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10x Genomics
Clinical Translational
Research Network



MATERNAL AND INFANT
ENVIRONMENTAL HEALTH RISKScape
RESEARCH CENTER



GULF COAST CENTER
PRECISION
ENVIRONMENTAL
HEALTH



NIH **NIH** **NIH** **NIH**
NIAID **NICHD** **NIEHS** **NIMHD**

Research Interests: Early immune development, virology, placental biology, precision environmental health

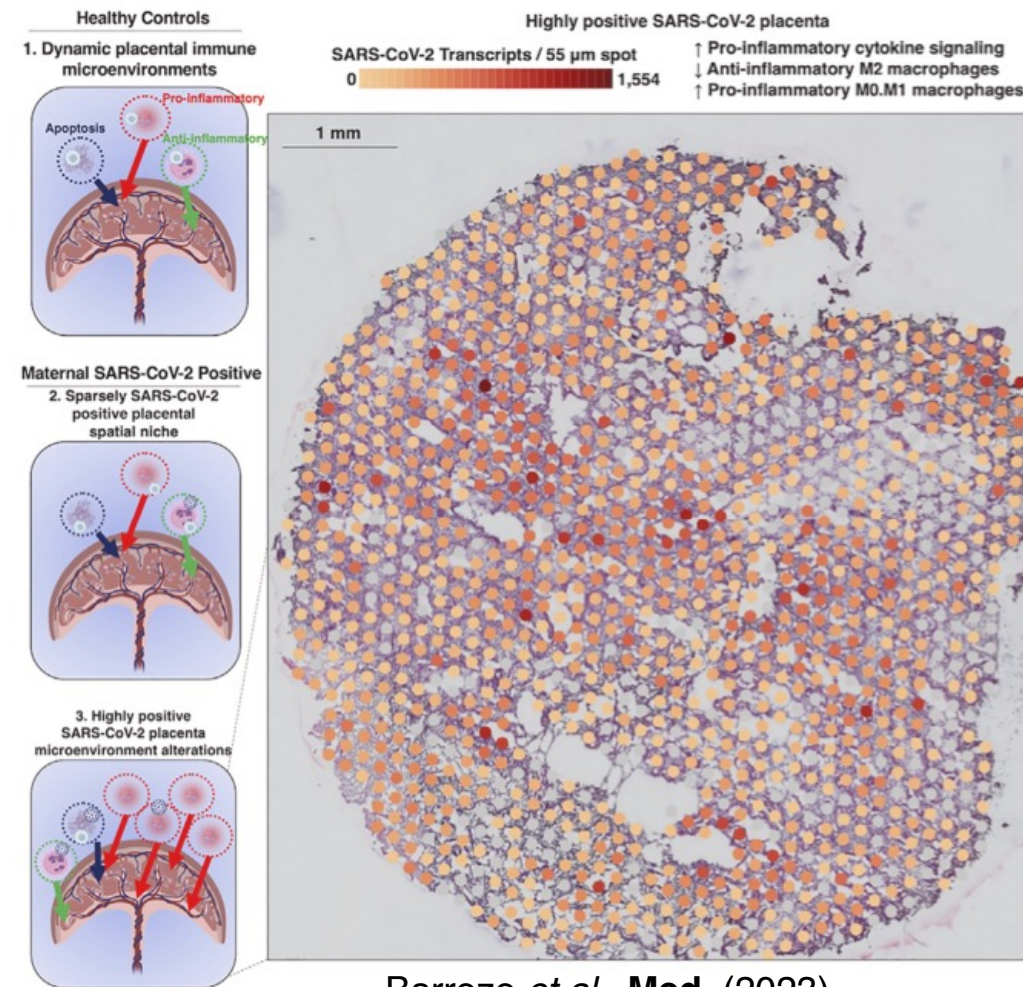
Strengths or Unique Resources: Spatial transcriptomics at the maternal-fetal interface, Perinatal Biobank (PeriBank), TCH Fetal Center Biobank, piloting Xenium in human placentae with custom pathogen panel

Type of collaborator you seek: Immunology, single-cell multiomics (TCR/BCR-seq + scRNA-seq; snATAC-seq + snRNA-seq), spatial metabolomics, single-cell and spatial metatranscriptomics

Blinq Virtual Business Card:
 X, LinkedIn, Instagram, Github
[@barrozophd](https://twitter.com/barrozophd)



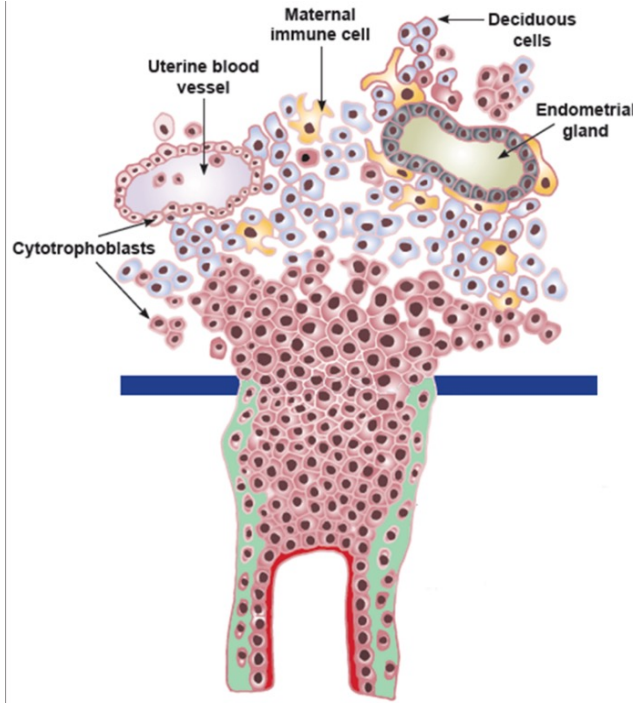
GENETICS AND IMMUNOLOGY
IN FETAL THERAPY



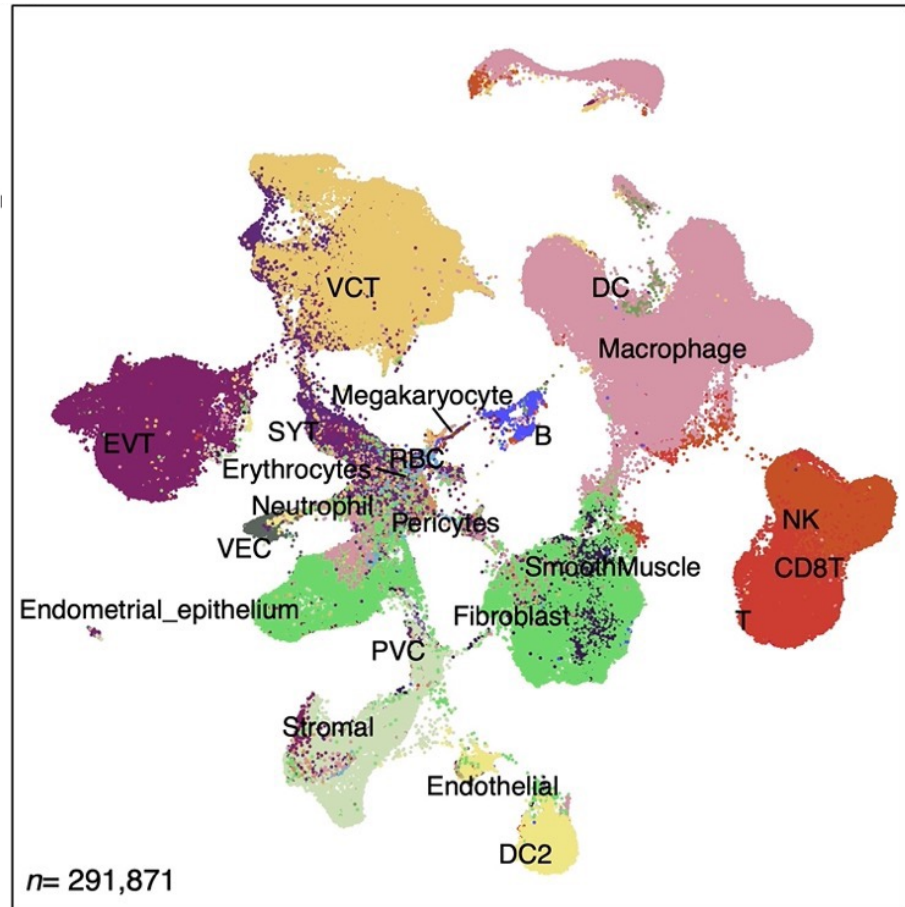
Barrozo et al., *Med.* (2023)

Future Directions: Leverage placenta transcriptomics atlas with single-cell and spatial resolution

13 placentae = 4 control and 9
mSARS-CoV-2+



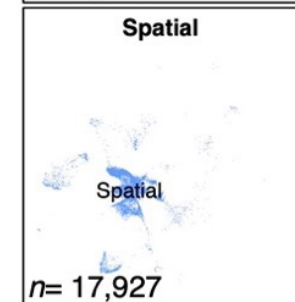
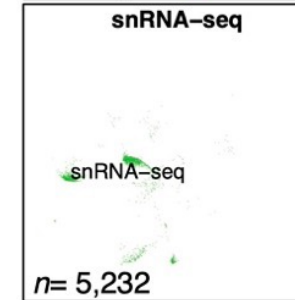
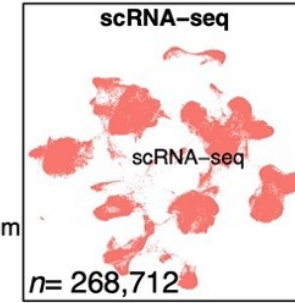
Term Placenta Atlas



Annotation

- B
- CD8T
- DC
- DC2
- Endometrial_epithelium
- Endothelial
- Erythrocytes
- EVT
- Fibroblast
- Macrophage
- Megakaryocyte
- Neutrophil
- NK
- Pericytes
- PVC
- RBC
- SmoothMuscle
- Stromal
- SYT
- T
- VCT
- VEC

Platform



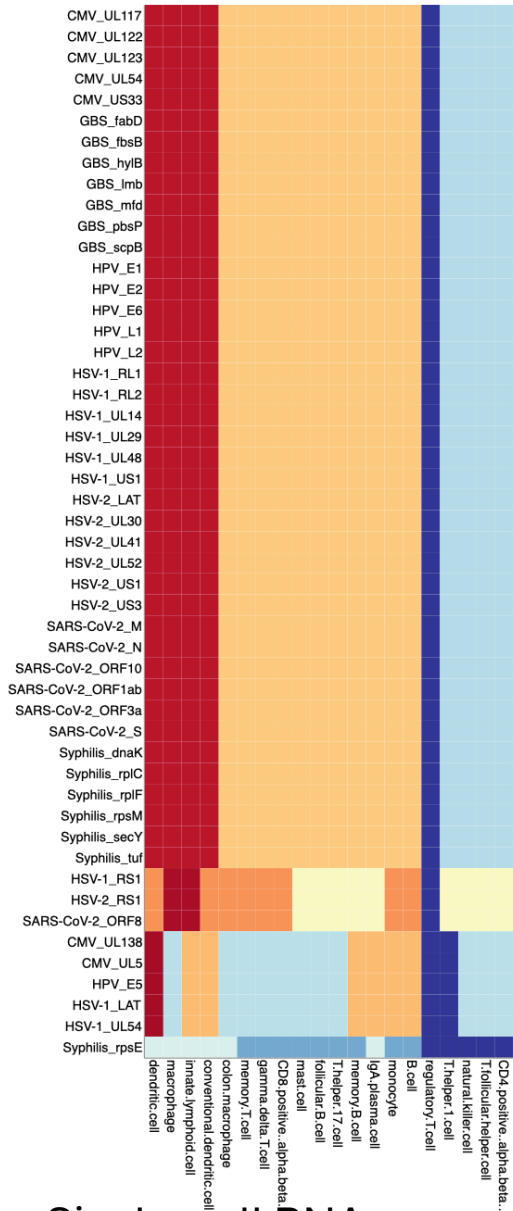
scRNA-seq & snRNA-seq datasets: Garcia-Flores *et al.*, **Nat Commun.** (2022); Pique-Regi *et al.*, **eLife.** (2020); Tsang *et al.*, **PNAS.** (2017); Pique-Regi *et al.*, **eLife.** (2019). Yang *et al.*, **Front Endocrinol.** (2021).

Spatial transcriptomics: Barrozo *et al.*, **Med.** (2023)

Spatial multiomics: Identify altered gene signatures and zoom in on placental microenvironments

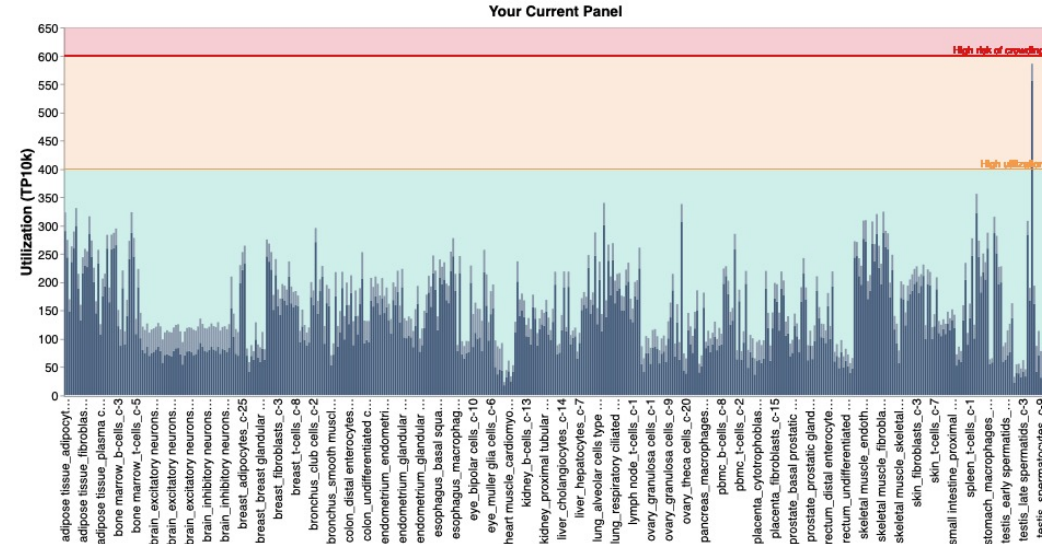
What pathogens and RNAs does our custom Xenium panel cover?

Custom Barrozo Xenium Panel Design



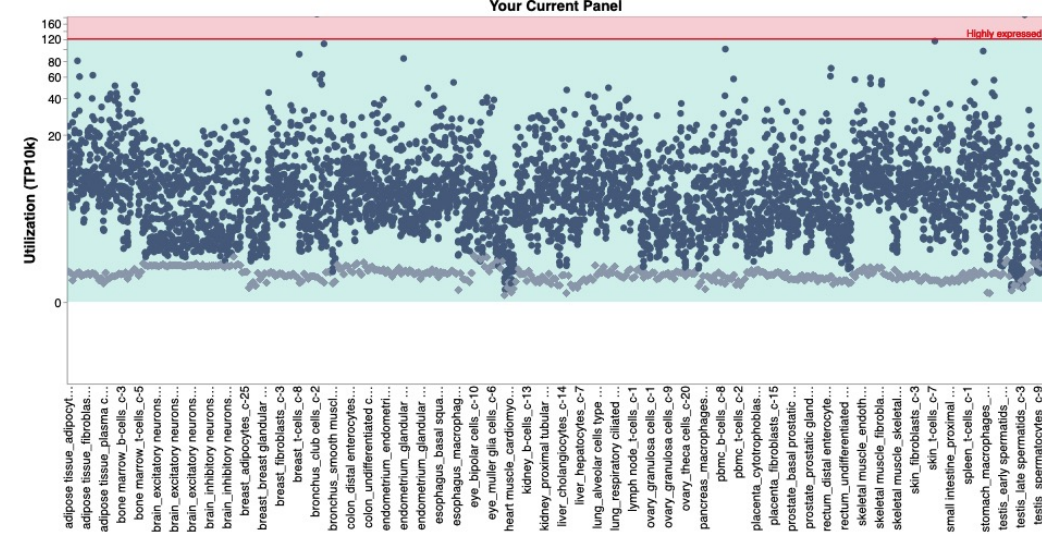
Colored by Cell Types
(Inferred z-scores)

Optical Crowding



- Base Panel
- Add-on Panel

Uniqueness of Probe Sets



- Base Panel
- Add-on Panel