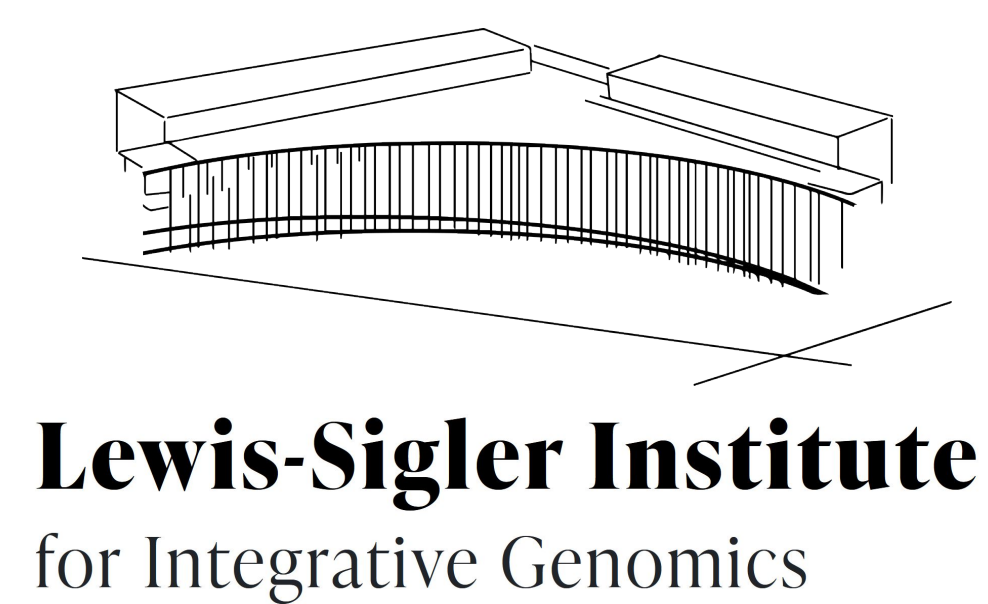


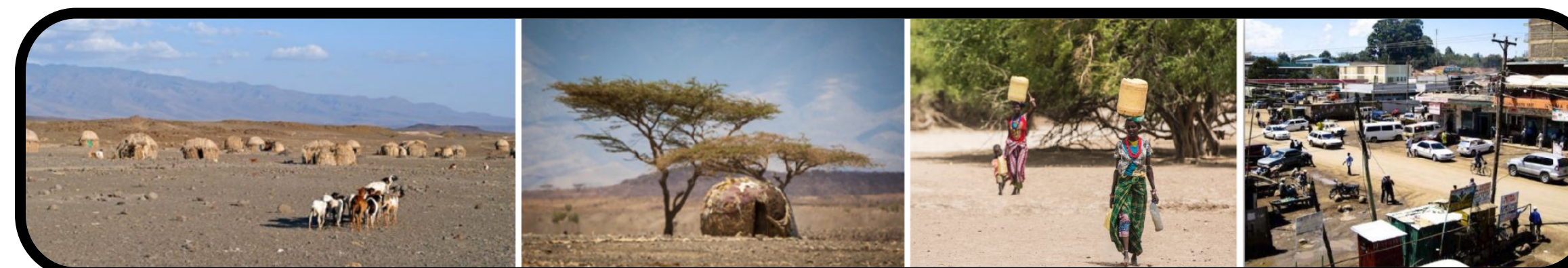
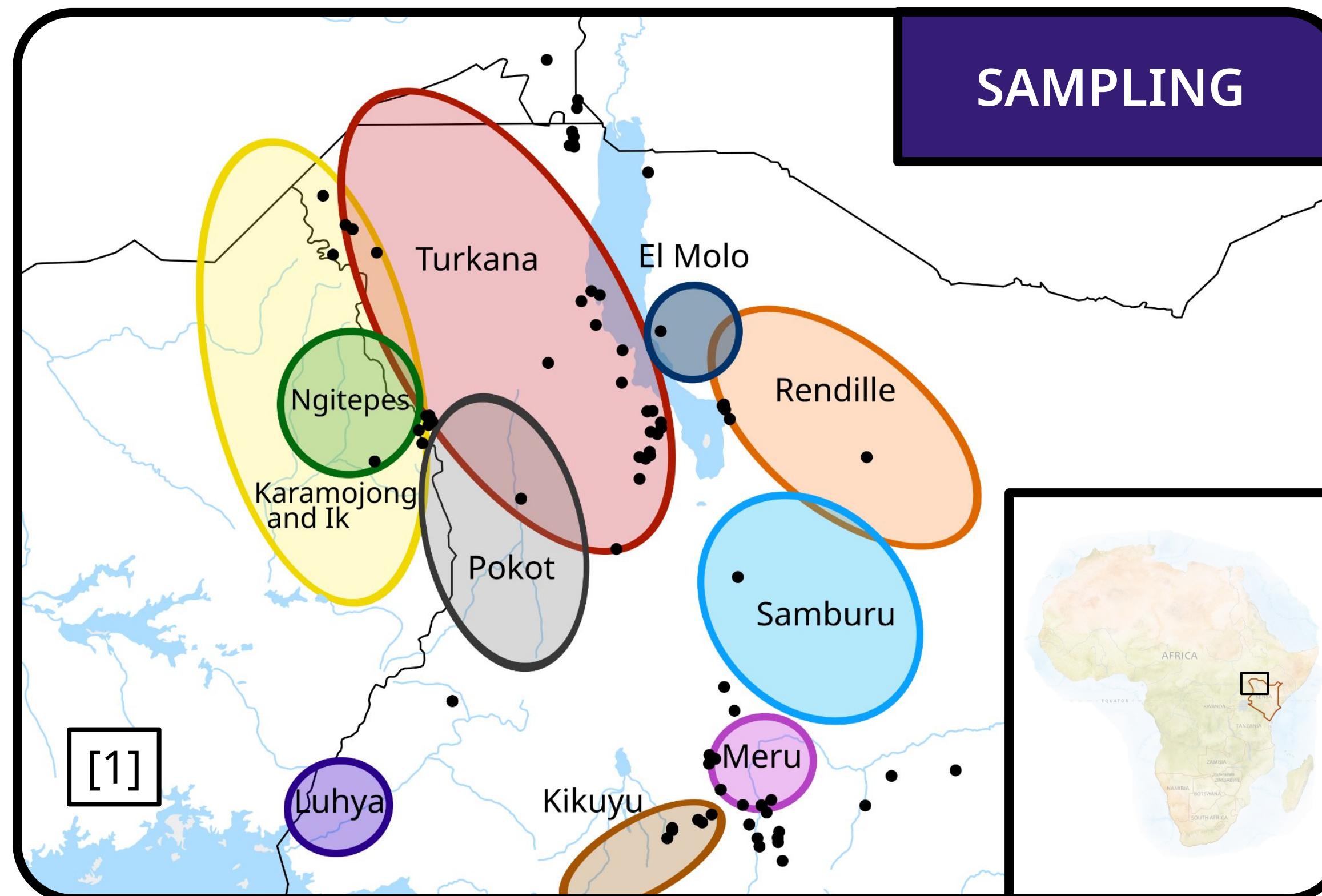
A MULTIOMIC ATLAS OF A NORTHERN KENYAN COHORT

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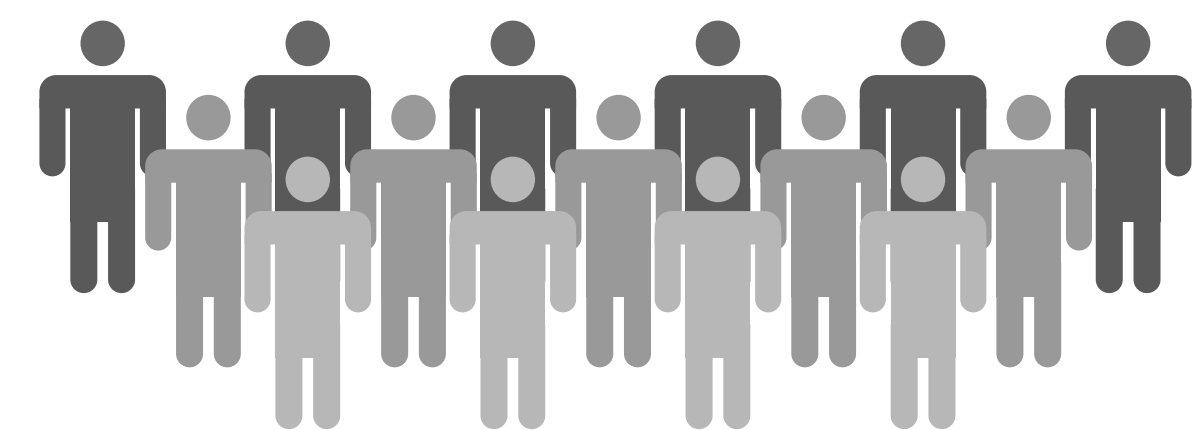
**Chan
Zuckerberg
Initiative**



We are collaborating with communities in northern Kenya to develop a multiomic atlas characterizing inflammatory profiles of communities undergoing rural to urban transitions. By examining individuals across diverse lifestyles with similar genetics, we aim to elucidate how gene by environment interactions contribute to variations in immune function. This will help us understand the role of inflammation in health disparities between rural and urban populations—identifying factors that could be targeted to reduce inflammation-related health risks in communities experiencing rapid urbanization.

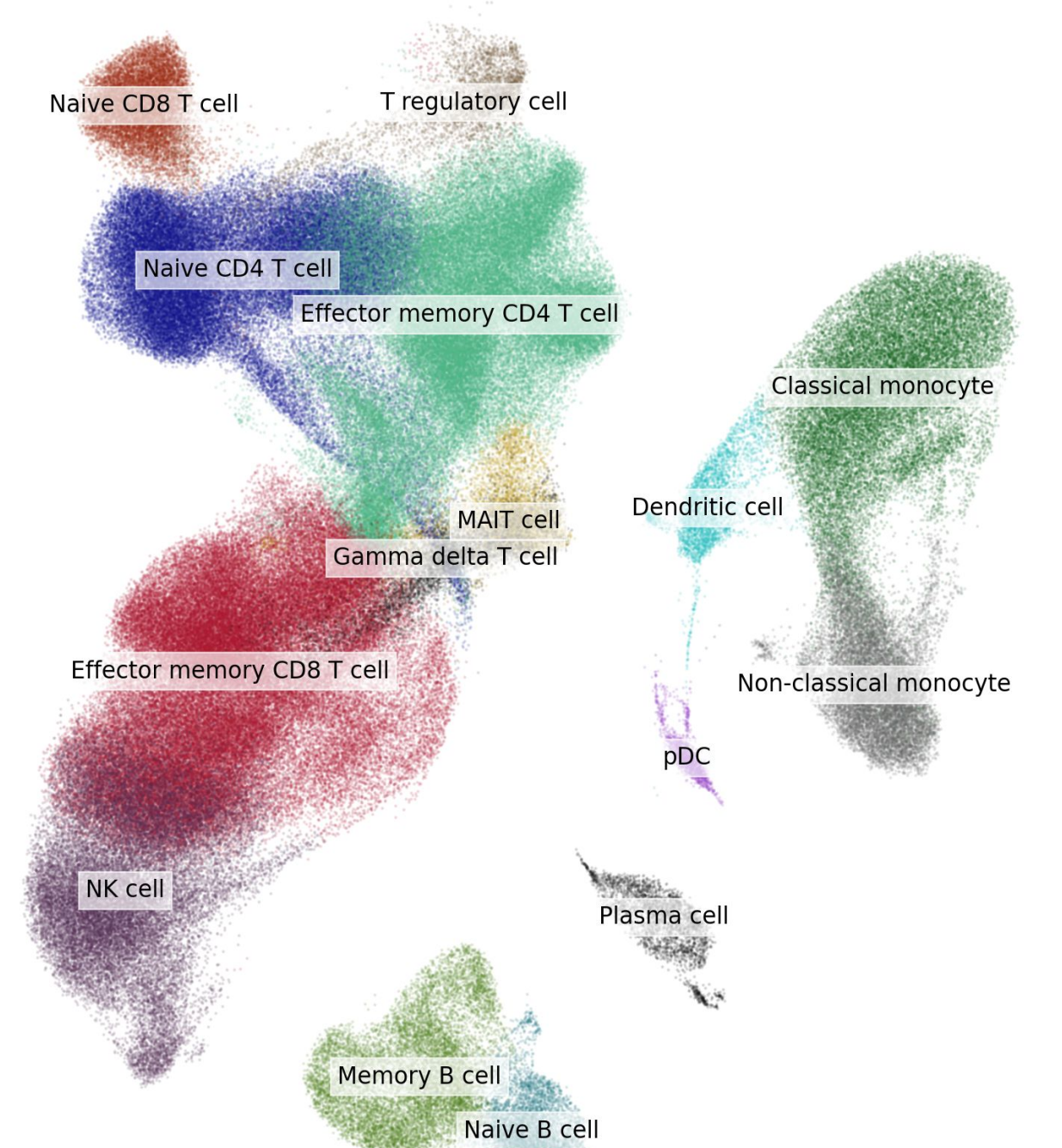
SINGLE CELL PILOT

Bulk RNA Seq (n≈400)



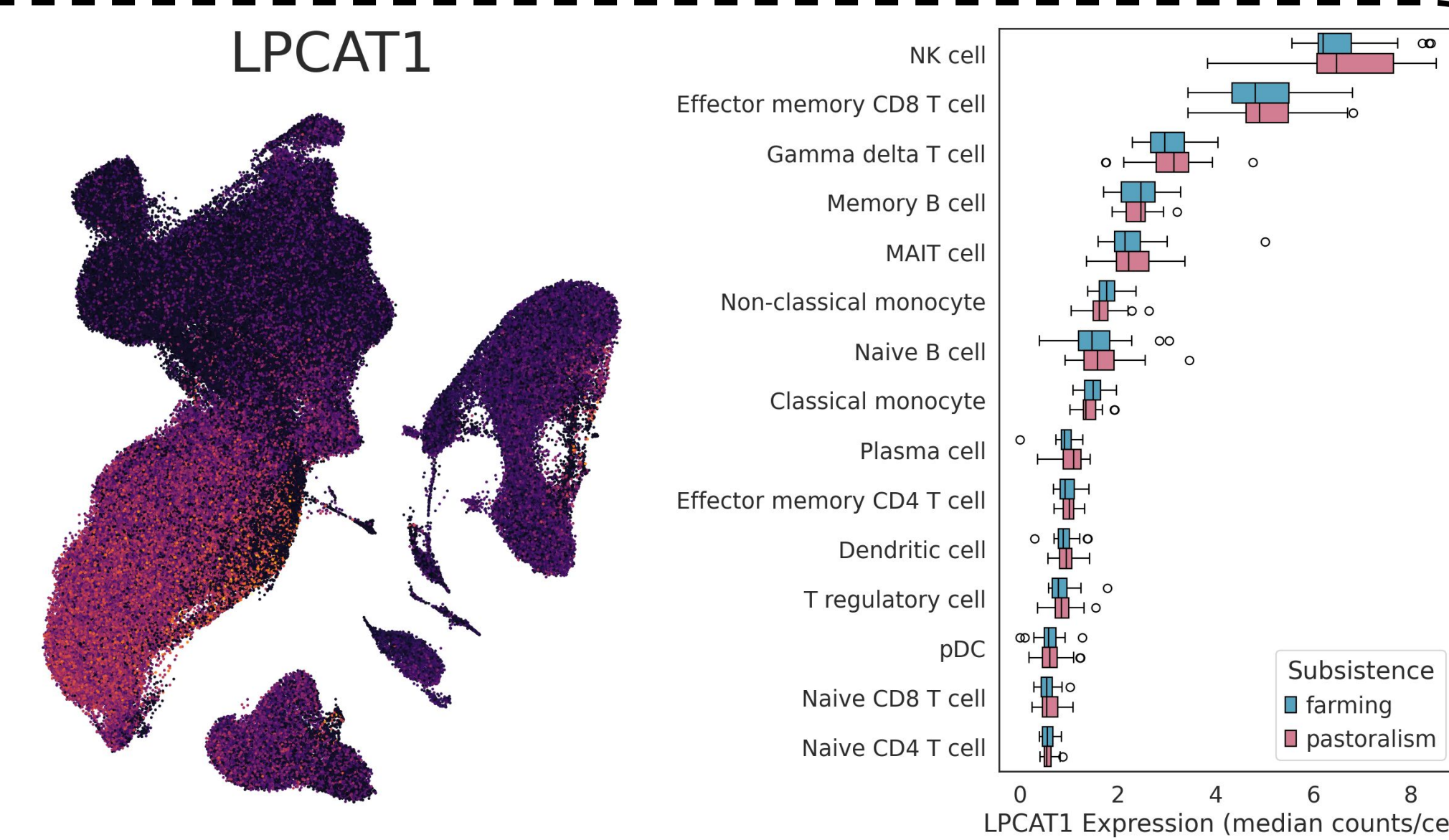
Identify Differentially Expressed Genes Between Pastoralists and Farmers [2]

Single Cell RNA Seq (n≈60)

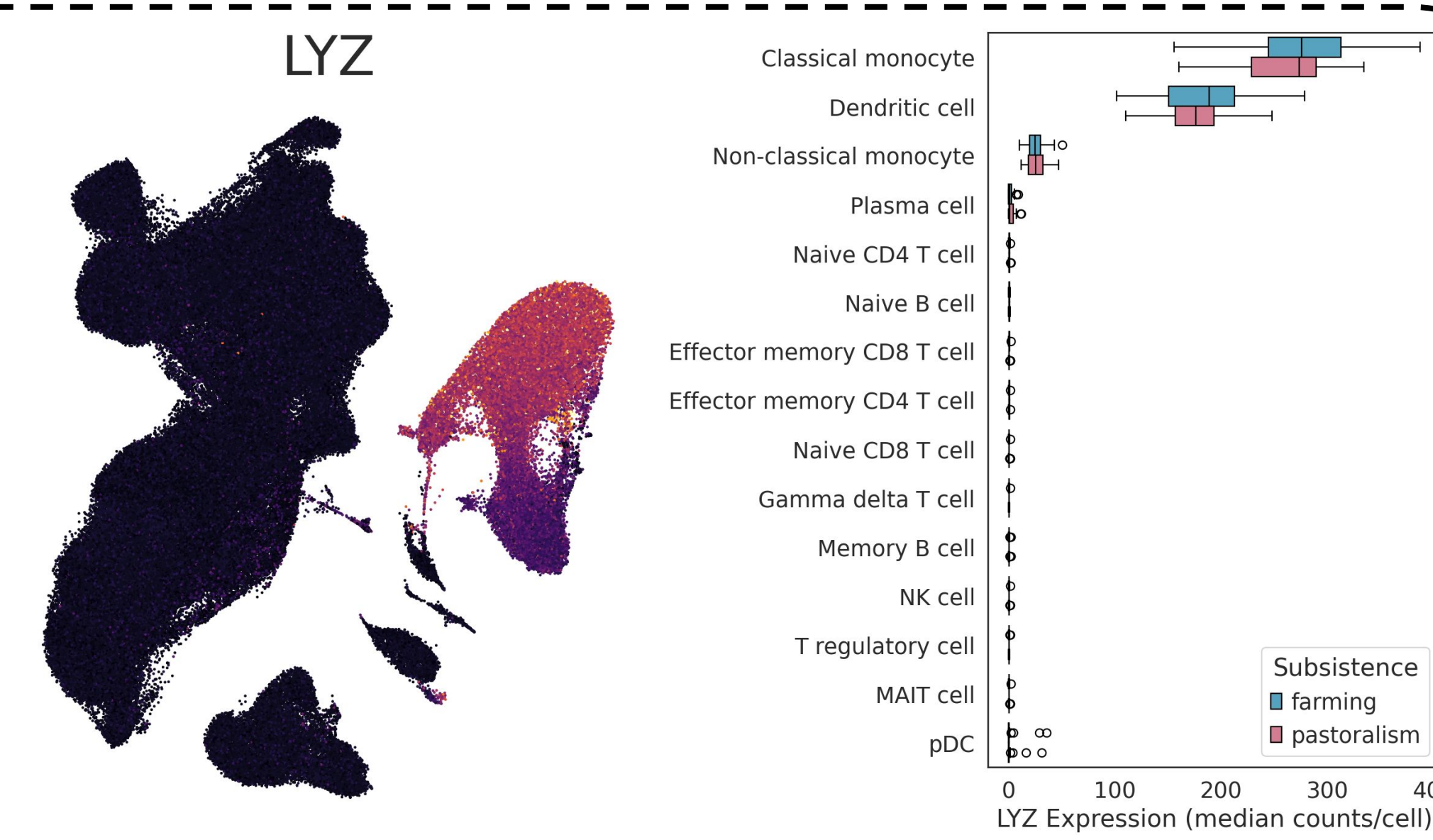


Measure Cell Type Specificity of DE Genes

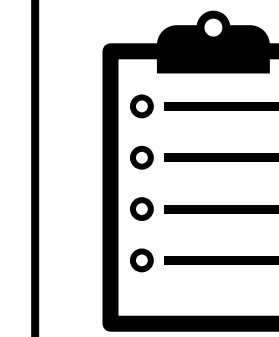
Scenario 1: The gene is differentially expressed in a cell-type specific manner



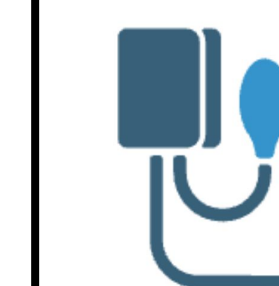
Scenario 2: The gene is not differentially expressed in a cell-type specific manner



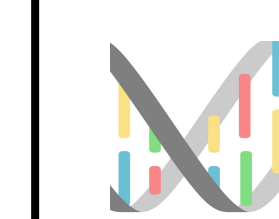
DATA MODALITIES



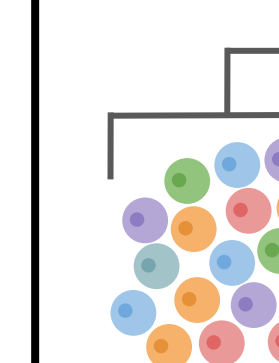
Lifestyle Questionnaire (n=4175)



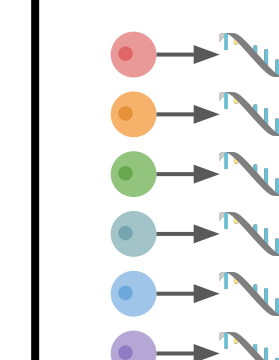
Deep Phenotyping (over 160 traits) (n=4175)



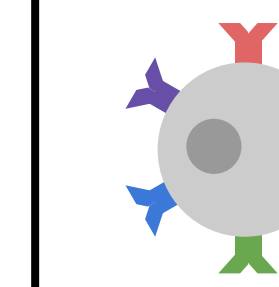
Whole Genome Sequencing (n≈1100)



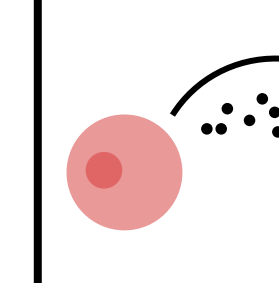
Bulk PBMC RNA Sequencing (n≈1100)



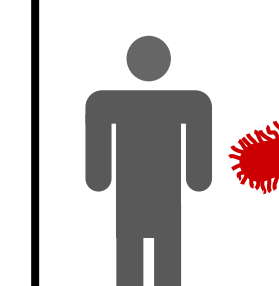
Single-Cell PBMC RNA Sequencing (n=299)



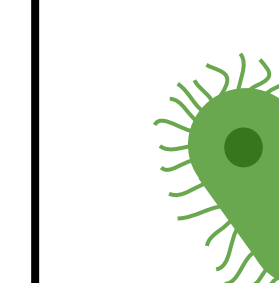
Single-Cell PBMC Surface Protein Profiling (n=48)



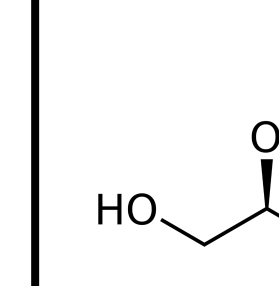
Circulating Cytokine Levels (n=400)



Immune history (n=180)



Microbiomics (n≈1100)



Metabolomics (n=600)

ACKNOWLEDGEMENTS

Kenya: The Turkana Health and Genomics Project Team, Mpala and TBI.
Princeton: Emma Gerlinger, Benjamin Muhoya, Charles Miano, Lydia Lynch
Funding: CZI, Princeton Innovation Funds, Mpala Funds

REFERENCES

[1] Lea AJ, et al. albioRxiv [2023 Jan 19:2023.01.17.524066. doi: 10.1101/2023.01.17.524066.
[2] Lea AJ, et al. et al (2020) Sci. Adv.6,eabb1430. DOI:10.1126/sciadv.abb1430

