Targeted Call for new proposals specifically focused on MYO7A

In addition to our broad call for applications that align with our research priorities, the Foundation is pleased to call for Individual Investigator Research Award (IIRA) and Clinical Innovation Award (CIA) proposals that specifically address gaps in our understanding of MYO7A.

Despite decades of research into the function of MYO7A in multiple species, we lack a complete understanding of its role in humans. This is exacerbated by the fact that animal models in lower species (e.g., mouse and rat) do not develop the retinal degeneration seen in human patients. This has stymied precise investigation of MYO7A function in photoreceptors and prevented testing of potential therapies. Despite these challenges, multiple companies are developing gene-specific therapies for USHB. However, for these products to be successful, especially in Phase 3 clinical trials, companies must have meaningful and measurable endpoints, as well as scalable and reproducible potency assays to validate the purity and efficacy of the clinical product.

Applications focused on MYO7A/USH1B-related research will follow the same timeline and be reviewed by the same panel as our standing IIRA/CIA competition. Applications that propose projects to address the following gaps are especially welcome.

Individual Investigator Research Award (IIRA)

Gap 1: Incomplete understanding of fundamental MYO7A biology, especially in human photoreceptors, which impedes the creation of potency assays.

Improved understanding of MYO7A fundamental biology will provide critical information for therapeutic design (e.g., the cell types that need to be targeted, whether different MYO7A isoforms need to be supplied in a gene augmentation approach, etc.). Ultimately, we hope that these studies will inform the creation of release or potency assays. Possible outstanding questions to be addressed in grant submissions include:

- What is the normal function of MYO7A in human photoreceptors?
- Who are the binding partners of MYO7A, and how do they contribute to its function?

- How do mutations in and/or MYO7A dysfunction lead to degeneration?
- How can knowledge of MYO7A biology be translated to reproducible and scalable potency assays?

Clinical Innovation Award (CIA)

Gap 2: Lack of meaningful, measurable, approved endpoints for use in clinical trials focused on Usher Type 1B (USH1B).

Possible topics to be addressed in grant submissions include:

(1) establishment of sensitive and reliable outcome measures or biomarkers to demonstrate change in USH1B patients over a time period spanning no more than 2 to 3 years;
(2) development and application of new technology to measure retinal structure or function in USH1B patients where changes over time are greater than measured variability;
(3) establishment of relationships between measures of retinal function and structure with the goal of understanding the relationship between USH1B genotype and clinical phenotype;
(4) development of endpoints appropriate for early stage (e.g., pediatric) USH1B patients.

Where appropriate, applicants are encouraged to leverage data collected through the Foundation Fighting Blindness Clinical Consortium.