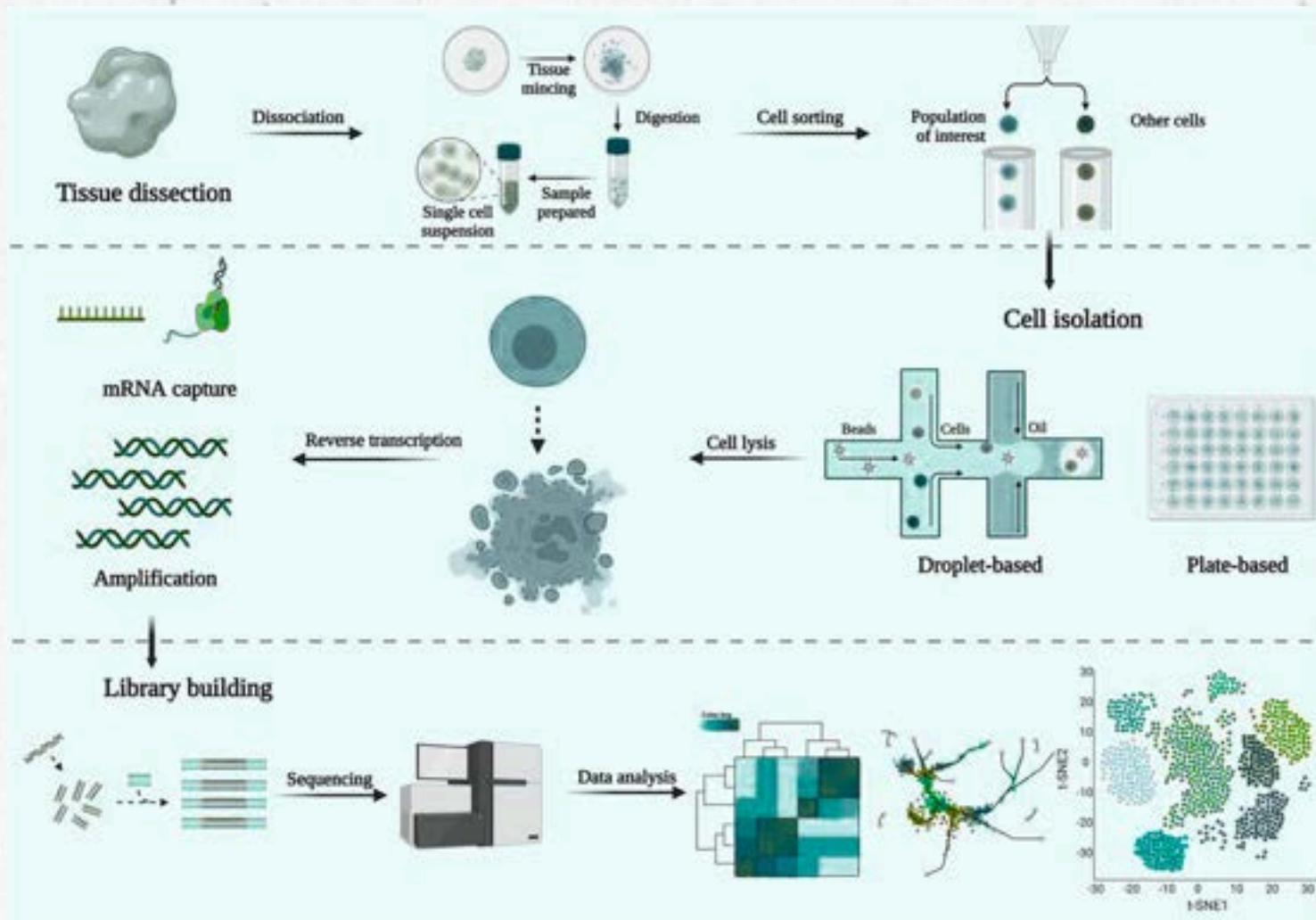
- With single-cell RNA sequencing (scRNA-seq), scientists can now study each cell's gene expression individually. It transforms tissues into cellular maps, exposing unique functions, states, and lineages.
- This unveils hidden cell types, states, and transitions that bulk sequencing once blurred.



Discoveries That Changed the Game



Redefining immune diversity



Thanks to scRNA-seq, we've discovered:

- Disease-associated microglia in Alzheimer's
- New T-helper and innate lymphoid subsets
- Dynamic immune cell responses during infection

“From microfluidics to machine learning”

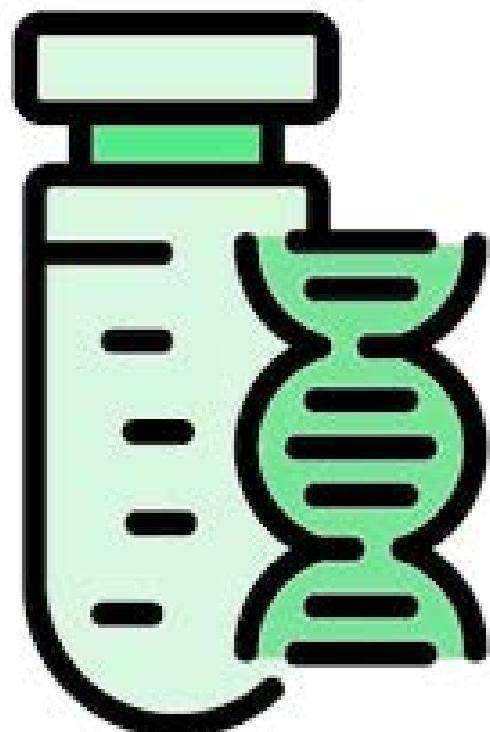
The following advances have boosted throughput, accuracy, and discovery speed:

- Microfluidic droplet systems
- Molecular barcoding
- Computational clustering



The Future

Bridging Discovery and Therapy



From Data to Cures

Single-cell genomics is not just a discovery tool – it's shaping:

- Immunotherapy design
- Biomarker identification
- Personalized medicine

*Every cell has a
story*

and together, they tell
the future of
immunology.



**SHARE THIS POST
WITH SOMEONE**