**Figure 2**

**Panel a**
Images showing EdU/Sox10 and MBP/Sox10 staining for aOPC on stiff and aOPC on soft hydrogels.

**Panel b**
Bar graphs showing quantification of EdU+/Sox10+ and MBP+/Sox10+ cells for aOPC on hydrogels.

**Panel c**
RNA sequencing analysis showing principal component analysis (PCA) on aOPC, aOPC Soft, aOPC Stiff, nOPC, nOPC Soft, and nOPC Stiff.

**Panel d**
Heatmap showing log fold change (FC) Soft to Stiff for various genes across different conditions.

**Panel e**
Images showing EdU/Sox10 staining for aOPC + DMSO and aOPC + Bleb.

**Panel f**
Bar graphs showing quantification of EdU+/Sox10+ and MBP+/Sox10+ cells for aOPCs with blebbistatin.