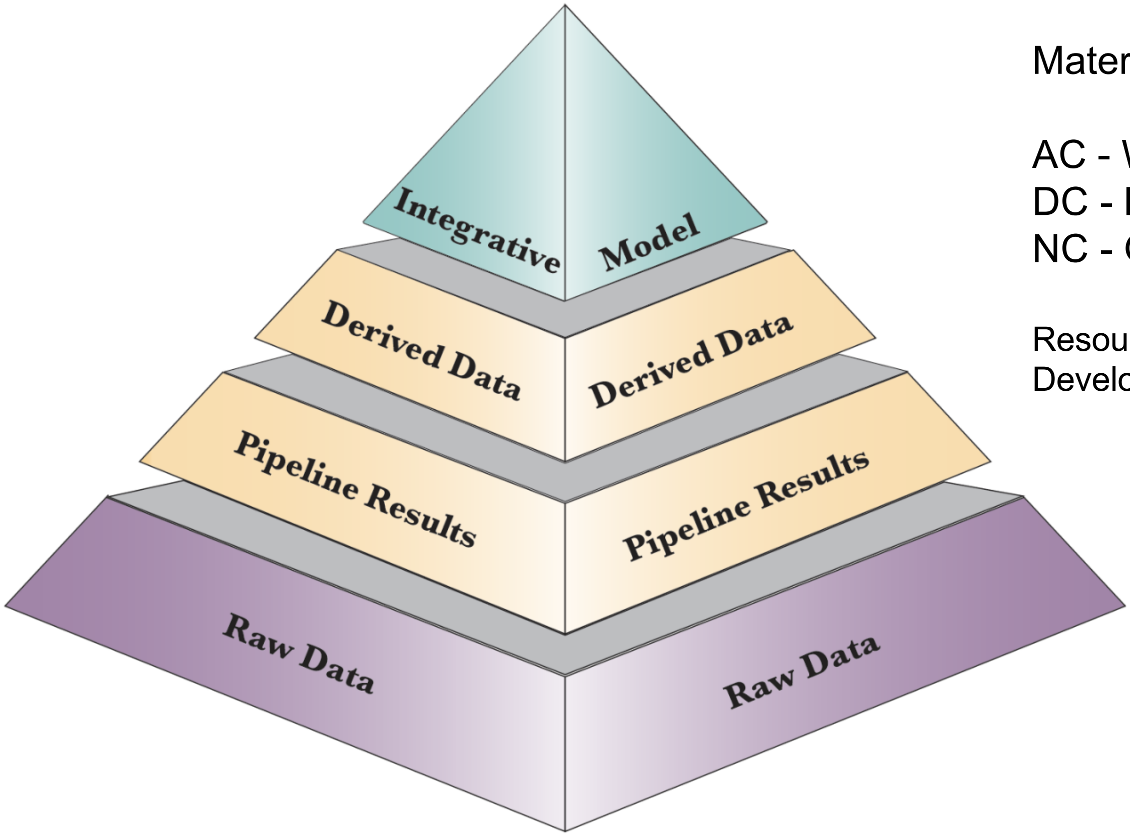
Review of the Phase 1 PsychENCODE capstone resource: Layers of distributed information

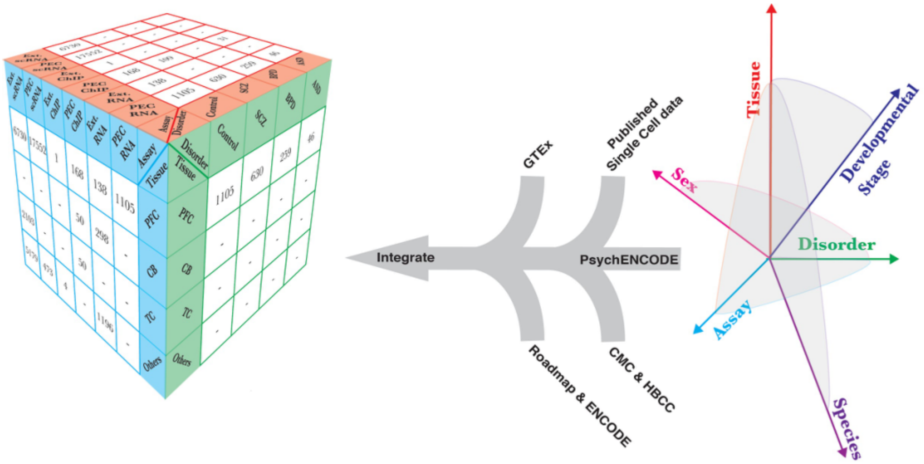


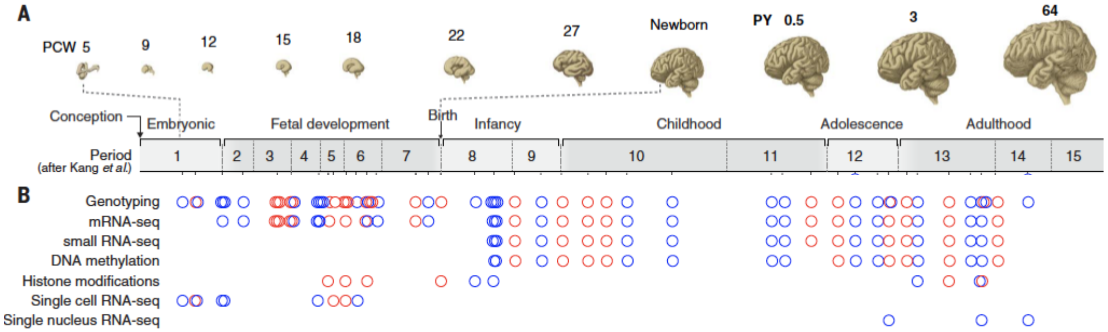
Material in the 3 capstones:

AC - Wang et al. ('18)
DC - Li et al. ('18)
NC - Gandal et al. ('18)

Resource.psychencode.org
Development.psychencode.org

Base Data Layer





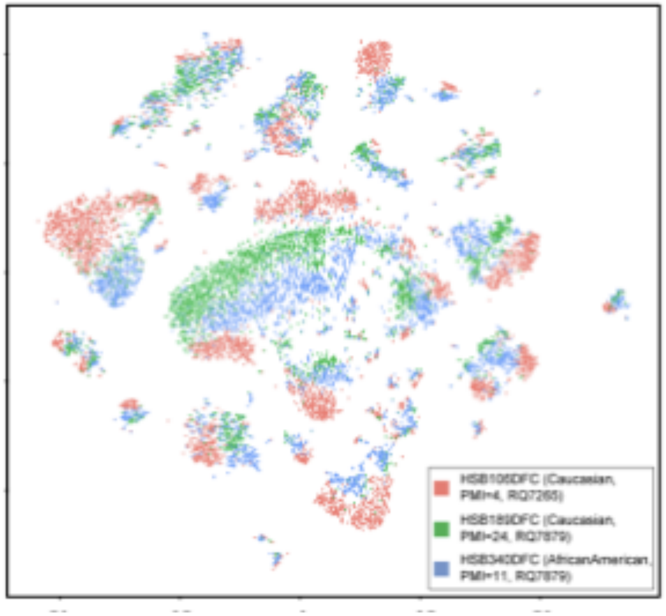
Organizing Metaphors

Future considerations

- New "Axes" ?
- New sets to merge (GTEx v8, HCA)?
- Reference brain ?

[AC,DC]

Pipeline Results



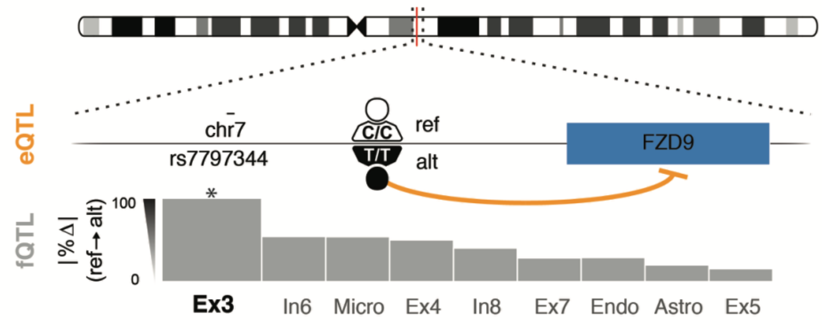
- ChIP-seq & Me
    - signal tracks & peaks
    - Differential H3K27ac & Me peaks
- Bulk RNA-seq quantifications
- Single-cell
    - Quantifications
    - Cell-type signatures & fractions
- Imputed genotypes
- Hi-C matrix & TADs

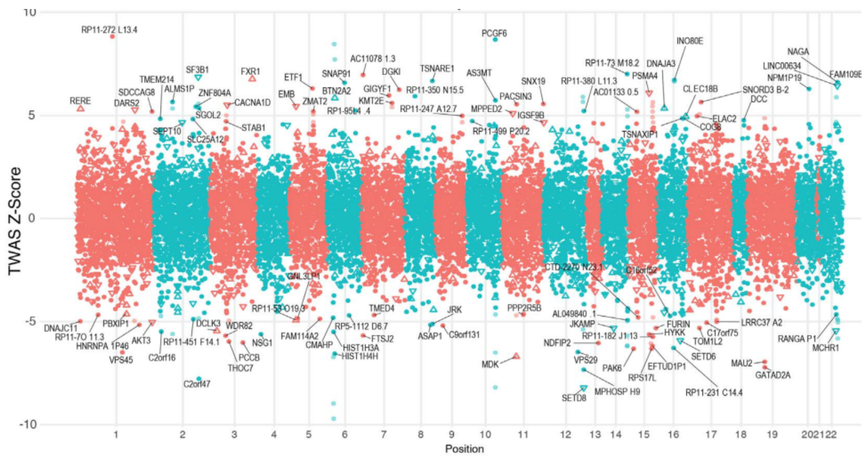
Future considerations

- ATAC-seq pipeline? sc-ATAC?
- More cell types
- WGS vs. imputed genotypes

[AC,DC]

Derived Results



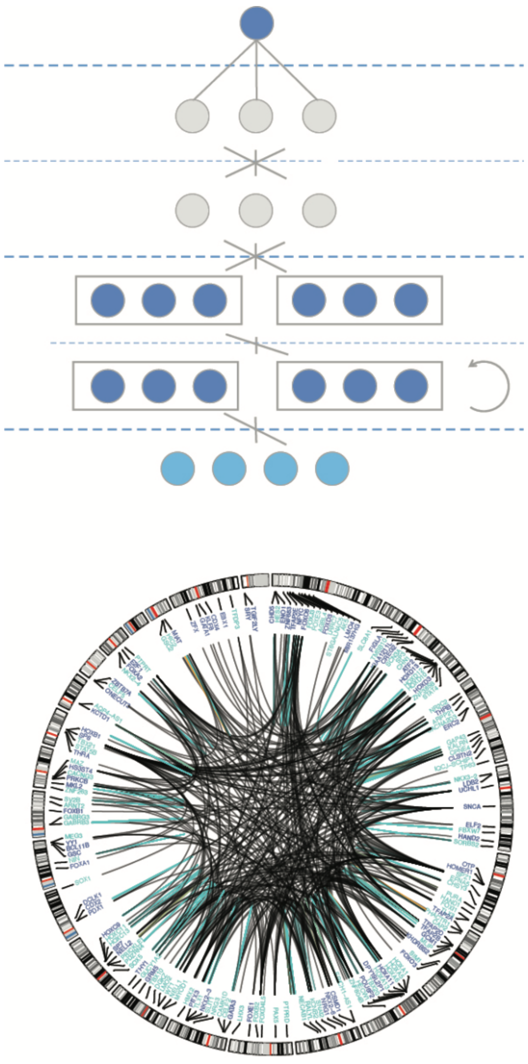


- DEX genes & co-expr. modules
  - Across development, regions & conditions
  - Differential splicing
- PFC QTLs
  - cis-eQTLs - ~2M (sat'd)
  - fQTL, cQTLs
- Enhancers (init. PFC & CBC)

Future considerations

- Trans QTLs? More regions?
- Starr-seq enhancers?

[AC,NC]



Integrative Models

- Integ. Regulatory Networks
    - Activity+Hi-C+QTL
    - Double overlap high-conf. linkages (eg A+H)
- Init. disease prediction model (DSPN)

Future considerations

- Better networks? Single-cell?
- How to distribute models ?