Un-modeled data Founder effects Genome scans Relationships defined by QTL analysis Lung A/J B6 129 NOD NZO CAST PWK WSB QTL effect size = 78% *Zfp985* Expression local-eQTL **Kidney** A/J B6 129 NOD NZO CAST PWK WSB QTL effect size = 72% Chromatin Chr 4 QTL (near Akr1e1) distal-cQTL A/J B6 129 NOD NZO CAST PWK WSB Liver Akr1e1 QTL effect size = 71% Chr 4 QTL **Expression** distal-eQTL Lung *Zfp985* Expression Akr1e1 Chr 4 QTL **Expression** mediation p = 4.70e-7mediation through gene expression **Kidney** Akr1e1 Chromatin Chr 4 QTL (near Akr1e1) **Expression** mediation p = 2.18e-13mediation through chromatin **Biologically consistent model DISTAL LOCAL** LOCAL Akr1e1 Chromatin *Zfp985* Expression Akr1e1 Chr 4 QTL Zfp985 (near Akr1e1) **Expression** NOD, NZO, **Reduces chromatin** Low Akr1e1 Chromatin accessibility at PWK, WSB: expression when Mediation Express Zfp985 Akr1e1 region chromatin is inaccessible