# Humans (GTEx, Public GWAS)

# **GWAS**

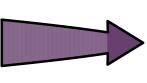
114 Genome-Wide Association Studies across 12 trait categories

### **TWAS**

Gene x Tissue Associations from GWAS & eQTL output



Cross-reference tissue-specific DE genes and TWAS hits against prior expectation



# **Directionality**

Evaluate gene intersects for enrichment in +/- associations



Gene × Tissue Expression data & eQTL mapping across 54 tissues

# h<sub>SNP</sub> Estimation

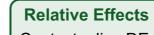
Quantify both SNP heritability enrichment and expression h<sup>2</sup><sub>SNP</sub>



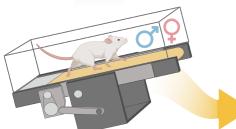
Identify shared etiology of impactful exercise response across transcriptomic architecture of human phenotypic variation, implicating multiple organs and organ systems

# **Exercise**

Chronic exercise experiment, 19 tissues collected at 1, 2, 4, and 8 week timepoints



Contextualize DE relative to natural human variation in GTEx (log<sub>2</sub> scale)



**F344 Rats** (MoTrPAC EET Study)