



Center for Immunotherapeutic Transport Oncophysics

NATIONAL INSTITUTES OF HEALTH
NATIONAL CANCER INSTITUTE

PHYSICAL SCIENCES-ONCOLOGY CENTERS
CENTER FOR IMMUNOTHERAPEUTIC TRANSPORT ONCOPHYSICS (CITO)

Request for Applications: Pilot Projects

Deadline

Applications due by 12 Noon CST, July 1, 2019

Funding Opportunity Overview

The Center for Immunotherapeutic Transport Oncophysics (CITO) focuses on identifying and understanding the multi-scale transport properties of immune cells and molecules (systemically and within the tumor microenvironment) and other biophysical properties of the tumor microenvironment, in order to ultimately develop effective cancer immunotherapies. Two Research Projects, the Transport Oncophysics Core (TOC), and the Education and Outreach Unit (EOU) support the accomplishment of our goals within this central theme. Project 1 aims to determine the transport phenomena of dendritic cell (DC) vaccines for breast cancer and pancreatic cancer and post-vaccination changes in the transport of endogenous DCs, effector T cells, and macromolecular drugs. This information will be used to improve vaccines and immune responses in these two cancer models. Project 2 aims to determine the effects of multi-scale transport phenomena of pancreatic ductal adenocarcinoma (PDAC) on the distribution of immune cells and nutrients in the tumor microenvironment, during tumor progression. This Project also examines the role of immune checkpoint, phosphatidylserine (PS), in suppressing immune response in the tumor microenvironment of PDAC. The TOC supports both projects with modeling, computational, and imaging capabilities (e.g., PET, intravital) to integrate the scientific data into parameters that ultimately inform the rational design of optimal cancer immunotherapeutics, and to improve the immunogenicity of breast and pancreatic cancers, both of which are historically known to be lowly immunogenic. The EOU serves as the communication and engagement platform for students, trainees, junior faculty investigators, and researchers of the CITO, those of the Physical Sciences-Oncology Network, and the scientific and lay communities beyond.

In this Request for Applications (RFA), pilot research projects are being solicited in the area of transport oncophysics, in the context of cancer immunology and immunotherapy. Applications may address any particular challenge and must complement or synergize with the current CITO Projects. Pilot projects may also augment the ideas, scope, technologies, and capabilities of the CITO. Scientific discoveries will help to determine the factors that can be used to improve the immunogenicity of breast and pancreatic cancers and help to rationally design effective immunotherapies. These pilot projects are intended as additional mechanisms for members of the CITO to work together, to cultivate an environment that encourages innovation and collaboration. Therefore, pilot projects may also form the basis for additional collaborative projects across the CITO.

Eligibility

Investigators who are part of the CITO are eligible to apply. Non-independent investigators and researchers (e.g., research associates, instructors, post-doctoral fellows, residents, and graduate students) are also eligible to apply as Principal Investigator (PI), with the full and written support of his/her direct scientific supervisor.

More than one application from an investigator may be submitted, provided each application is scientifically distinct.

To be competitive for this award, applicants must propose an interdisciplinary, multi-faceted, and collaborative strategy that promotes creativity and innovation. Collaborators from outside of the CITO are permitted and encouraged; however, funds cannot be distributed externally.

Awardees will be eligible to submit a competitive renewal application for future issues of this RFA (unless otherwise specified), but they are expected to demonstrate significant progress as a result of the original award.

Funding Information

A successful application will be awarded up to \$35,000 (direct costs) for up to one year. No cost sharing or matching is available or required. Once selected for funding, the pilot project's lead investigator(s) must submit a progress report every three months to the CITO Administrative Core. The funded project investigators will continue participating in scientific exchange activities with fellow investigators within the CITO. Spending from allocated funds for each project will be monitored and approved by the Administrative Core. Continuation of funding is contingent upon completion of research objectives and programmatic prioritization.

Criteria for Selection

Selection of awardees will be based on scientific merit and relevance to program priorities. Specific review criteria include: 1) alignment with the thematic concepts of the CITO; 2) emphasis on applying physical sciences (i.e., transport oncophysics) to cancer research; 3) scientific merit (strong hypothesis, rationale, objectives, feasibility); and 4) a high degree of innovation (e.g., merging interdisciplinary approaches, testing from unique perspectives, development or implementation of new tools).

Submission Requirements

The following components must be included in the application, in the indicated order and in one (1) PDF file:

- Cover Page (use template provided)
- Research plan (maximum 2 pages including figures and tables, if available)
 - Clinical Relevance
 - Significance
 - Innovation
 - Approach
- References cited (maximum 1 page)
- Budget (maximum \$35,000 direct costs for up to 1 year) (use template provided)
- Budget justification (maximum 1 page)
- Biosketch for each key personnel (current NIH format, maximum 5 pages)

Formatting Guidelines

- All files must be in one PDF, in the order indicated under “submission requirements”
- Font: Arial 11, Times New Roman 12, or Calibri 12
- Margins: At least 0.5 in. in all directions
- Page size: 8.5 in. x 11 in.
- Spacing: Single space or no more than 6 lines of type in one inch
- No headers or footers (these include page numbers, names, or other descriptors)

Applications must be received via electronic submission to cito-psoc@houstonmethodist.org by **12 Noon CST, July 1, 2019**.

Contact Information

Questions related to this RFA may be directed to:

Hanh H. Hoang, PhD

Center for Immunotherapeutic Transport Oncophysics (CITO)

Center Administrator

Office: 713-441-8227

Cell: 281-414-9572

Email: cito-psoc@houstonmethodist.org

Website: www.cito-psoc.org