



- 1. Improving Longevity while also improving the quality of post heart transplant life by reducing/eliminating rejection and Cardiac Allograft Vasculopathy (CAV) by:**
 - 1.1. Integrating accurate non-invasive surveillance methods, technologies and biomarkers for care strategies, technologies, and methods towards EARLIER identification of the onset of acute cellular rejection (ACR), antibody-mediated rejection (AMR) and/or cardiac allograft vasculopathy (CAV)
 - 1.2. Development of therapeutics and/or therapeutic strategies for acute cellular rejection (ACR), antibody-mediated rejection (AMR) and/or cardiac allograft vasculopathy (CAV)
 - 1.3. Developing novel immunotherapies, identification of novel targets for immunosuppression, improving methods for monitoring and determining the optimal level of immunosuppression to prevent ACR, AMR, and/or CAV while reducing/eliminating secondary conditions that may arise due to immunosuppression (renal; infectious)
 - 1.4. Development and validation of better experimental models to study the underlying mechanisms, therapies, and/or prevention of CAV
 - 1.5. Developing more robust evidence for person-centered post-transplant care guidelines, including nutrition and exercise guidelines, and effective delivery of person-centered care.
- 2. Development of evidence-based strategies to improve longevity of adolescent recipients including:**
 - 2.1. Improving transitioning from pediatric to adult care/medication adherence
 - 2.2. Development of evidence-based tools for improving pediatric heart recipient and family education related to heart transplantation.
 - 2.3. Improving evidence-based diverse psycho-social support methods including technologies, hosted peer action groups, virtual visit models and remote metrics.
- 3. Identify and develop pre-transplant strategies, innovations or new technologies for children waiting for, and/or immediately after, a heart transplant that would improve post-transplant longevity including:**
 - 3.1. Applying advanced data analytics to better integrate extracardiac and cardiovascular candidate risk factors including degree of multiorgan dysfunction and frailty, race and ethnic group, and HLA and non-HLA sensitization.
 - 3.2. Innovative strategies that would improve organ availability, matching, utilization, and allocation.
 - 3.3. Pre-transplant modifications in donor heart immunogenicity
 - 3.4. Promotion of evidence-based optimization and standardization of pre-transplant protocols including donor selection and management.
 - 3.5. Pediatric scaled xenotransplantation and/or tissue engineering