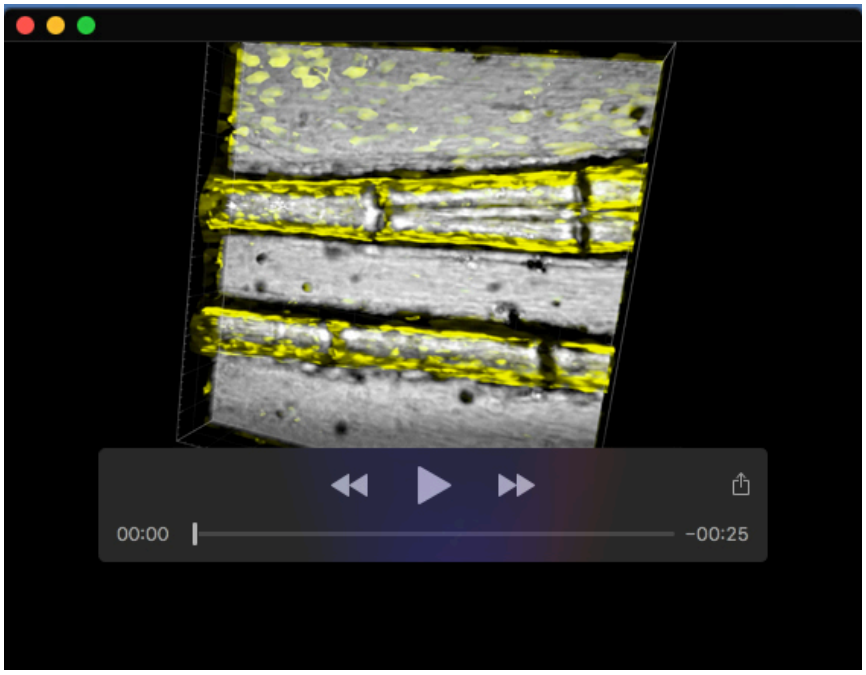
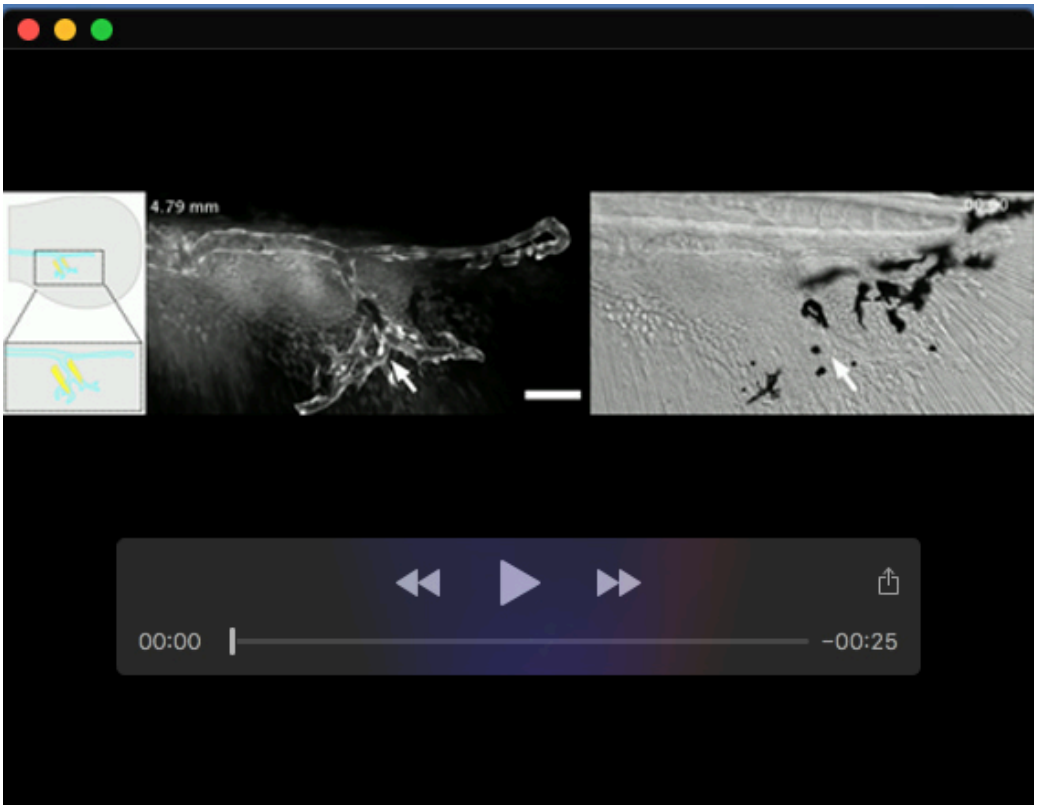
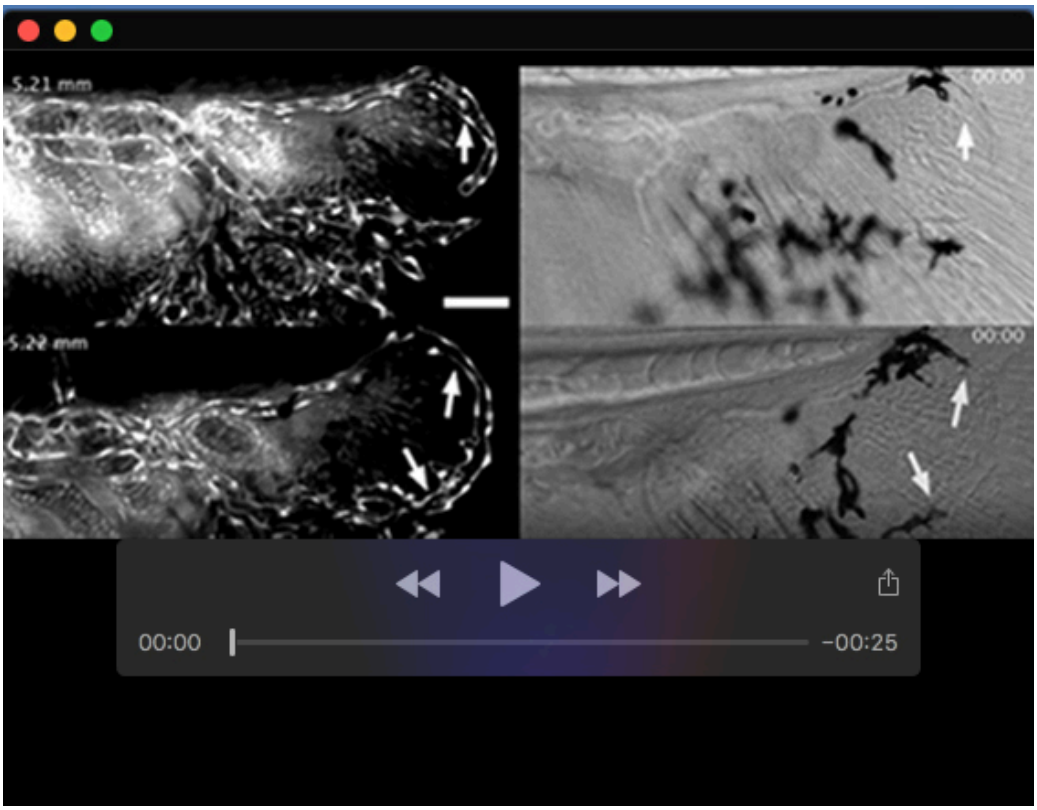


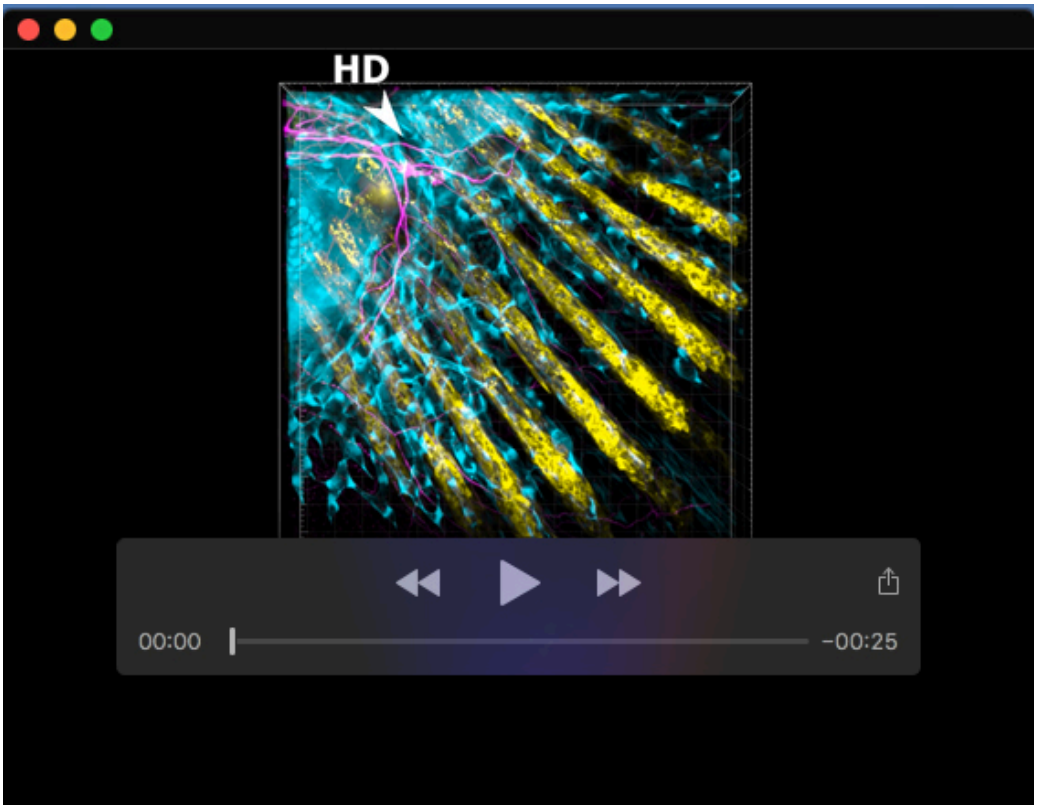
Movie 1. 3D rotation of osteoblasts (yellow) and somatosensory axons (magenta) in the caudal fin of a *Tg(sp7:EGFP);Tg(p2rx2a>mCherry)* adult (25 mm SL) showing an example of a ray bifurcation (upper ray). The close juxtaposition of somatosensory axons and intraray osteoblasts is visible in the reconstructed orthogonal slices. Note that in addition to marking osteoblasts *Tg(sp7:EGFP)* also labels keratinocytes as previously reported (DeLaurier et al., 2010). Scale bar, 70 µm.



Movie 2. Left panel, schematic illustrating the anatomy at the 2 bony ray stage (endothelium, cyan; osteoblasts, yellow). Middle panel, still image of the developing endothelial spout/plexus labeled by *Tg(fli1a:EGFP)* at the 2 bony ray stage. Right panel, DIC video of blood flow in the developing endothelial spout/plexus. White arrow points to the position of blood cells travelling ventrally through the HD into the developing plexus. Time is displayed as MM:SS. Scale bar, 50 μm.



Movie 3. Left, still images of *Tg(fli1a:EGFP)* showing the endothelial plexus of two separate fish, both at the 6 bony ray stage, immediately prior (top) and after (bottom) the formation of the dorsal loop connecting the posterior axial vessels with the developing plexus within the caudal fin. Right, DIC video of blood flow at these two stages. White arrows indicate the developing dorsal loop. Time is displayed as MM:SS. Scale bar, 50 μm.



Movie 4. 3D rotation of osteoblasts (yellow), axons (magenta), and endothelium (cyan) in the caudal fin of a 5.7 mm SL *Tg(fli1a:EGFP);Tg(sp7:mCherry-NTR)* fish immunostained for acetylated tubulin. Note the bilaterally symmetric innervation of the bony rays surrounding the inner, sheet-like endothelial plexus. Scale bar, 30 μm.