Predictor distToTSS (bins) scE2G (Multiome) distToTSS (bins) = [0,20) (419 pairs)^{SCE2G (ATAC)} ARC-E2G score 1.00 -Kendall correlation ABC (A=scATAC, C=power law) STARE (gABC, power law) 0.75 SnapATAC (z-score) Precision Signac (p-value) Cicero (co-accessibility) FigR (p-value) SCENT (bootstrap p-value, -log10, signed) 0.25 SCENIC+ (importance) **DIRECTNET** (importance) ArchR (Pearson correlation) 0.00 0.50 0.25 0.75 1.00 0.00 **Predictor** Recall (n=195) scE2G (Multiome) distToTSS (bins) = [100,2.5e+03) (7890 pairs) ARC-E2G score 1.00 -Kendall correlation ABC (A=scATAC, C=power law) 0.75 STARE (gABC, power law) SnapATAC (z-score) Precision Signac (p-value) 0.50 Cicero (co-accessibility) FigR (p-value) SCENT (bootstrap p-value, -log10, signed) 0.25 SCENIC+ (importance) DIRECTNET (importance) 0.00 -ArchR (Pearson correlation) 0.50 0.25 0.75 0.00 1.00 Distance to TSS Recall (n=77)

Closest TSS

Predictor

scE2G (Multiome)

distToTSS (bins) = [20,100) (1377 pairs) (ATAC)

0.50

Recall (n=189)

0.25

0.75

1.00

1.00 -

0.75

Precision 0.50

0.25

0.00

0.00

- ARC-E2G score
- Kendall correlation
- ABC (A=scATAC, C=power law)
- STARE (gABC, power law)
- SnapATAC (z-score)
- Signac (p-value)
- Cicero (co-accessibility)
- FigR (p-value)
- SCENT (bootstrap p-value, -log10, signed)
- SCENIC+ (importance)
- **DIRECTNET** (importance)
- ArchR (Pearson correlation)
- Distance to TSS
- Closest TSS
- Closest gene
- Within 100kb of TSS