AST Transplantation and Immunology Research Network

2015 Research Priorities for Grant Request Applications

The following research priorities were developed by a working group of experienced AST physicians and scientists under the oversight of the Transplantation and Immunology Research Network (TIRN). These priorities are intended to provide applicants for AST research grants in 2015 with a set of emphasis areas that will receive special consideration by reviewers in ranking grants. However, it is important to note that we will still accept applications on *any* research topic as we recognize the importance of innovation in areas outside of these priorities.

There are three main areas:

- Basic Science is defined as anything in discovery science from molecules to cells to animal models.
- Translational Science is defined as anything from animal models designed specifically to advance translation of validated, mechanistic basic work to clinical applications to work with clinical human samples with clear translational impact.
- Clinical Science is defined as work done with human patients from data generation and mining to testing new protocols and therapies.

Basic Science

1. Develop and validate biomarkers of graft dysfunction and immune activation
2. Validate animal modeling as relevant to current clinical challenges (donor injury, autoimmunuity, infectious disease, immunological memory) that validate specific mechanisms or therapies
3. Identify and study novel immune modifiers (i.e. cellular transplants including stem cells, new drugs and biologics)
4. Pursue systems biology approaches to study the impact of therapeutics on molecular pathways that reveal new mechanistic insights (note: purely descriptive profiling and mapping of molecular pathways by any set of technologies is not responsive to this area)
5. Develop new tools to study and/or visualize the human immune response

Translational Science

1. Studies to identify and validate surrogate markers for long-term outcomes
2. Studies to determine the effects of cell therapies on protective immunity (e.g. does infusion of Tregs or MSC alter patient defense against microbial pathogens or cancer?)
3. Studies to define predictors and/or mechanisms of disease after transplant (i.e. cardiovascular disease, recurrent GN, de novo HLA antibodies or chronic rejection)
4. Identify specific molecules and/or molecular mechanisms that explain the roles of the microbiome in immunity and transplant outcomes (note: purely descriptive profiling of microbiomic changes is not responsive to this area)
5. The role of epigenetics in determining transplant outcomes

Clinical Science

1. Reducing post-transplant complications
2. Optimizing organ utilization (appropriate allocation and improving organ viability by interventions in the pre-transplant period including ex vivo conditioning)
3. Preventing late graft failure – cellular and humoral chronic rejection, recurrent and de novo
4. Improving the patient experience and addressing the challenges of therapy adherence

If you have any questions regarding these identified research priorities or about the grant application process in general, please email TIRN@myAST.org.