**INSTRUCTIONS**

* **Final Solutions are due March 2, 2020 at 2:00 pm ET.**
* **Please follow the instructions below to format submissions.**

Please note that these submission instructions have been updated June 1, 2019. No submissions can be uploaded via challenge.gov. All submissions should be sent to [NEI3dROC@mail.nih.gov](mailto:NEI3dROC@mail.nih.gov). Solutions should be provided using this word template, and must be uploaded as a compiled PDF. Abstracts will be publicly available, but only NEI challenge managers will have access to your uploaded submission. By submitting a solution, all solvers agree to the challenge terms & conditions which are detailed on [NEI’s Challenge Details page](https://nei.nih.gov/content/2018-reduction-practice-challenge).

**Submission Requirements.** Prepare the solution as you would prepare a manuscript that is being sent to a peer-reviewed journal. Include relevant data in the results section. Supporting figures and documentation may be included in the Appendix, keeping in mind that reviewers can use their discretion as to whether to consider the optional supplemental data as part of their evaluation. A detailed materials and methods section including all protocols must be submitted in the Appendix. Video abstracts must be provided via a weblink in addition to a written 300-word abstract.

Solutions must:

* Be written in English, follow all page limits (references not included in page limit), have page dimensions (8.5 x 11 inches), font size of 11 pt or greater (for all text including figure legends), and 0.5-inch margins.
* Include figure legends only if they add information that is not available in proposal body; be succinct.
* Include a cover page which is not counted toward the page limit, required sections as listed below, and references. **Any material that does not follow instructions may not be considered**. Appendix must include a detailed methods section and can include optional supporting data.

**TEMPLATE**

Please include the following sections and content in your proposal and **observe page limits**.

**Cover page (1 page)**

Submission Title

*Team lead:* Name, email, institution/organization/company, academic appointment or department (if applicable)

*For each team member:* Name, role, affiliation (institution/organization/company)

Other information:

1. Indicate if your solution is an organoid system for disease modeling or drug testing/high content screening; if the former, indicate the disease. Teams must pick one category or the other. If submission to both categories is desired, team can submit a second proposal under a different team lead.
2. Assess the organoid prototype built by your team. Describe in bullet points the scientific advancement in the system. Is it incremental or beyond that? What is the field still missing? What are the next steps?

**Overall Description of the Human Retina Organoid System (2 page maximum)**

1. Prepare a public abstract that clearly states the advantages and novelties of the retina organoid prototype (300 words maximum).
   1. Video abstracts should be submitted by uploading video to YouTube or other publicly accessible site (e.g., Vimeo) and providing URL as part of text abstract. The video should highlight the novelty of the methods, summarize results (including how prototype has been applied to disease modeling or high-content screening) and discuss impact on end users, accelerating retinal research and therapy discovery, and clinical translation.
2. Include background information and highlight major advances achieved with protocol compared to current state of the field.
3. Provide a methods summary describing any existing methods or technologies that were used, combined, or built upon to develop the retina organoid model systems. Focus on the novel or creative aspects of the technologies used and how protocol addresses the scientific evaluation criteria. Indicate if the model is applicable to disease modeling or high-content screening; if the former, discuss which disease is being modeled. Provide full method details in the Appendix.
4. Include an evidence-based description of the innovation and impact. Cite results and compare to published work to provide evidence that (1) the approach is paradigm-shifting, novel, and creative, and (2) combining or using new technologies gives advantageous results.
   1. Include how the solution will advance understanding of retinal diseases or accelerate therapeutic discoveries.

**Results section**

* **Final submissions**: 3 pages maximum for results text, 5 pages maximum for data figures.

Results should be divided into text-only section that describes figures and data, and data section, which includes tables, images, etc. This format was chosen to facilitate side-by-side reading for reviewers. Figure descriptions should be integrated into the text pages, and figure legends included on the data pages must be 11 pt or greater font, and should be succinct. Include publication-quality data that support the achievement of each of the scientific evaluation criteria (specified below under “evaluation criteria”).

**Biographical Sketches (2 page maximum).**

Regardless of team size, page limit is 2 pages. For each individual, include a brief biographical sketch of relevant experience and expertise, including only highly relevant publications and accomplishments.

**References cited**.

Provide full citation using standard format (for example, Vancouver reference style in EndNote).

**Appendix.**

1. Methods. Provide a complete description of protocol(s) used to develop retina organoid model systems and how it addresses the scientific evaluation criteria. Provide sufficient detail to ensure reproduction, reproducibility, and transferability. If applicable, address compliance with NIH and HHS research-related policies and regulations, including the [*NIH Guidelines for Human Stem Cell Research*](https://stemcells.nih.gov/policy/2009-guidelines.htm), NIH policy on human fetal tissue research described in Sec. 4.1.14 of the [NIH Grants Policy Statement](https://grants.nih.gov/grants/policy/nihgps/nihgps.pdf), the [*NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules*](https://osp.od.nih.gov/biotechnology/nih-guidelines/), and the [HHS Regulations for the Protection of Human Subjects](https://www.hhs.gov/ohrp/sites/default/files/ohrp/policy/ohrpregulations.pdf) (45 CFR 46). Appropriate biosafety practices should be employed; see [Biosafety in Microbiological and Biomedical Laboratories](https://www.cdc.gov/biosafety/publications/bmbl5/bmbl.pdf) as a reference manual. Address use of technologies covered by patents and intellectual property protection considerations and issues.
   1. If using human embryonic stem cells, lines must be listed in the [NIH Human Embryonic Stem Cell Registry](https://grants.nih.gov/stem_cells/registry/current.htm), and the NIH Registration Number must be provided.
2. Supporting figures and documentation may be included in the supplement, keeping in mind that reviewers can use their discretion as to whether to consider the optional supplemental data as part of their evaluation.

*May 2019*