Supplemental Figure 1. R172W co-localizes with M- and S-opsin in the region adjacent to the RPE. Immunofluorescence was performed on P30 retinal sections using mAB 3B6 (green, for transgenic RDS), and either S-opsin (red, left), or M-opsin (red, right). Sections were counterstained with DAPI (blue). Images are single planes from a confocal stack. N=3-4 eyes/genotype. OS: outer segment, ONL: outer nuclear layer. Scale bar: 10 µm.
**Supplemental Figure 2. R172W causes only minor defects in rod function.** Full-field scotopic ERG was performed on P30 R172W transgenic mice or age-matched non-transgenic (Non-T) controls. Shown are maximum scotopic a-wave amplitudes from mice in the rod-dominant background. N=8-12 mice per genotype, shown are means ± SEM. ** P<0.01 *** P<0.001 by one-way ANOVA with Bonferroni’s post-hoc comparison.
Supplemental Figure 3. R172W leads to dominant defects in OS ultrastructure. Eyes from the indicated genotypes were collected and fixed at P30 for EM. Shown here are additional representative images as in Fig. 3. Abbreviations: RPE, retinal pigment epithelium; IS, inner segment; OS, outer segment. Scale bar: 1 µm.
Supplemental Figure 4. No differences in M- vs. S-cone OS ultrastructure are observed in the presence of R172W. Eyes from the indicated genotypes (P30) were immunogold labeled with S-opsin (A), M-opsin (B), or RDS-CT (C) primary antibodies, and 10 nm colloidal gold-conjugated secondary antibodies. N=3 eyes per genotype. Scale bar: 500 nm.
**Supplemental Figure 5. R172W causes complex abnormalities in cones.** A. Shown are representative non-reducing SDS-PAGE/WBs from non-reducing sucrose gradients from R172W/rds⁺/⁻/Nrl⁻ retinas at P30 (as in Fig. 6). Blots were probed with the indicated antibodies. B. IP controls; shown are input (top) and unbound fractions from RDS IPs (middle) and ROM-1 IPs (bottom). The bound fraction is shown in Fig. 7.
Supplemental Figure 6. *Rds<sup>−/−</sup>* eyes exhibit normal fundus and FA features. Shown are a representative fundus image (left) and FA (right) from an *rds<sup>−/−</sup>* eye captured at two months of age.