CASIS is requesting that PI submitting proposals to the NSF/CASIS Collaboration on Transport Phenomena read the following sections and provide inputs directly to CASIS in response to these areas. Please submit these inputs before January 4, 2019. The Operational Approach section gives us further details of your ISS NL experiment that are necessary for us to confirm feasibility.

**Project Summary**

Please describe the proposed project. An abstract is appropriate, as is a less technical and more generalized overview. It is essential that this section clearly calls out:

1. Clear statement of the hypothesis and success criteria for experiment.
2. A brief overview of expected International Space Station U.S. National Laboratory experiment operations and crew interaction.
3. Why is ISS National Laboratory a necessary platform for this research (i.e. need for long term microgravity)
4. What is the relevance of the proposed space-based research to terrestrial applications, in agreement with the CASIS mission to use the ISS National Laboratory for benefits to life on Earth? Discuss both economic and social/humankind benefits.

**Operational Approach**

1. *Spaceflight Experiments*: PIs must provide estimates or suggested approaches, and ideal proposals will provide well-researched information on the below topics.
2. Operational Concept: Include a complete description of your project’s flight segment requirements, including sufficient information to determine size, weight, power, in-orbit timeline, and facility requirements as well as any special launch and return phase support requirements (e.g. Cold Stowage, orientation), if applicable.
3. Flight Hardware: Clearly delineate existing or proposed flight hardware to be used in the project. Explain plans to integrate flight hardware into the project timeline.
4. Facilities and Other Resources: Describe the role and availability of ground or space facilities or technologies necessary to complete applicable preflight work, ground controls, and space operations
5. *Ground-based experiments*: Clearly delineate ground-based experiments to be performed in preparation for flight and alongside flight experiments as controls. Specifically note the relevance and research plan for ground controls. Discuss comparisons with established ground experiments or space studies. Include enough data and experimental methods for reviewers to determine feasibility.