performed on a confocal microscope funded by NIH S10-RR028951. Zebrafish were obtained from ZIRC, which is supported by NIH-NCRR Grant P40 RR012546. We acknowledge additional support from the Eye and Ear Foundation of Pittsburgh and from an unrestricted grant from Research to Prevent Blindness, New York, NY.

SUPPLEMENTAL LEGENDS

Figure S1: Periocular mesenchyme cells migrate through the CF during CFC. (A-C) Sagittal section views of the CF immunostained with GFP and Lam-111 antibodies to visualize POM cells (green) and BM (red). Section planes as depicted in Figure 1A. (A) *sox10*:eGFP cells at 37 hpf. Few *sox10*:eGFP cells are detected in the CF. (B,C) *fli1a*:eGFP cells at 36 hpf at a central and central/proximal plane within the eye. *fli1a*:eGFP cells spend extended durations in the CF. (D,E) Sagittal section views at central/proximal and distal/central planes of the eye showing *fli1a*:eGFP cells (green) and *sox10*:memRFP cells (red) in the CF at 34 hpf. Scale bar = 20 μm

Supplementary Movie 1 *in vivo* time-lapse imaging of a single optical section within the distal CF from a *membrane-GFP* injected embryo. Time frame is 33 – 50hpf. Scale bar = 50μm. hh:mm

Supplementary Movie 2 *in vivo* time-lapse imaging of a single optical section within the distal/central CF from a *membrane-GFP* injected embryo. Time frame is 33 – 50hpf. Scale bar = 50μm. hh:mm

Supplementary Movie 3 *in vivo* time-lapse imaging of a single optical section within the proximal CF from a *membrane-GFP* injected embryo. Time frame is 33 – 50hpf. Scale bar = 50μm. hh:mm

Supplementary Movie 4 *in vivo* time-lapse imaging of a single optical section within the central CF from a *membrane-GFP* injected *kdrl*:mCherry embryo. Time frame is 33-42.5hpf. Scale bar = 25μm. hh:mm

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