Pathway Group: TIMEx expression levels normalized per row (pathway) Resultant genotype nf1 KO; pten KO; ink KO; atrx KO nf1 KO; pten KO; ink KO; atrx wt nf1 wt; pten KO; ink KO; atrx KO nf1 wt; pten wt; ink wt; atrx wt 3 4 N NED Pathologist grade Pathologist major category Pathologist category and grade Age of Death 150 Pathologist major category Nerve sheath tumors Spindle and epithelioid tumors Gliomas Glioneuronal tumors No evidence of disease stromal_Others malignant others minor_CD8Tn minor_CD3111 minor_MAIT minor_Th2 minor_Th17 minor_cDC1 immune_Treg immune_CD8Tex Pathologist category and grade Nerve sheath tumor, low grade Nerve sheath tumor, high grade Spindle and epithelioid tumor, high grade Glioma, grade 2 Glioma, grade 3 immune_cDoTex immune_pDC immune_Mast immune_Neutrophils minor_CD8Teff immune_NK minor_CD4Teff immune_Plasma immune_B Glioma, grade 3 Glioma, grade 4 Glioneuronal tumor, diffuse low grade (DLGNT) Glioneuronal tumor, no grade assigned No evidence of disease Pathologist subcategory Pathologist subcategory Nerve sheath tumor, low grade with adenoid feat. Nerve sheath tumor, low grade Nerve sheath tumor, high grade Spindle and epithelioid tumor, high grade w/ osteoid feat. Astrocytoma, diffuse, low-grade (Grade 2) Astrocytoma, Grade 3 Astrocytoma, Grade 4 Glioblastoma (GBM) Glioblastoma (GBM) w/ spindle-cell component Astrocytoma, Grade 4, leptomeningeal glioma Glioneuronal tumor, diffuse low grade (DLGNT) Glioneuronal tumor, NOS No evidence of disease immune_B immune_ILC minor_CD8Tem immune_CD4Tconv minor_CD4Tn minor_M2 minor_M1 immune minor_cDC2 immune_Mono/Macro immune_DC immune_CD8T minor_CD8Tcm stromal_Endothelial stromal_Myofibroblasts stromal_Fibroblasts stromal stromal minor_Monocyte minor_Th1 immune_TMKI67