

ISHLT and ISHLT Foundation Fund Research with Grants

The International Society for Heart and Lung Transplantation (ISHLT) announced more than \$400,000 USD in funding for research designed to improve care for patients with advanced heart and lung disease. The grants were funded by the ISHLT Foundation. These grants are the second of two 2023 ISHLT grant cycles.

The new ISHLT Multimodality Research on Heart Transplant Patient Care Grant, supported by CareDx, funds research that tests the utility of donor-derived cell-free DNA (dd- cfDNA) and gene expression profiling (GEP). The grant was awarded to two recipients.



ISHLT Multimodality Research on Heart Transplant Patient Care Grant, supported by CareDx

Awarded to: Natasha Aleksova, MD, MSc

Women's College Hospital, University Health Network in Toronto, ON Canada

Research Title: *Evaluating Novel Biomarkers for Cardiac Allograft Vasculopathy Diagnosis and Prognostication in the MARINER (Multiparametric Cardiac Positron Emission Tomography for Cardiac Allograft Vasculopathy Surveillance After HEart Transplantation) Randomized Controlled Trial*

Transplantation) Randomized Controlled Trial

Purpose: The multicenter biomarker study aims to evaluate the accuracy of novel biomarkers like donor-derived cell-free DNA (dd-cfDNA) for the diagnosis of cardiac allograft vasculopathy.

With the funding, this sub-study of the MARINER (Multiparametric Cardiac Positron Emission Tomography for Cardiac Allograft Vasculopathy Surveillance After Heart Transplantation) trial will investigate several important implications for heart transplant recipients. The findings from this study will determine the role of selected biomarkers alone and in combination in the diagnosis of CAV and aims to add to the armamentarium of non-invasive diagnostic tools for this important post-transplant comorbidity.



ISHLT Multimodality Research on Heart Transplant Patient Care Grant, supported by CareDx

Awarded to: Catherine M. Moeller, BEE, MD, MSc

Columbia University Irving Medical Center in New York City, NY USA

Research Title: *Enhancing Post-Heart Transplant Monitoring Through Non-Invasive Biomarkers: A Study on the Utility of Paired Use of Donor-derived Cell-Free DNA and Gene Expression Profiling*

Purpose: The project aims to enhance the overall process of heart transplant surveillance through the combined power of blood-based biomarkers, donor-derived cell-free DNA (dd-cfDNA) and peripheral gene expression profiling (GEP).

With the funding, the team will evaluate the diagnostic precision of dd-cfDNA and GEP and explore long-term implications on heart transplant patients including the relationship with the development of

donor-specific antibodies, graft dysfunction, the incidence of cardiac allograft vasculopathy, and the overall survival rates. They anticipate that this innovative method will facilitate the earlier detection of allograft rejection, significantly enhancing the quality of patient care in heart transplantation.

The new ISHLT Noninvasive Biomarker Research on Lung Transplant Patient Care with Donor-Derived Cell-Free DNA Grant, supported by CareDx, funds research that tests the utility of donor-derived cell-free DNA (dd- cfDNA) and focuses on the utility of dd-cfDNA to measure of allograft injury and detect rejection for lung transplant recipients. The grant was awarded to two recipients.



ISHLT Noninvasive Biomarker Research on Lung Transplant Patient Care with Donor-Derived Cell-Free DNA Grant, supported by CareDx

Awarded to: Jennifer Dan, MD, PhD

University of California in San Diego, CA USA

Research Title: *Gauging Immune Status in Lung Transplant Recipients*

Purpose: The study will assess cell-mediated immune function.

With the funding, Dr. Dan's team will correlate their cell-mediated test with standard of care histopathologic diagnoses, donor specific antibodies, and cell free DNA.



ISHLT Noninvasive Biomarker Research on Lung Transplant Patient Care with Donor-Derived Cell-Free DNA Grant, supported by CareDx

Awarded to: Jonathan Yeung, MD, PhD

University of Toronto, University Health Network in Toronto, ON Canada

Research Title: *Diagnosis of Lung Graft Dysfunction using Tissue-of-Origin Prediction of Cell-Free DNA*

Purpose: The study aims to devise a method to identify the tissue origin of cell-free fragments of DNA found in the perfusate of ex vivo perfused lungs and in the blood of lung transplant patients.

Dr. Yeung's team will use the funding to test the hypothesis that cell-free DNA from different tissues or organs are predictive of lung transplant outcomes.

CareDx, Inc., headquartered in South San Francisco, California, is a leading precision medicine solutions company focused on the discovery, development and commercialization of clinically differentiated, high-value healthcare solutions for transplant patients and caregivers. CareDx offers testing services, products, and digital healthcare solutions along the pre- and post-transplant patient journey.

The new ISHLT Pulmonary Function Test/Spirometry and Co-Relationships with Lung Transplantation and BOS Research Grant, supported by Zambon, supports research projects that focus on identifying novel ways for early detection and monitoring of BOS using pulmonary function testing, investigating the pathophysiology of BOS and its impact on lung function, and identifying trajectories of lung function decline in patients with BOS over time.



ISHLT Pulmonary Function Test/Spirometry and Co-Relationships with Lung Transplantation and BOS Research Grant, supported by Zambon

Awarded to: Alexander Graham, MD
Duke University in Durham, NC USA

Research Title: *Utilizing Population-Normative Spirometric Measures to Predict Bronchiolitis Obliterans Syndrome After Lung Transplantation*

Purpose: The study focuses on utilizing population-normative spirometry to identify lung transplant recipients potentially at risk of developing bronchiolitis obliterans syndrome (BOS).

With the funding, the team will utilize the Clinical Trials in Organ Transplantation 20 and Extension Study database, a longitudinal multicenter dataset of 803 primary lung transplant patients measuring spirometry and chronic lung allograft dysfunction (CLAD) events up to 5 years post-transplant, to evaluate the prevalence of abnormal spirometry and determine their associations with subsequent BOS development. They will explore whether these measures may be used to identify single lung transplant recipients at risk for BOS.

Zambon is a nonprofit organization dedicated to funding innovative research aimed at increasing longevity and improving the lives of children living with transplanted hearts.

For more information about ISHLT and ISHLT Foundation Research Grants, visit ishlt.org/research-data/grants-awards/research-grants.