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## VINCENT'S VALENTINE SENSE

With our focus on lungs, have a heart. From the Pulmonary Council Report to Extracorporeal Lung Support, from discussion groups to session highlights and from the Editor's Briefs to Canada and to Canada we must go for those sufferers of lung disease we have reached the age of enlightenment. We are out of the dark ages of lung transplantation and now we look forward to our scientific revolution with ex vivo lungs and scientific investigations to provide us the evidence to do what's best for our patients without bias, without prejudice and without preconceived notions. Also, we are well connected across the globe to clarify the ambiguities that remain and that will be with us for quite a while. Be sure not to miss the wisdom of My Little Black Book.

Vincent Valentine, MD  
Links Editor

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## IN THE SPOTLIGHT:

What's New for ISHLT 2013 in Montréal

### FREE WIFI

Free Wifi can be accessed throughout the convention center, in the sessions, in the exhibit hall, in the public spaces, even outside and door-to-door to many of the official ISHLT hotels! We will have people tweeting about the sessions during the sessions – look for the ISHLT meeting hash tag and plan to engage!

### POSTER MENTORS & DISCUSSANTS

In an effort to enhance the General Poster Session experience for the 2013 ISHLT Annual Meeting and to better communicate the value the Society places on the work presented in Poster format, we plan to delegate experienced members to act as Poster Mentors who will be charged with the responsibility of reviewing a small number of abstracts prior to the meeting so that they can have a productive face-to-face discussion with the Poster presenter who will be present at their posters during the attended Poster viewing sessions. In addition, we will be pairing our senior member mentors with more junior members who will be denoted as Poster Discussants with the aim of developing experience with the interpretation and analysis of this particular format. This should facilitate an instructive dialogue and engage the poster presenter in a slightly more formal manner than the previous ad hoc arrangements. Be sure to join us in the poster hall each day after the last oral sessions for these informative and lively discussions.

### JUNIOR FACULTY AND TRAINEE COUNCIL MENTOR LUNCHEON

The JFTC is excited to extend an invitation to ISHLT's trainee and junior faculty members to attend our annual JFTC Mentor Luncheon Meet & Greet! This year's luncheon will take place on Wednesday, April 24th, 2013 from 12:15-2:15 PM at the Palais des Congrès de Montréal. We have invited several of our distinguished ISHLT faculty to join us while we discuss a variety of topics relevant to early career development. The session is casual and open, and will include plenty of time to ask questions of our renowned mentors, all of whom are excited to continue in the tradition of guiding future leaders in the field. The session is available to any conference registrant who is a trainee or in the early stage of his/her career; however pre-registration for the event is required. Registration is limited to the first 100 student/resident/fellow members of ISHLT who are registered for the meeting. Cost is \$15.00 which includes a box lunch. See [REGISTRATION](#) for more details. This event is an additional but separate opportunity from the JFTC Paired Mentorship Program, which facilitates individual mentorship pairings based on your specific academic interests. Details for the individual Mentor Program will be forthcoming in a future email announcement. We hope that you will participate in both the Mentor Program and the Luncheon, and we look forward to seeing you in Montréal!

–Jason Gluck, Sitaramesh Emani, and Pali Shah

### ABSTRACT SESSION HIGHLIGHTS

Basic Science and Translational Research

New Frontiers in Cardiothoracic Organ Regeneration - From Cosmetic to Prosthetic will showcase the rapid developments in bioengineering which are already impacting on heart and lung transplantation, and which will transform our field into the future. Chaired by Sonja Schrepfer and Shaf Keshavjee, the session will cover the breadth of

organ rejuvenation from the relatively cosmetic improvements which can be made during ex-vivo lung perfusion to the 'knock-down and rebuild' approach to organ replacement achieved using decellularised matrix.

The session combining the highest scoring abstracts on exploration and modification of the immune system, Exploring and Modifying the Immune Response - Cells, Antibodies, and Tolerance, will feature presentations on the impact of natural killer cells and T-cell deficiency on graft survival and BOS in lung transplantation. Innovative therapeutic approaches discussed in this session include pre-clinical evaluation of JAK 1/3 inhibitors and MHC-encoding chitosan-DNA microparticles in animal models.

During The Fundamental Difference- Innate Immunity and Xenotransplantation, new research on the challenges of platelet activation and aggregation in the setting of xenotransplantation and lung reperfusion will be presented. Further presentations evaluate Caspase 1 as a serum marker of myocardial remodeling and pre-clinical data on therapeutic use of VEGF-C/D for improved cardiac allograft survival.

#### Heart Failure and Transplantation

##### Heart Failure: What's New in Translational Science

CD34+ transplantation, post-transcriptional regulation, and miRNA modulation are center stage. For your pleasure, progenitor cells will circulate, free fatty acid will challenge glucose in the oxidation contest, and expression of cardiolipin biosynthesis will change your way of thinking about heart failure as a simple clinical phenomenon.

##### Heart Failure: Focus on the Right Heart

The delicate, innocent, yet vulnerable Right Ventricle brings together all corners of the ISHLT. Here are some of the most recent RV carols manufactured and interpreted for you by the Clinical Heart Failure Choir in six tasty chapters including prognosis, sildenafil, pulmonary wedge pressure and arrhythmogenic cardiomyopathy.

##### Heart Transplantation: Can We Improve Transplant Risk Assessment and Outcome Prediction?

Titanic dilemmas and naïve questions—in an effort to save as many lives as it is possible with our more and more limited donor heart resources—will be prepared and served to you in the form of six short stories about HIV-positive recipients, UNOS status modifying human fate, kidney-heart brotherhood in transplantation, and others.

##### Heart Transplantation: News from the Registries - What We Need To Learn To Achieve Long-Long Term

Very long term survival and guidance to support customized strategies: two holy grails that transplant clinicians cannot achieve with the limited everyday single center experience. In this concurrent session, evidence confirming or contradicting common experience-based concepts will be served, thanks to robust data regarding age and causes of death, racial differences and PRA, oversized hearts and recipients' pulmonary hypertension, and long term survival.

##### Coronary Artery Vasculopathy in 2013 - Diagnosis, Prognosis and Treatment

This concurrent session will provide a late breaking overview of a classical topic at the ISHLT meeting. Ranging from novel diagnostic views to detect prognostic relevant CAV, to the effects of mTOR inhibitors on coronary morphology and cardiovascular events, the audience will have a great opportunity to receive a full update on current and future perspectives on CAV diagnosis, prognosis and treatment.

##### Living with a Transplanted Heart - A Narrow Pathway in the Jungle

A successful heart transplant surgery is just the beginning of a hopefully long, but surely complex, journey in a minefield, which often distances recipients' life from the mirage of healthy normality. The dream of a successful pregnancy, the amplified negative effects of excessive food intake, the torture of receiving periodical invasive procedures, the nightmare of facing chronic and hazardous diseases of organs other than heart: the management these side-effects of our life-saving strategy—substituting one deadly disease with a bunch of dangerous others—will be discussed in this exciting session that will provide audiences with compass directions to recover the many patients wandering in the jungle.

##### Are All Antibodies Equal? Predicting, Managing and Treating the Risk for AMR

After being "easily" accustomed to pathologists' biopsy diagnoses—sometimes disconnected from patients clinical picture—transplant clinicians now must learn to deal with immunogenetists, a new species of lab-people providing reports

containing obscure antibody names and typing, that may or may not be coherent with pathologists' readings, and may or may not trigger a treatment. In this session, the audience will have a unique opportunity to attend cutting edge presentations unraveling the complexities of different kinds of HLA antibodies, their time course, and how to manage organ allocation and post-transplant treatments. Returning back to clinic attendance, participants will have new tools to build a coherent view and management of the clinical and laboratory picture of sensitized patients.

#### Mechanisms and Markers of Acute Rejection: Within and Without Biopsy Sampling

Endomyocardial biopsy is still considered a gold standard for the diagnosis of rejection in clinical practice. However, established grading for T-cell mediated rejection, but also for antibody-mediated rejection, does not always include all the available information that could be gained from the myocardial specimens. On the other hand, non-invasive markers for rejection diagnosis haven't conquered clinical practice yet. In this visionary concurrent session, the audience will be excited by novel ways of looking at a biopsy to understand different mechanisms of rejection, insights on promising non-invasive methodologies for rejection diagnosis, and global clinical views on the interplay between histology, DSA and hemodynamics.

#### Infectious Diseases

##### Concurrent Session 18: From Fungus to Virus - The Microbiome Elicited

Come one, come all, from virus to fungal ball! As our knowledge grows of microbial colonization and growth in the lung allograft, share in these new findings and the implications they have for our lung transplant recipients.

##### Concurrent Session 25: MCS 6: Infectious Issues and Pump Failure

One of the biggest limitations in mechanical circulatory support today remains infectious complications and pump failure. Come pump up your own knowledge of these issues with a host of abstracts on these complications and their implications for patient management.

#### Junior Faculty and Trainees

The Junior Faculty Trainee Committee is again hosting the very popular session, "Clinical Case Dilemmas in Thoracic Transplantation." Test your own clinical skills as junior faculty present clinical conundrums to the fields' experts. Ask questions, share management strategies, and enjoy intellectual banter.

#### Mechanical Circulatory Support

A record 337 MCS abstracts were submitted to the 2013 ISHLT Annual meeting. This made the job of the planning committee—to prepare a terrific MCS program—quite easy! The top graded abstracts were selected for presentation in 11 oral and 2 mini-oral sessions. Two oral sessions will explore specifics of different devices as well as patient selection considerations. Another session will focus on physiological changes seen after VAD implant. Several sessions will focus on key complications seen with MCS support and discuss approaches to prevent and treat these. A review of clinical outcomes will be provided and approaches to maximize patient quality of life and survival after VAD placement discussed. A separate session will analyze the cost of achieving longevity and good quality of life in advanced heart failure patients through MCS support. A number of additional topics will be addressed during MCS poster sessions.

And, finally, do not forget to attend the 'Great Debates in MCS' symposium session. Several of the pressing topics explored by investigators in oral and poster submissions will be addressed by thought leaders from different parts of the globe in this engaging session: Should Stable LVAD Patients Receive Organ Allocation Advantage?; Should Sensitization Warrant Higher Priority on the Waiting List?; Does Mechanical Support Work for Those With Poor Social Support?; Are VAD Destination Therapy and Hemodialysis Compatible?

In summary, MCS has become a dynamic force in our Society, and the 2013 MCS program promises to be a platform to advance MCS science through scientific presentations, discussions and networking.

#### Nursing, Health Sciences & Allied Health

##### Implications and Innovations throughout the Lung Transplant Trajectory

This session sponsored by the NHSAA Council is sure to interest clinicians from a variety of disciplines who are involved in lung transplantation. Several of the presenters will discuss predictors of post-lung transplant outcomes, such as hospital readmission, medication adherence, health related quality of life, and survival. Other presenters will discuss the

impact of novel interventions, including a consent process where recipients choose their donors and a stress reduction intervention for family caregivers. The research findings will be directly relevant to clinical practice and quality improvement in the setting of lung transplantation.

#### MCS and Heart Transplantation: Assessment, Outcomes and Interventions

This session sponsored by the NHTSA Council combines topics of interest to clinicians who are involved in the care of patients with heart failure facing MCS or heart transplantation. Several of the presenters will discuss the challenges of managing MCS devices such risk for hospital readmission and driveline site selection. Other presenters will discuss the impact of interventions on heart transplant candidates and early and long-term outcomes among heart recipients, including cardiac rehabilitation on cardiac vasculopathy, psychosocial assessment on medical outcomes, and the relationships between adherence, mental health and hygiene behaviors. The research findings will be directly relevant to clinical practice and quality improvement in the setting of heart failure and heart transplantation.

#### Pediatric Transplantation

There are few cities in the world that own Montréal's mixture of buzz and vitality, a taste of Europe in North America. We believe the Pediatric content of the Abstract Sessions at the 2013 ISHLT Annual Meeting reflect this great mixture, combining the best of Pediatric Heart and Lung Transplantation, Pediatric Infectious Diseases and Mechanical Circulatory Support in Children.

There are three Oral Sessions planned including "Pediatric Heart and Lung Transplantation", "Pediatric Heart Failure and Heart Transplantation" and "Mechanical Circulatory Support in Children". The Session on "Pediatric Heart and Lung Transplantation" focuses on aspects such as de novo donor specific HLA antibodies and rejection and graft loss in Pediatric heart transplant recipients, CMV specific immunity, the lung microbiome and the development of BOS in Pediatric lung transplantation, and Pediatric thoracic multi-organ transplantation.

In addition, there is a Mini Oral Poster Session on Pediatrics and Infectious Diseases.

Finally, more than 40 abstracts were selected for Poster Sessions, the largest number ever of Pediatric abstracts accepted for presentation at an ISHLT Annual Meeting. So you better make your travel arrangements and register for the 2013 ISHLT Annual Meeting in Montréal in April to be part of the ever growing Pediatric cardio-thoracic transplant community.

#### Pharmacy and Pharmacology

The Pharmacy and Pharmacology Council, now in its second year, continues to evolve in developing unique educational programming focused on pharmacologic therapy for the ISHLT Annual Meeting. For the 33rd Annual Meeting, the Program Committee has designed sessions and symposiums showcasing innovative science and real world clinical applications. Our programming which focuses on drug therapy lends applicability across all disciplines represented by the ISHLT membership.

There are two sessions sponsored by our council this year. The first is an Oral Scientific Session on Friday titled, Innovative Pharmacotherapeutic Approaches to Thoracic Transplant and Mechanically Assisted Patients. This session explores novel uses of drug therapy to improve outcomes in multiple therapeutic areas including treatment strategies for rejection and infection in heart and lung transplant patients as well as pharmacologic treatments for pulmonary hypertension in patients requiring mechanical circulatory support.

The second, on Saturday, is a symposium that continues our successful "Lifecycle Journey" series creating an enduring case to create a panel facilitated and audience supported best practice based discussion at predefined key "journey intervals." This year the session is titled, A Lifecycle Journey in Cystic Fibrosis and Lung Transplantation. In this session, members of the Pharmacy and Pharmacology and the Pulmonary Transplantation Councils will focus on four "journey points" which include: (1) listing considerations and pre-transplant infections, (2) peri-operative and immediate post-operative management issues, (3) metabolic and interaction considerations to drug dosing and (4) immunomodulation strategies for the management of bronchiolitis obliterans syndrome.

In addition, several posters selected by our council demonstrating the diversity and scope of pharmacotherapy as applied to multiple areas, including; Heart Transplantation, Lung Transplantation and Mechanical support will be presented.

### Pulmonary Hypertension

The 2013 meeting promises to be another banner conference for pulmonary hypertension. A total of 53 abstracts will be presented covering a broad variety of clinical and translational research topics in the field. The Thursday oral session entitled "All About Outcomes" will lead off with the much anticipated initial results from the PROSPECT registry of 331 PAH patients treated with the room-temperature stable epoprostenol with arginine (Veletri®). The group from the University of Minnesota will present survival data using a simplified version of the REVEAL prediction model that does not require right heart cath or pulmonary function variables. Vizza et al will present their intriguing finding of a relatively high proportion of extra-cardiac causes of death in PAH. As the use of extra-corporeal support continues to expand worldwide, the Papworth group will present their experience with this modality following thrombo-endarterectomy for chronic thrombo-embolic pulmonary hypertension. Granton and co-workers will show the results of a microarray expression study in explanted PAH lungs demonstrating prominent upregulation of osteopontin, a potent vascular smooth muscle mitogen. The session will be rounded out with a paper from Rigshospitalet, Denmark on pulmonary hypertension in end-stage IPF.

Reflecting the increasingly recognized importance of right ventricular (RV) function in PH, two oral sessions will be devoted to this topic on Friday. The morning session, "Right Ventricular Matters" will include 2 presentations on the use of RV strain and other echocardiographic derived indices of RV function as predictors of outcome in PAH. Large animal models of RV failure were used in three studies to characterize RV function, assess RV angiogenesis and explore the feasibility of mechanical RV support. Wrapping up the session will be the team from Sapienza University in Rome presenting data on the impact of RV dyssynchrony in PAH. Later in the day, 6 more outstanding abstracts on "Right Ventricular Assessment and Function" will be presented. Investigators from Lyon, France will report on the prognostic value of RV ejection fraction in PAH. Researchers from Alberta, Canada will describe the role of HIF-1 $\alpha$  signaling in RV myocardium. Saggari and colleagues will report their experience with parenteral treprostinil therapy on RV function in PH associated with pulmonary fibrosis. Finally, the group from Allegheny General Hospital in Pittsburgh will report on echocardiographic assessment of the RV as a predictor of RV fibrosis, as determined by late gadolinium enhancement by MRI and the prognostic value of the latter.

### Pulmonary Transplantation

The Pulmonary Council is looking forward with great excitement to the ISHLT annual scientific program in Montreal April 2013. Council members and the Program Committee have worked diligently to create a program that includes several valuable sessions and symposia that are vital to setting the tone for an outstanding educational forum for all ISHLT attendees.

The scientific program itself is filled with vital symposia and sessions presenting a forum for challenging debates and discussions on important issues regarding lung transplantation.

There are eight total symposia throughout the meeting, which cover a broad range of important topics. Some of these are collaborative efforts with other councils (including pathology, basic science, nursing, health science and allied health, and pharmacy).

Along with the scientific program, there are a large number of original scientific investigations focused on both basic and clinical science that were submitted for the meeting. These topics will be highlighted in six oral presentation sessions (thirty-six abstracts), eighteen mini-oral presentations and more than eighty posters for presentation.

Translational science will be highlighted in the "Bench to Bedside" session. Topics will range from BOS to infection.

There will be several sessions highlighting antibody mediated rejection (AMR) in lung transplantation. AMR has become increasingly more recognized over the last several years; however, there still is considerable controversy on its diagnosis, unique features and treatment. Two symposia in collaboration with the pathology and basic science councils will focus

on discussions that will hopefully lead to better understanding of this issue. The interest in the current topic is also featured in the oral, mini-oral and poster sessions.

Bronchiolitis obliterans remains a major complication after lung transplant and is the major cause for late morbidity and mortality. We now understand that different processes can lead to allograft dysfunction. The term chronic lung allograft dysfunction (CLAD) has been incorporated to include these other processes. One symposium will provide state-of-the-art information on these issues and an abstract session will update us on its pathophysiology.

Another area of significant interest to our council members is how to best support patients with end-stage lung disease while bridging them to a successful lung transplant. A symposium will bring experts together to discuss techniques of bridging patients that are critically ill prior to transplant. A Sunrise symposium will discuss patient selection as part of this ongoing debate.

Immunosuppression is also featured prominently with an abstract session presenting interesting conundrums on the use of different therapeutic agents. This session will be nicely paired with a symposium on T cells and their roles post-transplant.

Other interesting sessions include outcomes after lung transplantation. Primary graft dysfunction is featured in an abstract session and a Sunrise symposium will discuss patient-reported outcomes. Two additional Sunrise symposia have been planned: one will assess anastomotic issues and the utility of bronchoscopy; the other will present different lung allocation systems around the world and discuss their merits and limitations.

Finally, common topics of interest that will also be discussed include a joint Saturday symposium with the Pharmacy council which assesses the journey of a cystic fibrosis patient through transplant. It discusses many unique pharmacologic, infectious challenges that this group of patients face, while undergoing lung transplantation.

We look forward to an exciting annual meeting that will stir discussion and add further momentum to the already energetic academic lung transplant community.

#### ADDITIONAL MEETING LINKS

[Registration & Hotel Info \(Many of the ISHLT hotels are sold out. Book your hotel reservations now!\)](#)

[Exhibit Info](#)

[Scientific Program](#) (including links to the 2013 Scientific Program, Daily Schedule At-A-Glance, Daily Timetable and more)

[Information for Speakers](#)

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#### **PULMONARY TRANSPLANT COUNCIL REPORT**

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Since the ISHLT meeting in Prague last April, the Pulmonary Transplant Council has been hard at work. Our Council has taken on several new initiatives, including working on a revision of the lung transplant recipient selection guidelines. These guidelines were last published in 2006, and many of us on the Council thought it was an appropriate time to revisit the selection criteria given the changes in the allocation system and the willingness of many programs to consider patients that previously would have been deemed too high risk for transplant. Also, given that our field has continued to make important advances in the use of mechanical support systems, sicker patients are being safely bridged to transplant. We look forward to presenting new Selection Guidelines in 2013.

A number of suggestions for future Guidelines development were discussed during the Pulmonary Council meeting in Prague. This included standards and guidelines in lung donor management working closely with our colleagues in the

organ procurement area and in post lung transplant management guidelines. The postoperative management guidelines would mirror a similar effort put forth by our cardiac colleagues a few years ago.

Our Council has also begun to make meaningful efforts toward establishing registries and databases that will provide programs access to clinical information regarding two important areas of innovation in our field: ex vivo lung perfusion (EVLN) and donation after cardiac death. Important data in each of these two areas need to be collected in order to inform clinical decisions in these rapidly evolving areas. The Council encourages full participation of all programs engaging in these activities so the data will be as robust as possible.

Also, our Council is considering conducting a thorough overview of ex vivo lung perfusion, focusing especially on how to establish an EVLN service, the use of acellular versus cellular perfusion, and indications for the use of EVLN. We expect that centers with significant experience in this area will lead the effort and help less experienced centers avoid "reinventing the wheel." This sort of clinical collaboration in newly evolving areas is key to the continued advancement of lung transplantation, and I believe the Pulmonary Transplant Council can take a lead role in this.

Thank you for your efforts in making the Pulmonary Transplant Council an active force for progress this year, and I look forward to seeing you all (for the Louisianans among us: ya'll) in Montréal in April.

Disclosure Statement: The author has no conflicts of interest to report.

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## **LUNG TRANSPLANTATION IN CANADA: ONLY JUST THE BEGINNING**

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As the annual meeting this year comes to Montréal, it is a great opportunity to take a look back at the role Canada has played in the development of the field of lung transplantation, as well as to look at the nation's ongoing contributions. As a therapeutic modality just emerging from its infancy, huge strides have been made in a short period of time to improve patient outcomes in both survival and quality of life.

Going back in time, the first human lung transplant was performed fifty years ago, on June 11, 1963, south of the border at the University of Mississippi by Dr. James Hardy. The patient was treated post-transplant with high-dose prednisone, azathioprine, and cobalt irradiation. Unfortunately, the patient succumbed to anastomotic complications 18 days later.

Over the ensuing 20 years, several attempts at lung transplantation were made, including the first successful heart-lung transplant at Stanford University in 1981. Dr. Joel Cooper, a thoracic surgeon who settled in Toronto, Canada in 1972, began experimenting on single lung transplantation in dogs, and found that prednisone's anti-inflammatory properties were leading to impaired wound healing and subsequent bronchial anastomotic failure. In 1983, just after cyclosporine was approved for clinical use, Dr. Cooper met Tom Hall, a 58-year-old hardware executive who suffered from idiopathic pulmonary fibrosis. He candidly explained to Tom that only 44 lung transplants had been attempted worldwide and none of the patients lived more than a few weeks. Hall eagerly responded, "I'm grateful to have the opportunity to be No. 45."<sup>1</sup> Tom was maintained after his single lung transplant on azathioprine, cyclosporine, and low-dose prednisone, and had no difficulties with anastomotic leak. He survived for 6 years after his surgery before passing from renal failure.

With such encouraging results, Dr. Cooper forged ahead, completing the first successful double lung transplant in 1986 on Ann Harrison, a Canadian with end-stage emphysema, and the first successful double lung transplant for cystic fibrosis in 1988. Soon after, he moved to Washington University, although innovation in the Toronto program did not cease.

Dr. Shaf Keshavjee joined the faculty at the University of Toronto in 1994. Under his guidance, Toronto General Hospital was the first center in North America to implement the use of the Novalung interventional lung assist device in 2006 as a means of bridging to transplant. At the forefront of his innovations, acellular normothermic *Ex-Vivo* Lung Perfusion has

changed the global approach to the management of harvested lungs, and its use is now spreading internationally. Ever more exciting, research in Toronto in *ex-vivo* reparative IL-10 gene therapy is already underway.

The Toronto lung transplant program receives approximately 350 new referrals a year, and currently performs between 100-120 lung transplants per year. But although Toronto often basks in the country's spotlight, they are not the only Canadian center making leaps and bounds in the progress of lung transplantation. The University of Alberta has completed 507 lung transplants by the end of 2011 since the program started in 1986. They manage complex congenital cardiac and pulmonary cases for Western and Central Canada, and the program has broadened their care through telecommunication and multiple satellite clinic sites. Between their program in Edmonton and the BC Lung Transplant program in Vancouver, where volumes have nearly doubled in the past two years, coverage to all of Western Canada is provided. In Winnipeg, Dr. Helmut Unruh led the University of Manitoba to be the first program in Canada to perform a living lobar lung transplant, and the program provides care to Central Canada. Le Centre Hospitalier de L'Université de Montréal services Québec, providing 30-40 transplants a year.

Lung transplant activity across Canada has doubled in the past decade and by the end of 2010, 1554 lung transplants had been performed across the country, with 1387 lung transplant recipients followed across the country. In the past decade the volume of bilateral lung transplants has also increased by 85%, and 3-year survival of all-comers sits at a respectable 77.5%<sup>2</sup>.

Availability of donor lungs continues to be a challenge across Canadian provinces, and has been the impetus for driving innovation such as *ex-vivo* lung perfusion and Donation after Cardiac Death. Canadian institutions currently use a dichotomous Status Ranking system to allocate donor lungs, and analysis of how the UNOS-based Lung Allocation Score predicts survival in a subset of the Canadian population will be presented at the upcoming annual meeting in Montréal.

As the world comes to Canada in April, we hope that the spirit of innovation in the face of challenge, which has been a source of motivation for Canadian physicians, surgeons and scientists, will continue. International collaborative efforts will lead the way to a future with less chronic allograft dysfunction and overall better post-transplant survival. With all that has been accomplished in such a short span of fifty years, there is still yet much to do.

Disclosure statement: The author has no conflicts of interest to disclose.

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1. Decker, C. *Cooper broke lung transplant barrier*. Washington University archives of record articles. (St Louis, MO, 1995)
2. Canadian Institute for Health Information, *Canadian Organ Replacement Register Annual Report: Treatment of End-Stage Organ Failure in Canada, 2001 to 2010* (Ottawa, Ont.: CIHI, 2011).

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## **EXTRACORPOREAL LUNG SUPPORT (ECLS): A TECHNOLOGY REVOLUTION AND IMPROVED OUTCOMES FOR LUNG TRANSPLANT PATIENTS**

Marcelo Cypel MD<sup>1</sup>, Matthew Hartwig MD<sup>2</sup> and Shaf Keshavjee MD<sup>1</sup>

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Much has been learned in the last decade about ECLS management. The well-known term Extracorporeal Membrane Oxygenation (ECMO) has now become obsolete since artificial lung devices can now be used to treat other conditions associated with end-stage lung diseases such as hypercapnic respiratory failure or right ventricular (RV) dysfunction associated with pulmonary hypertension (PH). Thus ECLS seems to be a more inclusive and appropriate term. Progressive improvements in technology especially with new centrifugal pumps, polymethylpentene membranes, cannulas, and heparin-coated circuits have allowed safer and efficacious institution of this therapy for lung transplant patients.

ECLS can be applied in lung transplantation (LTx) in 3 situations: 1) Bridge to transplant in patients with severe refractory respiratory failure, 2) Intraoperative support, 3) Management of severe primary graft dysfunction (PGD) after transplantation.

### Bridge to transplant

Significant advances have been made in this area. Tailoring of ECLS configuration and devices based on the patient's physiology has been a significant improvement in practice in comparison with the past where veno-arterial (VA) ECLS was almost the sole mode of application<sup>1</sup>. Most centers today would consider single cannula veno-venous (VV) ECLS for most patients with hypercapnic and/or hypoxemic respiratory failure. The advantage of this set-up is the provision of excellent lung support (in contrast to femoral VA set up where central hypoxia often develops) that allows a significant decrease in ventilator settings, extubation of the patient and even ambulation in some cases. In our experience in Toronto, more than 50% of patients on ECLS will be off the ventilator prior to LTx. The absence of groin cannulation facilitates patient mobilization and physiotherapy<sup>2</sup>. Thus, ECLS in 2013 represents an opportunity not only to "gain more time" to a life-saving transplant, but also the chance to improve physical condition prior to the transplantation procedure. A second subset of patients on lung transplant wait lists includes those with PAH and severe RV dysfunction. We have used the interventional lung assist device (Novalung) in a pumpless mode placed in parallel with the native lung (pulmonary artery to left atrium)<sup>3</sup>. In our experience in Toronto, the use of this setup completely decompressed the right ventricle and stabilized patients with cardiogenic shock secondary to PAH. A disadvantage of this set up is the need for a sternotomy and open chest procedure. Thus, less invasive techniques evaluating a similar approach are being investigated<sup>4</sup>.

General outcomes in experienced ECLS and lung transplant centers have demonstrated that at least 80% of these patients will survive to transplantation<sup>5-7</sup>. Outcomes after transplantation are also quite acceptable, although incidence of PGD seems to be increased in this population<sup>8</sup>. With improved outcomes of ECLS bridge to transplant, a major challenge in the next few years will be to determine criteria for patient selection and organ allocation policies. Currently, most groups offer ECLS bridge to wait list patients with younger age and absence of significant comorbidities. To illustrate this, we would offer ECLS to a 30-year-old patient with Cystic Fibrosis without hesitation, but would be very concerned to consider a 65-year-old patient with pulmonary fibrosis, secondary PAH and some degree of coronary artery disease. A more liberal approach may be possible in the future with the rapid improvement in ECLS technology and outcomes.

### Intraoperative ECLS

Many centers have now adopted ECLS when cardiopulmonary support is required during transplantation procedure instead of full cardio-pulmonary bypass (CPB). Some of the advantages of ECLS over CPB include a simpler set-up, significantly lower anticoagulation requirements (usual activated clotting times (ACT) of 180-220 sec), decreased transfusion requirements, and the possibility to continue ECLS into the post-operative period to protect the graft in patients with PAH for example<sup>9</sup>. One recent study compared ECLS with CPB in LTx and demonstrated significantly less complications and better survival for the ECLS group<sup>10</sup>.

### ECLS for Primary Graft Dysfunction (PGD)

PGD remains the leading cause of early post-transplant morbidity and mortality. After excluding reversible causes, supportive treatment includes optimization of ventilator parameters, inotropic support, diuresis, and nitric oxide. A strategy of early institution of VV ECLS appears to be beneficial in patients severely affected by PGD<sup>11</sup>. At Duke University we often implement ECLS support when recipients demonstrate decreasing pulmonary compliance (e.g. plateau pressures > 34-36 cm H<sub>2</sub>O) or hypoxia requiring high F<sub>i</sub>O<sub>2</sub>. Our preferred VV cannulation is via a dual-lumen right internal jugular venous cannula. This allows for maximal patient mobility and rehab potential while on ECLS<sup>2</sup>. An alternative VV strategy includes a venous catheter in the right femoral vein and an "arterial" cannula in an internal jugular vein. Cannulas are placed percutaneously using a modified Seldinger technique. Transesophageal echo or fluoroscopy guide the insertion of cannulae, while the level of recirculation in the system determines the optimal placement of circuit in-flow and out-flow ports. ECLS flows are typically 2-4 liters/minute with a sweep gas flow adjusted to maintain the pCO<sub>2</sub> close to 30 mm Hg so as to minimize pulmonary vasoconstriction. During VV support, a protective ventilator strategy should be initiated that is similar to what has been described in the support of ARDS patients. Weaning from VV ECLS simply involves discontinuing membrane gas flow and increasing ventilator parameters as needed but still on protective settings. Patients are often weaned from ECLS within one week. Pulmonary vascular resistance decreases following institution of ECLS and pulmonary capillary leak appears to resolve more quickly. Using

this strategy, the 30-day survival in patients requiring VV ECLS for PGD should be approximately 90%; a much improvement compared with the 50% described previously. However, long-term maximum allograft function may still be attenuated in patients severely affected by PGD<sup>12</sup>.

Disclosure statements: The authors have no conflicts of interest to disclose.

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#### **BRIDGE OVER TROUBLED WATER: THE ISHLT LUNG TRANSPLANT DISCUSSION GROUP**

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“When you’re weary, feeling small (in the world of lung transplantation),  
When times get rough, and friends just can’t be found,”  
You can turn to the ISHLT Lung Transplant Discussion Group!

In 2011, with the help of Dr. David Baran, Director of Heart Failure and Transplant Research at Newark Beth Israel Medical Center in Newark, NJ, Dr. Remzi Bag, then-Medical Director of Lung Transplantation at Emory University, and Dr. Lianne Singer, Medical Director of Toronto Lung Transplant Program, created a virtual discussion group for the international lung transplant community. Members are added by invitation after contacting Dr. Bag who remains the group moderator. Since then, hundreds of emails have been exchanged with questions, thoughts, and wisdom pertaining to lung transplantation. The tone is informal with a sense of camaraderie and moral support and a common goal to share solutions and ideas in the face of the unknown, the scary, and the impossible.

Just in the last 6 months, the following topics have been discussed:

- Retransplantation under ECMO;
- Donors with asthma;
- Post-transplant kaposi's sarcoma, hepatitis C, restrictive allograft syndrome, use of cetuximab for skin cancer, and the use of splenectomy and bortezomib for donor-specific antibodies;
- Lung transplant candidates with CF and Aspergillosis, with macrolide-resistant mycobacterium avium complex, with a tracheo-esophageal fistula, with MGUS, with CVID, with AML, with CLL, with Birt-Hogg-Dube syndrome, or with tuberous sclerosis and renal disease;
- Combination transplants including lung-kidney, lung-liver, and lung-one marrow transplant.

For example, the Kaposi's sarcoma story unfolded as follows. One ISHLT Lung Transplant Discussion Group member emailed the patient's story: "We have a patient who is 6 months post lung transplant for sarcoidosis who presented with respiratory failure and bilateral reticulonodular infiltrates. VATS lung biopsy is consistent with Kaposi's sarcoma. HHV-8 in blood positive at 300 DNA copies/mL and HIV is negative. Tissue stain for HHV-8 is pending. Immunosuppressives have been reduced and we have added Sirolimus." Within 2 days, about a dozen emails were shared within the group and they contained the experience from 8 centers and described the clinical course of 10 lung transplant recipients with Kaposi's sarcoma. This is on par with the entire published literature on the topic, which includes one report of 3 lung transplant recipients with KS,<sup>1</sup> 2 reports of 2 such patients,<sup>2,3</sup> and 5 "n of 1" reports.<sup>4,8</sup>

The Lung Transplant Discussion Group has 144 members from around the world. We look forward to many more interesting topics and discussion that will delve into unfamiliar territories and push the limits of lung transplantation.

*Instructions on how to join in the discussion:*

*All ISHLT members with an interest in lung transplantation are invited to join the ISHLT Lung Transplant Discussion Group. Subscribers will be able to tap into a worldwide community of lung transplant professionals. This group will cover everything lung transplant, and only members will be able to post and view group content, including members list. To receive an invitation to join, please send an introductory email to our discussion group moderator, Remzi Bag, at [remzi.bag@emory.edu](mailto:remzi.bag@emory.edu) - from your professional email address with credentials (name, professional title, affiliation and full contact information). Sorry, this group is not open to industry.*

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### THE PROBLEMS AND PITFALLS OF RECRUITMENT: PART III

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In Part II of this series I directed attention to the difference between filling a position and building a program, arguing it is always preferable to hire people with the understanding that the ultimate goal is to build a program. Every person who is hired should be looked upon as a building block to a secure foundation, not someone who is simply picked up to fill out the transplant team roster.<sup>1</sup>

I also described the issues surrounding the recruitment of an external candidate when a viable internal candidate is expected to compete for the same position.<sup>1</sup> I admittedly took a hardline position on the competition between internal and external candidates. If there is a strong internal candidate, and everyone agrees this is so, there is no reason to compete the position. However, if the decision is to compete the position, and the external candidate prevails, the internal candidate should be required to voluntarily resign, and move on. If not, they are likely to be little more than an interpersonal albatross for the external candidate. Let's face it: losers aren't content. They're negatively disruptive.

On this occasion, I want to deal with another topic that irks me – hiring an inferior candidate as a preferred strategy when, despite the ominous signs I have previously described, filling a position is intentionally given priority over building a program.<sup>1</sup>

Every now and again I receive a call or, more likely, an e-mail requesting recruitment assistance, wherein the unstated but clearly expressed goal is to hire someone who is only, shall we say, so-so. In effect, the person contacting me doesn't want to hire anybody who's better than the "talent" they've already got. In these situations I usually conduct a quick personnel inventory of the program, and it immediately becomes clear that the current "team" is average or worse, having the very distinctive characteristics of vanilla fudge. Somehow, and for whatever reason, I typically find a boatload of marginal characters who are perfectly content to tread water while celebrating, or even embellishing their all too obvious mediocrity.

This presents me with a difficult situation, given they're asking me for assistance. In some cases it would be prudent, and certainly most expedient, for me to turn down the engagement on grounds that I'm really too busy to take on another recruiting assignment. I could send them off to any one of a number of commercial recruiting outfits which typically have the collective intelligence of a "pet rock."<sup>2</sup> They're fortunate if they can spell the word "transplantation." Alternatively, given the potential for forgone work and lost income, and my personal goal of helping transplant professionals build better programs, I carefully weigh my chances of being an effective catalyst for program enhancement. The required elixir certainly doesn't come in a bottle, a pill, or an injection. Instead, I think this way: maybe by being honest they'll welcome my candor and, with a bit of luck, engage in some serious introspection. Citing the two "M's" – mediocrity and marginality – perhaps I can convince them an organizational "enema" may be beneficial. Surely, they must understand there is little security associated with a bunch of misfits, but I'm uncertain. Insulting people carries a significant risk, a risk I may do well to avoid.

Now, at this point, it seems we have a potential solution, but no assurance of success. However, before we embark on an organizational journey that may result in institutional transformation, we need to proceed in a stepwise and deliberate manner. One can liken this to walking on eggshells. I start with the results of the crude personnel inventory mentioned above. I then meet individually with all relevant members of the proverbial team. Within minutes, the problems that have

been historically denied, or more likely ignored, become obvious. While the process can be gut wrenching, and prone to outbursts and accusations, I find people usually enjoy a little bloodletting provided everyone contributes a little in the process. Consequently, over time, people become increasingly comfortable talking about the opportunity to raise the bar, and they start thinking in terms of program building, while recognizing the merits of bringing in one or more persons with whom they've previously been uncomfortable, in principle or in reality. Although it's a struggle, their thinking might be as follows: maybe, just maybe, it's not so bad being better than we've been. By now, everyone pretty much agrees: progressive decay doesn't bode well for long-term job satisfaction or, for that matter, security.

At this point, we're only part way home. There are actual candidates to be considered, and it's imperative that they fully understand the circumstances surrounding their incumbency. At this juncture some people might start talking about "transparency," and "hanging out the dirty laundry." However, I prefer to think in terms of "informed consent." We must let all candidates know what we've determined – the program they're being asked to join is mediocre, there are problem people, interpersonal differences, and a morass of unresolved matters. Frankly, a well-informed candidate, one who has taken the time to do their homework, is usually aware of the issues, and is undoubtedly skeptical. In effect, when conveying our thoughts to them, we are merely confirming what they already know. Eureka! Today, in the Internet age, it's hard to hide what you don't want other people to know.

We've now set forth what could be called the terms of engagement, but we haven't set transformation in motion. In other words, we have the makings of a crucible wherein action will take place, but we've got to get with the program in trying to convince the wary candidate that our intentions are good, and our goals can be achieved by enlisting s/he as a change agent.

Let's face it, transplant programs are of uneven quality. We all know this, and we use many adjectives to describe the general state of our colleagues' efforts around the world. There is an underlying continuum, of which we're all aware. Some programs are in decay or, more politely, disarray. In stark contrast, other programs are energized and "on the way up" and, as a result, are increasingly recognized as the pathfinders and trailblazers of the future. These programs are envied by everyone, except those programs which are similar to the one we've heretofore described, and are now valiantly attempting to rectify.

Unfortunately, along the continuum, the majority of transplant programs are fair to middling. To set them apart from the rest of the pack, they're in need of a spark that often comes with a new hire, such as the wary person described here, or a timely innovation the program has pioneered or, more likely, stumbled upon. However, the source of ignition should not be left to chance and, serendipity, as impressive as it can be, doesn't qualify as a sound business plan. Therefore, we're back to where we started, recognizing that programs are people, and that recruitment is the primary means to institutional transformation. Once again, our goal is to build a program, not maintain status quo by filling out the roster.

As programs go through the process I've described here, they gradually realize that the two M's – mediocrity and marginality – are no basis for celebration, and should be eschewed. Collectively, people need to think in terms about the change agent potential external individuals represent. On the one hand, we can't simply plop people into an organizational quagmire and expect them to thrive. On the other hand, new people who are familiar with the errors of the past, and are candid about their prospects of winning in mudwrestling, are in the best position to pave the freeway of the future. Indeed, there will be discomfort because dim prospects usually have had a long history. Change, including that associated with the recruitment process, is disruptive and challenging. And to top it all off, no matter how hard we try, there's no guarantee we'll get it right.

Where does this get us? At this point we know this much: transplant programs must diversify, avoid homosociality,<sup>3</sup> and welcome people with what have been considered strange, unworkable, or unusual ideas. We must also be realistic as the change process unfolds. We're trying to enhance the competitive nature of a previously maligned organization but, along the way, the weaknesses we continue to confront are more likely to be highlighted than strengths we've gained, leading to despair. This is a situation to be avoided. Instead, when times get tough, we must spend less time tearing down through cynicism, and more time building up through optimism.

Next on tap: What are the search committee follies?

Disclosure statement: The author is President and CEO for the UNRTP. Although the author has a financial interest in what is written, the thoughts presented are both valid and balanced.

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## PANDEMIC INFLUENZA VACCINE RESPONSES IN SOLID ORGAN TRANSPLANT RECIPIENTS: VARIABLE RESPONSES

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The recent report of vaccine responses in solid organ transplant (SOT) recipients by Siegrist CA et al<sup>1</sup> examined the AS03-adjuvanted pandemic vaccine, which was widely used during the influenza pandemic (2009/2010). Because of their higher risk for complications, SOT recipients are a priority group for influenza vaccination. However vaccine responses from previous trials have frequently shown reduced immunologic responses. Therefore strategies to enhance immunogenicity are needed. One strategy is to add an adjuvant in order to increase the vaccine response. The main vaccine used in Europe during the pandemic was the oil-in-water squalene-based adjuvanted pandemic influenza vaccine (Pandemrix®; GlaxoSmithKline, Brentford, UK), which was licensed by the European medical Agency. Two doses of this AS03-adjuvanted split influenza A /09/H1N1 vaccine was recommended for all SOT recipients in Switzerland. The aim of this study was to identify determinants influencing vaccine responses and those groups that may fail to reach seroprotection, and thus identify those patients who may require additional preventive strategies. The Geneva researchers recruited subjects as a part of a multiple parallel cohort study to determine adverse reactions, changes in biomarkers of graft function and immune response after two doses of the vaccine in 216 SOT recipients and in 138 controls after one dose. Exclusion criteria were limited to failure to comply with the study protocol and to patients transplanted less than 3 months before vaccination.

Antibody responses were measured by haemagglutination inhibition and confirmed by microneutralization. Geometric mean titres (GMT) and seroprotection rates (GMT $\geq$  40) were calculated. Safety monitoring was done with self-completed diaries during seven days after each immunization. The study was performed without funding from the pharmaceutical industry. The study population included 25 lung transplant recipients (LTRs), 27 heart transplant recipients (HTRs); the largest subgroup being the kidney transplant recipients (96 patients).

Adverse reactions were fewer in the transplant recipients than in controls and graft function remained unaffected. Seroprotection (defined as post-vaccination titre of  $\geq$  1:40) was achieved by only 70.3% of SOT recipients, with significant differences between groups (lung 34%, heart 72%, kidney 83 %, liver 83% and pancreas 85%) compared to 87% of controls (P<0.001). The weakest responses were elicited in LTRs. GMT remained threefold lower in SOT recipients than in controls (115 versus 340). Multivariate analysis identified increasing age, type of transplant and increasing blood levels of mycophenolate as being independently associated with weaker responses. In contrast, high blood levels of calcineurin inhibitors remained without significant influence on vaccine responses. Mycophenolate was being used by 92% of LTRs and 63% of HTRs, respectively. Immunization was generally well tolerated. Injection site pain was frequent, but significantly less frequent than in controls (86% versus 95%, respectively). None of the HTRs had evidence for rejection, 3 LTRs had more than 15% reduction of FEV1 explainable by reasons other than the vaccination and were fully reversible over time. For the whole cohort treated rejection episodes were rare (2/216; 0.9%).

The authors concluded that the squalene-based adjuvanted vaccine was safe in SOT recipients. However, even two doses of this influenza vaccine did not provide adequate protection for LTRs, particularly those with high mycophenolate blood levels. Additional prophylactic measures should therefore be considered for these high-risk groups.

This prospective study showed an acceptable safety profile for the AS03-adjuvanted pandemic vaccine, but insufficient seroprotection in a large proportion of heart and lung transplant recipients. Mycophenolate levels and age appear to negatively impact vaccine response. Insufficient vaccine responses in SOT recipients, as documented here, are assumed to be associated with reduced clinical effectiveness. This aspect, however, was not investigated in the present study and the results should not be interpreted to infer vaccination is not a worthwhile measure in these vulnerable transplant recipients. They should, however, raise questions for us about what else we can do to prevent potentially deadly influenza infection. Which additional prophylactic measure should be considered? It remains to be determined what additional measures may be feasible or effective. Until this is defined, it is wise to maintain a high level of clinical suspicion for influenza infection in heart and lung transplant recipients in order to diagnose and treat this infection early and reduce influenza-related morbidity and mortality.

Disclosure Statement: The author has no conflicts of interest to disclose.

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## MY LITTLE BLACK BOOK

Beth Keith

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How many people do you know who are actually willing to share their little black book? Well, I do it all of the time. Get your head out of the gutter. I'm not talking about a hooker call list or anything like that although it is just as personal. My little black book is actually my medical journal-turned-diary. It is a reminder of my journey and is turning out sometimes to be a pretty valuable tool for my doctors. I'm sharing some things about this book of mine because I think everyone with a chronic medical condition should have one.

My little black book is an evolution of casual record keeping. I initiated it to prepare myself for doctors visits related to an autoimmune disease diagnosis I was handed in 1994 at the age of 35. This nasty disease ultimately led to a dual lung transplant. 'Dermatomyositis' they labeled it; a hard word to spell and even harder to comprehend. I had to write it down just to remind myself of what ailed me so I could answer properly when people asked. The path to diagnosis was loaded with questions from an army of physicians. I had my own questions for them too. It didn't take long for me to realize that I had better start writing down every little thing ... my questions, their answers, treatment attempts, marked changes in my condition and so on.

Fast-forward to post-lung transplant. An accidental medical history, this little black book keeps me straight when doctors and nurses ask those inevitable questions that push your memory to its outer boundaries. What were the symptoms? When did you first notice them? How long did they last? Or, they might ask, "What did I prescribe for you the last time that happened?" Just today my dermatologist asked me how many times he had biopsied a spot on my face. (Wouldn't that be in their records? Just saying!) And then there are those medication changes called out during your appointment ... What did he say? Bump and taper what? I have always found these details so difficult to recall but have a full appreciation for their importance. Writing them down became imperative.

Sixteen years post-transplant, I still keep this little gem near my bedside. I don't write in it every day but I keep reasonable score on my spirometer, blood pressure, blood sugar, medication changes and unusual symptoms or issues, all of which turn out to be good information to have on hand for my doctor visits. My little black book will also reveal much lagniappe precious only to me. A peek inside would reveal a few of my favorite inspirational messages, names of books suggested by my transplant peers as we share the waiting room during our well check-ups, a history of gas prices over the years of my commute from Bay St. Louis, Mississippi to Galveston, Texas and other trivial stuff; but, to me, my little black book is priceless.

Disclosure Statement: The author has no conflicts of interest, financial or otherwise, to disclose.

*Beth Keith and Larry, her husband of nearly 30 years, reside on the Mississippi Gulf Coast. She is a CPA and he is a marine surveyor. Keeping them busy are three awesome children: 2nd Lt. Paul Keith, U.S.M.C.; Camille, a recent graduate of the University of Southern Mississippi employed as an accountant; and Miriam, a junior in high school with a passion for volleyball and western barrel racing. Miriam was barely 16 months old when Beth received her dual lung transplant; Paul and Camille were 7 and 5 years old, respectively. Rounding out the Keith family are rescue pup, Brees; horse, Reuben; and blue and gold macaw, Mia. Beth, Larry and their children love all forms of music and spend much of their time attending music events. Boating is also on their list of outdoor pleasures. Beth also loves to read and is known to paint old furniture when someone else will clean up after her.*

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**IN MEMORIAM: ROBERT STUART BONSER, MD, FRCS**

JORGE MASCARO and IAN WILSON

Queen Elizabeth Hospital Birmingham, UNITED KINGDOM

It is with great sorrow that we announce the death of long-time ISHLT member, Professor Robert Stuart Bonser, who passed away on 29th October 2012 after a period of illness, sadly shortening his prodigious career in cardiac and cardiothoracic transplant surgery.

Bob was born in Walsall, in the Black Country in the Midlands of the United Kingdom. He was educated at the local secondary school and subsequently won a place to study medicine at Cardiff University.

Following graduation in 1977, his first intentions were to become a physician, passing the exam for the College of Physicians (MRCP) only 2 years after medical school.

Bob subsequently developed an interest in cardiac surgery, completing the cardiothoracic surgical registrar rotation in the West Midlands between 1981 and 1985. He then joined The Royal Brompton Hospital and London Chest Hospital; recognition of his talent and aptitude for cardiac surgery allowed him to rapidly progress from registrar to senior registrar.

A key influence was a one year sabbatical with Stuart Jamieson in Minnesota. Training with a pioneer in cardiopulmonary transplantation at this significant stage allowed Bob to develop a phenomenal grounding in the specialty, which proved to be the bedrock of his future career.

He took up the post at the Queen Elizabeth Hospital Birmingham in 1990 and had developed the Birmingham Heart and Lung Transplant unit within 2 years of his appointment. As Director of the Transplant Unit he established one of the most prolific clinical research programmes in the UK. Bob went on to perform numerous national roles, including a successful term as Chairman of the Cardiothoracic Advisory Group in Transplantation. His clinical research on donor physiology and management has become a landmark.

In parallel with his interest in cardiothoracic transplantation Bob developed an international renowned aortic surgical programme, which once again was underpinned by an intensive research activity. Bob's recognition in the international aortic surgical fraternity was a reflection of his extraordinary hard work and his highly regarded surgical ability.

He was always quietly spoken, modest, and polite to everybody; a champion of patients' rights who cared for his staff with a real passion. He was a true leader who was unanimously respected by all those who had the pleasure to work with him.

Bob's tirelessly inquisitive mind stimulated him to engage in clinical and basic science research in numerous areas of cardiac surgery, collaborating locally, nationally and internationally. He published extensively on myocardial metabolism and myocardial protection strategies in cardiac surgery, organ function and preservation in heart and lung transplantation, cerebral and spinal cord metabolism and protection during aortic surgery, amongst many other areas of

interest. He has over 200 peer reviewed publications and has supervised 10 MD/PhDs, three of whom were honoured by Hunterian Professorships at the Royal College of Surgeons in London.

He attended the ISHLT meetings almost every year, making major contributions with provocative and beautifully complete pieces of work. Whilst unwell, he was there in the front row when a synopsis of much of his work was presented in Prague.

Bob fought his illness courageously and if we are judged by what we achieve in the time that we are given to achieve it, Bob had few equals. His legacy lives on in Birmingham, across the UK and around the world.

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## 2013 RECIPIENTS OF THE ISHLT LEACH-ABRAMSON-IMHOFF LINKS TRAVEL AWARDS

The ISHLT Leach-Abramson-Imhoff Links Travel Awards, funded in part by the generous support from W.O. and Joan Leach (Gadsden, Alabama, USA), Mrs. Sue Abramson (Birmingham, Alabama, USA) and Mr. Larry Imhoff (La Place, Louisiana, USA), were created to support the growth and development of our future leaders from within our society including physicians, nurses, and other health care professionals. Those motivated enough with investigation, communication, and dissemination of new ideas for the betterment of patients with failing lungs and/or a failing heart including such conditions as pulmonary fibrosis, cystic fibrosis, emphysema, pulmonary hypertension, and from ischemic, nonischemic to congenital heart diseases should be awarded for their efforts.

Eligibility requirements include:

1. Any healthcare professional including but not limited to nurses, nurse coordinators, social workers, pharmacists, therapists, dietitians and early career physicians are eligible and must be a member of the ISHLT regardless of duration in their career.
2. An imposed restriction on physicians is that they must be in their Early Career—within 7 years of training, Assistant Professor equivalent, or junior faculty level with rare exceptions.
3. Individuals must display some form of research interest, basic, clinical, translational or outcomes investigations or at a minimum display some skill in journalism best exemplified by their contributions to the Links Newsletter engendering fresh and creative ideas.

Each year, the winners are selected from a pool of nominees by the ISHLT Links Travel Award Committee (LTAC). This committee includes the following individuals: the Links Editor-in-Chief, ISHLT Executive Director, ISHLT President, ISHLT Program Chair, and the Links Managing Editor. This year's recipients were selected by the LTAC and approved by the ISHLT Board of Directors. Please join me in congratulating the winners of the ISHLT Leach-Abramson-Imhoff Links Travel Awards.

Writer of the Year: \$2,500

Michele Estabrook, MD

St. Louis Children's Hospital, St. Louis, Missouri, USA

As co-liaison of the Communications Workforce of the ISHLT Infectious Diseases Council, Dr. Estabrook contributed many outstanding articles in 2012 as well as helped solicit and coordinate content for the September 2012 issue which focused on Infectious Diseases. Her contributions included Kids and Germs, Forever the Twain Shall Meet, Even After Transplant (April 2012), Let's Talk About ... Diarrhea (August 2012), What IS up with whooping cough these days? (December 2012), as well as Infectious Disease Highlights from Prague and News From the ID Council: Where We've Been and Where We're Going both co-authored with Macé Schuurmans. With a refreshing and imaginative style, Dr. Estabrook enlightens us on the infectious disease issues affecting our vulnerable transplant community.

First Runner-Up: \$1,000

Melanie Everitt, MD

Primary Children's Medical Center, Salt Lake City, Utah, USA

As this year's ISHLT Pediatric Transplantation Council Chair, Dr. Everitt knocked it out of the park with her clever Council updates! Who could forget Who's on First? Pediatric Transplant Council Report (June 2012), announcing the

2012-2013 PEDS Council team roster complete with a run-down of the Council's activities and game plan. Of course that's not all. She also provided these numbers: Pediatric Council Update: Who the Heck Cares? (November 2012), Helpful Tips for Traveling with Medications: Information for You and Your Patients (April 2012) co-authored with Sabrina Boehme, generated enthusiasm for the Prague meeting with ISHLT 2012: Pediatric Transplantation Program Highlights (April 2012), and provided a summary of Pediatric Transplantation Highlights from Prague (May 2012) co-authored with Beth Kaufman and Chris Benden.

First Runner-Up: \$1,000

Christina Migliore, MD

Newark Beth Israel Medical Center, Newark, New Jersey, USA

As Communications Liaison for the Junior Faculty and Trainee Council, Dr. Migliore was instrumental in soliciting and coordinating contributions for the very popular October 2012 Links issue which focused on content targeting our junior faculty members. In addition, she provided some impressive contributions of her own, including Internship to Attending: Choosing a Road Less Traveled (March 2012), JFTC Year in Review: Where Have We Been and Where Are We Going? (June 2012), and two articles for the October 2012 issue: Decisions Decisions Decisions: Choosing a Research Project (and other difficult dilemmas) and The Story Behind Oktoberfest (anyone else miss that great Czech beer?).

Honorable Mention: \$500

Veronica Franco, MD

Ohio State University, Columbus, Ohio, USA

With imagination and enthusiasm, Dr. Franco provided us with winning contributions on the topic of Pulmonary Hypertension, including Is It a Horse or a Zebra? Pulmonary Hypertension Council Year-in-Review (June 2012) and Chasing Zebras: Pulmonary Hypertension World Symposiums (July 2012). As Communications Liaison for the PH Council, she helped to solicit the PH content for the July 2012 Links issue which focused on Pulmonary Hypertension and Pharmacy and Pharmacology.

Honorable Mention: \$500

Manreet Kanwar, MD

Allegheny General Hospital, Pittsburgh, Pennsylvania, USA

In addition to her role as Vice Chair of the Junior Faculty & Trainees Council, Dr. Kanwar spent time writing for the Links, providing a resourceful article for the October 2012 issue titled, Light at the End of the Tunnel: How to Find Your Dream Job which generated numerous hits from readers worldwide. She even convinced her sister, Manpreet, to contribute a beautiful poem titled, Thunder, enhancing the artistic aspect of the Links.

Honorable Mention: \$500

Luciano Potena, MD, PhD

University of Bologna, Bologna, ITALY

We are not sure if Dr. Potena ever sleeps. He must at some point, but we're not sure when he ever finds the time, since his "spare" time always finds him working on some task or another for the ISHLT, for which we are eternally grateful. When he is not busy with Program Committee planning, Dr. Potena somehow finds time to solicit, collect, coordinate and write content for the Links. His contributions include a February 2012 article: Are We Still Talking About CMV? (co-authored with Stanley Martin and Vincent Valentine), the September 2012 In The Spotlight article: CMV and Beyond: Challenges and Hopes of a Young European Scientist, and two December 2012 articles: The Changing Landscape in Heart Donors' Epidemiology: Evolutionary Strategies to Avoid Extinction of the European Heart Transplant Recipient (co-authored with Steven Tsui and Laurent Sebbag), and Networking and Shared Quality Standards Over National Borders: A European Roadmap to Improve Organ Retrieval, an Interview with Alessandro Nanni Costa.

Honorable Mention: \$500

Macé Schuurmans, MD

University Hospital Zurich, Zurich, SWITZERLAND

As co-liaison of the Communications Workforce of the ISHLT Infectious Diseases Council (with Michele Estabrook), Dr. Schuurmans regularly contributes worthy articles of great interest to the ISHLT membership. He also helped to solicit and coordinate content for the September 2012 issue focusing on Infectious Diseases. Among his contributions are Infectious

Disease Highlights from Prague (May 2012) and News From the ID Council: Where We've Been and Where We're Going (June 2012) both co-authored with Michele Estabrook, Oral Ribavirin for Paramyxovirus Infections in Lung Transplant Recipients? (July 2012), Seven Critical Sins (October 2012), and an article in this month's newsletter: Pandemic Influenza Vaccine Responses in Solid Organ Transplant Recipients: Variable Responses.

Honorable Mention: \$500

Jeff Teuteberg, MD

University of Pittsburgh/Presbyterian, Pittsburgh, Pennsylvania, USA

Yet another eager, hard-working volunteer for the ISHLT, Dr. Teuteberg serves as MCS Council Chair and, in his "spare" time, writer and supporter of the Links. He is always willing to assist in the solicitation of MCS content, and provided us with Mechanical Circulatory Support Highlights from Prague (May 2012), ATC 2012: Cardiac Transplantation Highlights (August 2012), In the Spotlight: ISHLT Academy: Core Competencies in Mechanical Circulatory Support (December 2012) co-authored by Daniel Goldstein, Andreas Zuckermann, David Feldman and Salpy Pamboukian, and the 2013 ISHLT Guidelines for Mechanical Circulatory Support announcements in December 2012 and January 2013 (co-authored with Salpy Pamboukian and David Feldman). Let's try to keep him busier in 2013.

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## INTERNATIONAL TRAVELING SCHOLARSHIP AWARDS

Next application deadline: August 1st, 2013

The ISHLT Travelling Scholarship Awards were established to facilitate the exchange of knowledge and techniques regarding heart and lung transplantation and the treatment of end stage heart and lung failure and to build relationships between individuals, institutions, and countries. The Scholarships may be used to learn new techniques in the clinic, operating room, or laboratory or just to experience first-hand how others deal with challenging problems. These awards are open to any member of the Society, in any country. They represent a unique opportunity for garnering fresh ideas and collaborative work across the globe.

The ISHLT funds a minimum of ten scholarships per year. Each award will be in an amount of up to \$6,000. ALL members of the Society are eligible to apply for a Scholarship. Applications for the next round close on August 1st. For more information and application instructions/eligibility requirements, visit:

<http://www.ishlt.org/awards/awardIntlTravelScholar.asp>

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DECEMBER 2012

The ISHLT received eight applications and awarded five scholarships:

Manon Huibers, MSc

University Medical Center Utrecht, Utrecht, The Netherlands

Host: Yale School of Medicine, New Haven, Connecticut, USA

Daniel Goldstein, MD

Yale University, New Haven, Connecticut, USA

Host: University College London, London, United Kingdom

Laveena Munshi, MD, FRCPC

University of Toronto, Toronto, Canada

Host: Duke University, Durham, North Carolina, USA

Marco Masetti, MD

Academic Hospital Sant Orsola-Malpighi, Bologna, Italy

Host: Univ fur Chirurgie, Herztransplantation Sekretariat, Vienna, Austria

Rochelle M. Gellatly, BScPharm, ACPR, PharmD

The Alfred Hospital, Prahran, Australia

Host: Henry Ford Hospital, Pharmacy Department, Detroit, Michigan, USA

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## 2013 SLATE OF NOMINEES TO ISHLT BOARD OF DIRECTORS

Dear Colleagues,

As Chair of the Nominating Committee, I am privileged to present to you the final slate of nominees as endorsed unanimously by the ISHLT Board of Directors, for the term April 2013-April 2016.

President-Elect: Hermann Reichenspurner, MD, PhD (Cardiothoracic Surgery), Germany  
Secretary-Treasurer: Stuart Sweet, MD, PhD (Pediatric Pulmonology), USA  
Directors: Lara Danziger-Isakov, MD, MPH (transplant infectious diseases), USA  
Andrew J. Fisher, FRCP, PhD (pulmonology), UK  
Daniel R. Goldstein, MD (basic scientist and cardiology), USA  
Maryl R. Johnson, MD (cardiology), USA  
Myung H. Park, MD (pulmonary hypertension), USA

We received 4 nominations for President-elect, 3 for Secretary-Treasurer and 33 for the position of Director. The Nominating Committee consisted of 7 voting members (5 ISHLT presidents and 2 at-large appointees from the Board of Directors). The Nominating Committee has made every effort to discharge its responsibility while keeping in mind the goals of encouraging DIVERSITY, SERVICE TO THE SOCIETY MISSIONS, and LEADERSHIP POTENTIAL.

The slate will be presented to the membership for a final vote at the Annual Business Meeting, Friday April 26, 2013, at 9:30 am at the Palais des Congrès de Montréal, Canada. All members other than student/resident and emeritus/retired/complimentary members may attend and vote at the Annual Business Meeting.

With this slate, the new composition of the Board will be:

President: Allan R. Glanville, MBBS, MD, FRACP (Pulmonologist), Australia  
President-Elect: Hermann Reichenspurner, MD, PhD (Cardiothoracic Surgeon), Germany  
Past-President: David O. Taylor, MD (Cardiologist), USA  
Secretary-Treasurer: Stuart C. Sweet, MD, PhD (Pediatric Pulmonologist), USA  
Director: Lara Danziger-Isakov, MD, MPH (Transplant Infectious Diseases Specialist), USA  
Director: Andrew Fisher (Pulmonologist), United Kingdom  
Director: Daniel R. Goldstein (Basic Scientist and Cardiologist), USA  
Director: Maryl Johnson (Cardiologist), USA  
Director: Richard Kirk, MA FRCP FRCPC (Pediatric Cardiologist) United Kingdom  
Director: Bronwyn J. Levvey, RN, Grad Dip Clin Ep (Nurse), Australia  
Director: Frank Pagani, MD, PhD (Cardiothoracic Surgeon), USA  
Director: Myung Park (Cardiologist/Pulmonary Hypertension Specialist), USA  
Director: Joseph G. Rogers, MD (Cardiologist), USA  
Director: Martin Strueber, MD (Cardiothoracic Surgeon), Germany  
Director: George M. Wieselthaler, MD (Cardiothoracic Surgeon) Austria/USA

Thus, the board composition in terms of geographic and constituency basis will be as follows:

Professional Specialty: 4 cardiothoracic surgeons; 2 adult pulmonologists; 1 pediatric pulmonologist; 4 adult cardiologists; 1 pediatric cardiologist; 1 cardiologist/pulmonary hypertension specialist; 1 non-physician; 1 transplant infectious diseases specialist

Geographic Distribution: 9 USA; 6 Non-North American (2 UK, 2 Germany, 2 Australia)

The individuals whose current terms on the Board expire in April, 2013 are as follows:

Raymond L. Benza, MD (Cardiologist/Pulmonary Hypertension), USA  
Marisa Crespo-Leiro, MD, Cardiologist, Spain  
Duane Davis, MD, Thoracic Surgeon, USA  
James George, PhD, Immunobiologist, USA  
Patricia Uber, PharmD, Pharmacist, USA  
Geert Verleden, MD, PhD, Pulmonologist, Belgium  
Lori J. West, MD, DPhil (Pediatric Cardiologist/Basic Scientist), Canada

On behalf of the Board of Directors of ISHLT, we respectfully seek your endorsement of this slate during the Annual Business Meeting.

With warm regards,

Lori J. West, MD, DPhil  
Chair, ISHLT Nominating Committee  
Immediate Past President ISHLT

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**THE ISHLT REGISTRY FOR MECHANICALLY ASSISTED CIRCULATORY SUPPORT (IMACS) HAS LAUNCHED!**

JAMES K KIRKLIN, MD  
Chair of IMACS Registry Committee  
Professor and Director of the Division of Cardiothoracic Surgery  
University of Alabama at Birmingham  
Birmingham, Alabama, USA  
jkirklin@uab.edu

Great News! The International Society for Heart and Lung Transplantation Registry for Mechanically Assisted Circulatory Support (IMACS) launched on January 9, 2013! IMACS is an international registry that is enrolling and following patients who receive durable mechanically assisted circulatory support devices (MCSD) in all countries and hospitals around the world that wish to participate.

**Purposes of the IMACS Registry**

IMACS' primary objective is scientific research, specifically the analysis of a large ongoing combined experience focusing on outcomes after device implantation and identification of associated risks factors. In addition, other purposes are:

- To capture worldwide data relating to the implantation and outcome of patients receiving cardiac assist devices designed for and capable of use for 30 or more days
- To identify risk factors for complications
- To improve patient selection and management before and after device implantation
- To generate predictive models of outcome for given patient profiles
- To generate statistical analyses of the data that can be used as the underlying evidence/ justification for government agency funded studies and clinical trials
- To identify overall and best practices with the aim of improving current practices

**IMACS Website**

In addition to the IMACS Registry being launched, the official [IMACS Website](http://www.ishlt.org/registries/imacs/) went live in January. Interested collectives and hospitals can access this website and obtain a wealth of information such as IMACS data elements, policies and procedures, and enrollment information, which will be briefly be discussed in the next section. Below you will find links to essential to IMACS:

IMACS Registry Committee - <http://www.ishlt.org/registries/executiveCommittee.asp>  
IMACS Protocol - <http://www.ishlt.org/registries/protocol.asp>

IMACS Users' Guide - <http://www.ishlt.org/registries/usersGuide.asp>

IMACS Patient Enrollment - <http://www.ishlt.org/registries/patientEnrollment.asp> (Note: Access to the patient web based data entry system will be granted after a hospital is officially enrolled.)

#### Enrollment in IMACS

IMACS currently has forty-one hospitals and three collectives that have expressed interest in participating and submitting data to the registry. Sixteen of these hospitals have moved forward with the enrollment process by initiating regulatory requirements and one hospital is actually enrolled!

Requirements for enrollment can be found on the IMACS website under the Site Enrollment section: <http://www.ishlt.org/registries/siteEnrollment.asp>. First, if a hospital or collective is interested in registration and enrollment in IMACS, they should complete an IMACS Registry Institutional Enrollment Form and submit it via email to [IMACS@uab.edu](mailto:IMACS@uab.edu). Next, an IMACS staff member will contact the interested site to continue the enrollment process. In order to be enrolled in IMACS, the following items or forms will be requested:

1. IMACS Registry Institutional Enrollment Form
2. International Society for Heart and Lung Transplantation Registry for Mechanically Assisted Circulatory Support (IMACS) Memorandum of Agreement
3. Human Subjects Research certification (Ethics Board, Institutional Review Board, etc.)
4. Completed Training – At least one IMACS staff member at the institution must complete the IMACS training process. A live web-based data entry training session will be scheduled with the designated staff member at each institution. This training will be conducted in English.

Each item or form will need to be completed satisfactorily before a hospital or collective is officially enrolled in IMACS. Once a hospital is enrolled, they will be sent a user name and password is sent to begin entering data into the IMACS Registry.

Friendly IMACS staff is available to answer all questions or inquiries regarding the registry. Please send an email to [IMACS@uab.edu](mailto:IMACS@uab.edu). We are looking forward to hearing from you!

Disclosure of Statement: The author has no conflicts of interest to disclose.

#### References:

Kirklin MD, James K, Naftel PhD, David C, et al. IMACS Protocol 2012; p. 5

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#### EDITORS' BRIEFS

[Dr Joseph E. Murray \(1919–2012\): A Life of Curiosity, Humanism, and Persistence](#)

American Journal of Transplantation, January 2013, Volume 13, Issue 1, Pages 1-241

[John Dark](#)

Not many transplant surgeons receive a Nobel Prize, and the beautifully written obituary of Joseph Murray contains a wonderful insight into one who did. As can be read in this outstanding piece by Stephan Tullius, Murray combined outstanding surgical courage, up to the minute science, and a humility which is a lesson to all of us.

To deal first with the courage; when he performed the first living donor kidney from one identical twin to another, nearly 60 years ago, nobody had done this procedure which could have killed either or both of his patients. The result, we all know, was a spectacular success, but it still took balls!

Then there is the science. His first allograft recipient, again half a century ago, was treated with total body irradiation, and lived for 28 years. Some lessons for us today, perhaps?

Finally, the person. Here was a man who was always approachable, who kept in touch with his patients, and who always acknowledged that his success was built on the shoulders of others. Tullius' concludes with a beautiful paragraph:

"His lifelong curiosity, gentle persistence, continuous availability, optimism and smiling face will be with us and guide us in moving organ transplantation forward. Just like the smile on the faces of Thelma and Louise, if you may recall the last scene of the movie, Dr. Murray's overriding optimism would have asked us to concentrate on the beautiful scenery when driving over the cliff."

Read the [full obituary](#) (PDF).

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## DOUBLE TROUBLE, CHARADE, HYPOCRISY, AMBIGUITY AND CLARITY

VINCENT G VALENTINE, MD

Links Editor-in-Chief

[vgvalent@utmb.edu](mailto:vgvalent@utmb.edu)

Mark Twain's *The Tragedy of Pudd'nhead Wilson*, is a book obsessed with twins and twin notions. He originally wanted to write about Siamese twins "joined together" but he ended up splitting them into two people. These two autonomous selves, echoes, mirror images, pairs or doubles if you will can be connected or linked to something else, linked in their origin, from birth. Think of Twain's name. Think about Huck when he disguises himself as a girl or as Tom Sawyer. How about another one of Twain's books, *The Prince and the Pauper*, where two children only look alike but are socially different, then exchange them which gives us a great recipe for drama, satire or irony. They know they're not the other but no one else does. The prince learns what it's like to be a pauper and vice versa.

In epic stories, folklore and throughout history twins are considered unstable. They destabilize the sense of integrity of one, because as a pair they become whole. Twins as distinct individuals can create murkiness, ambiguity and lack of clarity and, as a result, some tribal cultures put one to death so there would be no fooling. Recall the great stories of Cain and Abel, Jacob and Esau, and Castor and Pollux in the constellation of Gemini. And of course there is Romulus and Remus with the founding of Rome. Imagine had Remus survived we may have had the Remen Empire. Let's not forget Leonardo DiCaprio in *The Man in the Iron Mask*. Getting rid of one of these doubles, shadows or anything that complicates our senses may be an act of clarification.

Sam and Eric or Samneric from *Lord of the Flies* are "so in sync that they breathe together" but cannot function as individuals. Lewis Carroll's Tweedledee and Tweedledum who fight all the time finish each other's sentences. Even Shakespeare provided us with Viola and Sebastian in the *Twelfth Night*. While the identical twin girls from *The Shining* crept us out when they said "come play with us Danny," we experienced the extreme comedy from the unlikely twins of Arnold Schwarznegger and Danny DeVito in *Twins* and comic relief from George and Fred Weasley in Harry Potter.

Steering from twin siblings and more to the self are the doppelgangers, the split self, ego and id found in gothic writings. Consider reading *Two Centuries Later and Still Alive* with the divided self and double struggles of Edgar Allan Poe in the January Issue of the Links 2012. There is Jekyll and Hyde, Jonathan Harker and Dracula, and Frankenstein and his Creation. It is these dark doubles or any double in the many great literary works that allow us to explore uncomfortable boundaries. Splitting pairs into extremes gives us clarity. Examples of clear polarities include: day-night, land-sea, man-woman, good-evil, right-wrong, rich-poor, nature-nurture, genetic-environment and life-death. What about healthcare and the ISHLT? Transplant-not transplant, device-no device, device-transplant, rejection-infection and steroids-no steroids, just to name a few. Now back to Twain and what is he teaching us with Pudd'nhead Wilson. He wants us to think about Man-woman, lady-whore, gentleman-scoundrel, black-white and master-slave, after all it is Black History month.

To better appreciate this book, we must stand in the shoes of mid-19<sup>th</sup> Century American culture with this notion from Twain. He wrote the following response to the glowing review of *Roughing It*: "I am as uplifted and reassured by it as a mother who has given birth to a white baby when she was awfully afraid it was going to be a mulatto." Here's a woman who has had sex with several men at least one white and one black or mulatto. Has Twain introduced us to racism? No.

Desegregation and mixing? Yes. Twain is well aware of Harriet Beechers Stowe's, *Uncle Tom's Cabin* where there are clear examples of polarities that go unnoticed by the innocence of children. Stowe pairs little Eva, the white little angel of the text, with little Topsy, the black rascal of the text. The color of their skin doesn't matter to these children but take note of the following passage by Stowe:

*There stood the two children, representatives of the two extremes of society, the fair, high-bred child with her golden head, her deep eyes, her spiritual, noble brow and prince-like movements; and her black, keen, subtle, cringing yet acute neighbor. They stood the representatives of their races. The Saxon, born of ages of cultivation, command, education, physical and moral eminence; the Afric, born of ages of oppression, submission, ignorance, toil and vice!*

These notions are not just pairings of individuals but enrich the real meaning of pairs, best understood at extremes but somewhat veiled in a charade. A charade brought about by bias, culture, environmental influences and societal expectations. American society, medical society, the ISHLT society and probably all or our institutions as well as our personal behaviors have some biases or cultural preferences. It is our own Roger Evans who has made us beware of "homosociality" in the *Problems and Pitfalls of Recruitment: Part II* from the December Issue of the Links 2012.

Can we without bias or prejudice recognize concepts no longer regarded as tenable in the 21<sup>st</sup> century, such as ideas of in the mid-19<sup>th</sup> century about social order in America black *vs* white or master *vs* slave? The fugitive slave act inspired Harriet Beecher Stowe. The Civil War gave double trouble to Lincoln. He struggle with the twins of black and white, master and slave. Take note of his letter to Horace Greeley:

*If I could save the Union without freeing any slave, I would do it, and if I could save it by freeing all the slaves, I would do it, and if I could save it by freeing some and leaving others alone, I would also do that.*

The Emancipation Proclamation turned the war from preserving the Union to freeing the Slaves. But this was only the beginning. America had to go through its own enlightenment after the Civil War. It was Immanuel Kant, who characterized enlightenment as the awakening to a realization that humans have created realms separate from ourselves on which we then have become dependent. He also said that enlightenment further involves having the courage to discern this and act on it by getting rid of this self-imposed dependency. With that said, it is too easy for us to impose present standards onto the past, where the present standards do not belong. This will bias our understanding of the past. This is where Twain helps us. Think of *A Connecticut in King Arthur's Court*. Now we have *The Tragedy of Pudd'nhead Wilson*.

The lives of the white citizens in this novel are defined by hypocrisy, prejudices and moral failure. The landscape is haunted by the sins of the white fathers. The white and aristocratic patriarch, Percy Driscoll, writes in his diary about his noble gesture of caring for his slaves so his son might read his diary and learn to respect all including slaves with dignity and respect. But with true Twainian ironic twists, his son will never be able to read this novel because he grows up illiterate because he grows up as a slave. Then, there is Roxy. A slave in the Percy Driscoll's household. She is mulatto. She is 1/16<sup>th</sup> black and it does not show. But because of stereotypical assumptions, this drop of "black blood" defines her as black. She has a child sired by a white man. This child is 1/32<sup>nd</sup> black and by custom, he is black. Percy's wife has a child at the same time, but she dies. So Roxy raises both children who look alike. The next ironic twist is when Roxy switches the babies. She does this because she's afraid her son will be sold down the river. In the end, he is sold down the river. Percy could not tell these children apart except for the clothes they're wearing. What Twain is teaching us is that rank and class does not make any difference. They are equally human. Now you have a spectacular plot of nature *vs* nurture.

Now, Roxy who is conditioned by the white, slave owning aristocratic culture is the only one who knows which child is which. She becomes the mammy of her own "black" son and raises him as the white upper class son of Percy. She raises Percy's "white" son as her own son - a slave.

So what's the tragedy all about. David Wilson is labeled a Pudd'nhead early on in the book. He is an outsider from upstate New York who moves into this small town below St Louis along the Mississippi River. He sees no difference in black or white, especially these two children who are both beautiful and look alike. 20 years later, Pudd'nhead becomes the hero in the famous courtroom scene when he reveals the real murderer, proves the switch of these two children from

20 years earlier through “natal signatures” by the new scientific technology of fingerprinting. Today we have DNA fingerprinting. Again, what is so tragic of Wilson’s success from dolt to hero? Well, he is an outsider who becomes an insider who is forced to adopt the prejudices of this town. He has been corrupted even though this “white-washed” town declares him the town’s hero. The ambiguities throughout this book are cleared up in the end by this open and shut case. It is as clear as black and white. These are the ultimate ironies.

America’s twins are black and white. They were there at its origin as master and slave. There was liberation, and now today, black and white are here as their autonomous selves with all the human dignity, freedom and freedom of choices expected in order to have the unalienable rights of life, liberty and the pursuit of happiness. Late 20<sup>th</sup> century and early 20<sup>th</sup> century America’s cinema has given us the great pairings in the following movies: Brian’s Song, Rocky, Lethal Weapon, Men in Black, Shawshank Redemption, Rush Hour, and Bodyguard, just to name a few. Hollywood has not stopped at just the binary of black and white, it has extended into multiculturalism. And to end with a few words from the great Martin Luther King Jr, “... I have a dream that my four little children will one day live in a nation where they will not be judged by the color of their skin but by the content of their character.”

In the ISHLT it must be instilled in our character to make the right decisions when confronted with the multitudes of pairings regardless of race or culture: transplant or not, device or not, transplant or device, and life or death.

This is just a tip of the white iceberg, or was it a black iceberg.

Disclosure Statement: The author has no conflicts of interest to disclose

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## QUOTABLE QUOTES

“Training is everything. The peach was once a bitter almond; cauliflower is nothing but cabbage with a college education.”

— Mark Twain

“When the final result is expected to be a compromise, it is often prudent to start from an extreme position.”

— John Maynard Keynes

“You never fail until you stop trying.”

— Albert Einstein

“The ultimate measure of a man is not where he stands in a moment of comfort and convenience but where he stands at times of challenge and controversy.”

— Martin Luther King, Jr

“It is the nature of all greatness not to be exact.”

— Edmund Burke

“There is nothing either good or bad, but thinking makes it so.”

— William Shakespeare

“When angry, count four; when very angry, swear.”

— Mark Twain

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## NEAR MISSES, NEAR HITS

### CLOSE CALL LEARNING EXPERIENCES

Have you encountered a situation or experience—a “near miss” or “near hit”—that yielded lessons on how to better manage patient care in the clinical setting, or conduct research in the lab, or lecture/teach in a classroom, or just how to do

your job better? Do you have an experience to share with the ISHLT Links Newsletter readers about an occasion that taught you something significant about ways to improve health care in patients with end stage heart and lung failure? If so, we want to hear about it.

We encourage you to submit a brief (+/- 500 words) summary of your Near Misses, Near Hits to us for possible publication. Each month, the Links Newsletter will publish a collection of similar experiences sent to us by our readers. Sharing with others the benefit of your experience and the lessons you learned can be an invaluable aid to other health care providers.

You can send your summary directly to Susie Newton at [susie.newton@ishlt.org](mailto:susie.newton@ishlt.org). Put "Near Misses, Near Hits Submission" in the subject line; add your name and phone number at the bottom of the email.

Your report will be considered for publication in the new Near Misses, Near Hits page, and may be edited for style and length. Anonymity is guaranteed if you wish. No one but our Editor and Managing Editor will be permitted to access the report. Your name and telephone number are requested only so that the managing editor can contact you if necessary.

While we cannot guarantee your submission will be published, we can guarantee that we will closely review and consider using it. All Near Misses, Near Hits submissions become the property of the ISHLT Links Newsletter and may be republished.

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## REMEMBERING OUR DECEASED MEMBERS

The ISHLT Links Newsletter will be reserving space each month to remember any members of the Society who have passed away. This "In Memoriam" section is available for anyone who wishes to write a brief obituary about an ISHLT member.

Please be sure to include the following information with your submission:

- \* Photo (jpeg or gif format)
- \* Dates of Birth and Death
- \* Most recent professional position and institution
- \* Any other significant information

Please email the above materials to [susie.newton@ishlt.org](mailto:susie.newton@ishlt.org). Thank you for your assistance.

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