

UCI Center for Neurotherapeutics

Request for Proposals: Enhancing CNS delivery of therapeutic agents

The UCI Institute for Neurotherapeutics (UCI CNT) is pleased to announce a call for multi-PI applications focused on the discovery of novel methods for the delivery of small molecules or biological agents to the CNS.

Background:

For progress in translational neuroscience research to lead to the development of effective therapies, **there must be a concerted effort to integrate physical science disciplines into the realm of translational neuroscience.** Nowhere is the need greater for the application of physical science approaches to neurotherapeutics research than in facing the challenge of achieving high-level delivery of small molecules and biologicals across the blood-brain and blood-CSF barriers to the CNS. There are many obstacles to effective CNS delivery. While small molecules can be tailored by medicinal chemists to penetrate these brain barriers based upon the selection of certain chemical features and/or inclusion of reactive group modifications, this process can be challenging. Also, if we are ever to reap the benefits of genome editing as a treatment for neurological diseases, then we must tackle the problem of how to deliver biological agents efficiently across these barriers.

Eligibility criteria:

To spur innovative, interdisciplinary research in the realm of CNS drug and biological agent delivery, *we are soliciting MPI projects focused on the development and testing of novel technologies for enhancing delivery across the brain barriers.* To ensure that these efforts are cross-cutting and truly interdisciplinary, we will require that applications include **at least one PI from a biomedical focused school (i.e. Medicine, Biological Sciences, or Pharmaceutical Sciences) and at least one PI from a physical sciences oriented school (i.e. Engineering or Physical Sciences).** Applications will be reviewed by a study section consisting of faculty from the different participating Schools. **We anticipate making up to three seed funding awards of up to \$150,000 this academic year, and we will favor projects with a clear path to opportunities for follow-on funding as part of a Center or Program Project application to the CIRM and/or NIH.**

Application Process:

To be considered for funding support, the two lead PIs must hold faculty positions at UCI and submit a **four-page** proposal (Arial 11 font with ½" margins). The required elements of the proposal are as follows:

1. **Title** of the Project (not to exceed 150 characters)
2. **Specific Aims** – State the overarching Aims of the Project, keeping in the mind the one-year time frame for this seed funding mechanism.
3. **Background/Significance** – Describe the premise upon which the project is focused, and provide the context of existing knowledge for the planned approach. State the intended use of the delivery method as appropriate for small molecules, biological agents, or both.
4. **Preliminary Results / Progress Report** – NOT REQUIRED for NEW proposals but a Progress Report of at least one page is required for RENEWAL applications along with a plan for follow on funding. For NEW proposals where the PI team has

experimental results in support of the proposal, their findings can be presented and will be evaluated by the review committee. **Figures with legends** are encouraged and should be included in the four-page main proposal.

5. **Research Strategy** – Describe the model system(s) being employed in the project. Delineate the study design, read-outs, and deliverables. Explain how successful completion of the project will set the stage for future experimentation and ultimate clinical application in CNS disease.
6. **Literature cited** – This section and the following addendum sections will NOT be counted as part of the proposal page limits.
7. **Time-line** – Provide a Gantt Chart addendum showing a breakdown of when essential components of the Aim(s) will be performed during the one year.
8. **Time expected to external funding** – Provide an addendum of up to one page describing potential expected sources for external funding and a likely time frame for achieving results necessary to support a proposal for extramural funding.
9. **Budget** – One page summary of expenses with brief justification of expected costs for one year. Also not considered part of the main text. Note that the budget may not include salary support for the PIs or Co-PIs. There will be no indirect costs for this intramural seed-funding mechanism. Total costs are not to exceed \$150,000.
10. **Biosketch** – NIH style, 5-page limit is required for all PIs and Co-PIs

Selection Process:

The UCI CNT will rank proposals based upon the strength of the scientific premise, the innovation of the approach, the feasibility of the project, and the potential for follow-on funding. Before making an award, UCI CNT leadership will contact highly competitive applicants to arrange a brief interview to clarify the rationale for drug development unit support and to discuss the potential plan for follow-on funding. Projects are only eligible for a single renewal, and this request may be made within 3 years of the initial funding award. Prospective applicants are encouraged to confer with UCI CNT leadership if they have questions about the application process.

PLEASE NOTE: Proposals are not only opportunities to obtain seed funding, but also are intended as opportunities for partnership development with the UCI CNT. We are seeking promising research concepts for identifying novel methods for brain delivery, which upon completion of the project will strongly position the PI to leverage into substantial extramural funding support, working closely with CNT leadership.

Please note that the PIs and UCI will retain full control of any intellectual property (IP) created during the project. We will also facilitate consultation with the Beall Applied Innovation Center for advice on patenting of IP, etc., if of interest to the PI team.

Proposal due date: February 2, 2024 @ 5 PM

Submit proposal to: rspitale@uci.edu