

IN THE SPOTLIGHT: 2015 Recipients of the ISHLT Leach-Abramson-Imhoff Links Travel Awards

For 2014, the ISHLT was very fortunate to have nearly 100 writers who contributed to the ISHLT Links Newsletter. With the rapid movement of replacement therapy, the importance of understanding the immune system, transplantation and prevention cannot be emphasized enough. The 2015 winners of the ISHLT Leach-Abramson-Imhoff Links Travel Awards were a cut above the other candidates for this year's writer awards. There were 10 outstanding writers carefully selected from a pool of nearly 50 eligible authors for the Writer of the Year award. This year, for the first time, we have a winner who was unanimously selected to receive the top ISHLT Leach-Abramson-Imhoff Links Travel Award. This year's Writer of the Year Award goes to none other than **Pam Combs**. Our First Runner-Up is **Manreet Kanwar**, and Honorable Mention awards go to **Oveimar De la Cruz**, **Heather Henderson**, **Simon Urschel**, and **Erin Wells**.

Let's extend warm ISHLT congratulations to these writers.

Writer of the Year: \$2,500

Pamela S. Combs, PhD, RN

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This year's winner, from "Deep in the Heart of Texas," is Pam Combs. She is the Mechanical Circulatory Support Clinical Manager at Seton Medical Center in Austin, Texas. Pam has become a major figure in the world of mechanical circulatory support and advanced heart failure disease management. She possesses extensive experience with nearly all devices and has secured a Doctorate in Nursing from the University of Louisville. She is an important member of the Nursing, Health Sciences and Allied Health Council of the ISHLT and actively participates in the Education, Standards and Guidelines and Communications Workforces. Furthermore, she is a member of the Heart Failure Society of America, Board Member of the International Consortium of Circulatory Assist Clinicians, and VAD Coordinator Co-chair of American Society for Artificial Internal Organs. Her contributions to the Links this year were nothing short of splendid and, thus, she was unanimously chosen as this year's winner. Her articles, including [VAD Programs Driving Ahead with the Inclusion of Bioengineering Students](#), [Silent to Talkies: The Evolution of VADs](#), [At the VAD Holiday Table](#) and [Shared Decision-Making: Its Involvement in the World of VADs](#), unequivocally indicates a thoughtful mind with clarity, conciseness, brevity and imagination, especially on such a timely topic for the ISHLT. See for yourself as you peruse her well bioengineered and turbocharged contributions on the revolutions and evolution from silence to communication and shared care as this driving topic has

become part of the holiday table preferably free from any sediments and impediments. Let's extend a well-deserved ISHLT congratulations to Pam Combs.

First Runner-Up: \$1,500

Manreet Kanwar, MD

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This year's sole first runner up of the Leach-Abramson-Imhoff Links Travel Award goes to Manreet Kanwar, MD. Manreet is a repeat winner, who received the Links honorable mention Award last year. She is a Cardiologist at the Cardiovascular Institute of the Allegheny Health Network in Pittsburgh, Pennsylvania. She is an active member of ISHLT and serves as this year's Chair of the Scientific Council for Junior Faculty and Trainees. Her contributions to the Links have been consistently outstanding articles that have proven useful to many ISHLT members, especially for our young trainees. For proof of such talented writing, we refer you to her articles from this year: [Chronic Thromboembolic Pulmonary Hypertension \(CTEPH\)—Scan For It!](#), [Wow What a Ride! One Year We Will Never Forget](#), and [Junior Faculty and Trainee Council - On the Horizon](#). We are pleased to give special recognition to Manreet Kanwar for her indelible accomplishments.

Honorable Mention (4 recipients): \$500

Oveimar De la Cruz, MD

Transplant Infectious Disease Specialist

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Dr. Oveimar De La Cruz is a Transplant Infectious Disease specialist at Virginia Commonwealth University School of Medicine. He is another honorable mention Links Travel Award recipient. With his imaginative and organized style, Oveimar provided us with important insight into the immune system with another shade on our graying population from his cleverly crafted article on [Immunosenescence and Lung Transplantation - What Does It Mean to Be Old?](#) Congratulations to Oveimar De La Cruz for his thoughtful overview.

Heather T. Henderson, MD

Pediatric Cardiologist

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Dr. Heather Henderson is a Pediatric Heart Failure and Transplant specialist at Duke University School of Medicine. She is an honorable mention Links Travel Award recipient. She gave us a splendid and touching compilation of heart failure care in children, from infancy to independence. We refer you to her high quality summary on [Pediatric Heart Failure: It's Finally Growing Up](#). Congratulations to Heather Henderson for important reminder that children are truly not small adults.

Simon Urschel, MD

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Dr. Simon Urschel is a Pediatric Cardiologist from the University of Alberta where he serves as Clinical Director of the Pediatric Cardiac Transplant Program. Simon is another repeat winner after receiving this year's honorable mention Links Travel Award. He too has contributed several outstanding articles to the ISHLT Links Newsletter, including an insightful piece from last year, [First Naïve, Later Delinquent: How Immune Maturation Benefits and Jeopardized Transplantation](#). We then turn your attention to his work on [The Science and Fiction of ABO Incompatible Transplantation](#) that gave him merit for this year's award. Congratulations to Simon Urschel for his dedication and contributions.

Erin Wells, RN, BSN, CPN

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Erin Wells is the Care Manager of Cincinnati Children's Lung Transplant Program. She is another honorable mention Links Travel Award recipient with her article on [Lessons Learned](#). This pithy, simple and direct article embodies life, success and what's it all about. We urge you to read this article several times, but all it takes is once and you will know. Congratulations to Erin Wells for her clear and concise message.

History of the 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.

A Road Less Traveled: Becoming a Transplant Pathologist, from the Perspective of a Current Trainee

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Seemingly ubiquitous in Pathology training today are subspecialty fellowships in which residency graduates engage in one- to two-year immersions in areas of individual interest. Fellowships are generally applied for and obtained within the third of four post-graduate years of pathology residency training; application often being aided, at least in part, by physician mentors who inspire areas of interest and encourage particular strengths. However, the road to becoming a transplant pathologist, or a subspecialist in any field, is not always straight and narrow. Even among various members of the transplant team, the path toward a career in transplant medicine is often poorly understood due to the wide variety of opportunities which can provide for focused training. In this month's issue of Links, attention is focused on the broad topic of training in transplant medicine; therefore, I will attempt to describe my own experience training to practice transplant pathology.

Most medical colleagues would agree that often an enlightening experience or engaging mentor initially piques our undifferentiated minds as medical students; ultimately drawing each of us down tapering roads within the heavily partitioned medical community. Indeed, this was my personal experience; one that still impacts my journey today. As a third year medical student, fixated on pursuing a future career as a surgeon, I unexpectedly happened to cross paths with Dr. Tibor Nadasdy, a nephropathologist at the Ohio State University Medical Center, during medical and transplant co-disciplinary conference. A seemingly enigmatic world of kidney disease, which, to be quite frank, I had previously thought far too complex to trouble myself with, suddenly came to life through this small-statured, lively man, with an enjoyable accent and unfathomable expertise. Given that I "grew-up" in an age of medical education in which the joy of microscopy labs and faded slides had been virtually replaced, this was my first experience being navigated about a tissue biopsy from a live patient whose clinical picture was known to me. After approximately four more weeks in nephrology and amassing a small number of encounters with Dr. Nadasdy and his clinical colleagues at the microscope, I knew I'd enjoy being a part of these tissue-based inquires in the future and I ultimately turned toward a less-well traveled road to become a pathologist.

During Pathology training I again found myself mystified and intrigued by minute differences in inflammatory pathologies, especially within the realm of medical lung, liver, and kidney disease. Trusting the persistent encouragement of my residency advisors, I applied for and was offered a fellowship in Transplant and Hepatic Pathology at the University of Pittsburgh Medical Center (UPMC). While a majority of transplant pathologists train in subspecialty areas which provide for transplant expertise in one organ system, the one-year fellowship in the Division of Transplantation and Hepatic Pathology at UPMC, in conjunction with the Starzl Transplant Institute, is unique in that it provides for comprehensive training across all pathology transplant subspecialty areas with opportunities to work hand-in-hand with leaders and pioneers in the fields of transplantation pathology, transplant surgery, cardiology, hepatology, and nephrology. The fellowship experience has far exceeded my expectations in its ability to provide mentors who motivate, encourage, and deeply care about the professional growth of those they teach. As experts, their teaching is tailored not only to standard requirements but also to resolve misconceptions and weaknesses, enhance strengths, and sponsor inquiry into realms of cutting-edge research challenging conventional boundaries within our field. To this extent, the fellowship at UPMC provides glorious opportunities for active participation in research

programs including immune tolerance, antibody mediated rejection, BK virus infection, biliary and hepatocellular neoplasia, and digital imaging and multiplex labeling techniques, among others. Furthermore, fellowship trainees are expected to develop skills in critically evaluating research publications as they engage in bi-monthly fellow-led journal clubs that provide insights into the approach to scientific literature taken by experts who routinely review topical publications.

While educational opportunities during subspecialty fellowship training abound, the experience of procuring knowledge from experts in a field can often leave the learner initially perplexed. Unlike residency, fellows spend uninterrupted time inside a single subspecialty department working with a small number of expert teachers. While collectively conveying similar information in pathology reports, expert pathologists, like musicians or artists, often interpret biopsies with individual styles. A significant task as a fellow is to learn and incorporate each mentors' style while attempting to cultivate appropriate preferences of their own. This task is facilitated via semi-independent service work in which fellow responsibilities include correlating diagnoses with clinical and laboratory data, ordering and evaluating ancillary testing, and formulating informative diagnostic comments, culminating with mentored sign-out of cases. Additionally, knowledge is not simply handed down by an expert in a neatly organized filing system with categorical labels; instead, expert knowledge is gleaned throughout the year by collective experience and thoughtful comparisons that are assimilated with up-to-date research and literature reviews. At UPMC, this collective experience involves all aspects of transplantation pathology including: evaluation of native disease in transplant candidates, intra-operative donor organ consultation (frozen sections), examination of native explanted organs and evaluation of post-transplant biopsies for anatomical complications, ischemia, infection, cellular and humoral rejection, recurrent disease and post-transplant malignancies. Former graduates have uniformly gone on to careers in which they can use and master their new skills. The focus on transplantation pathology provides a unique outlook in which the similarities and differences among patients who receive transplants across different organ systems such as heart, lung, liver, intestine, kidney, pancreas, small bowel and composite transplants become apparent. As a side benefit, one develops enhanced diagnostic skills beyond a single organ system. Venturing along the less well-travelled road has deepened my understanding of disease processes beyond what I could ever imagine.

In addition to my audacious opportunity described here at UPMC, many transplant pathologists instead train in subspecialty areas including pulmonary pathology, gastrointestinal pathology, and renal pathology fellowships, of which transplant pathology is a significant component. Given that prospective trainees reading this article might have a specific interest in lung transplantation, a list of pulmonary pathology fellowship programs that provide exposure to transplant pathology are provided. In addition, contact information for the University of Pittsburgh Medical Center comprehensive Transplantation and Hepatic Pathology fellowship is also listed below.

University of California, Los Angeles

Cardiovascular Pulmonary Pathology Fellowship

Fellowship Coordinator: Annetta Pierro

Phone: (310) 825-5719 **Fax:** (310) 267-2058

Website: www.pathology.ucla.edu

University of Chicago

Aliya Husain, MD, Director, Pulmonary Pathology Fellowship

Department of Pathology MC 6101

University of Chicago Hospitals

5841 South Maryland Avenue

Chicago, IL 60637

Website: <http://pathology.bsd.uchicago.edu/education/pulmpath.html>

Johns Hopkins Pathology

Cardiovascular - Respiratory Pathology Fellowship

Program Director: Charles Steenberg, MD, PhD

Johns Hopkins University School of Medicine

Department of Pathology, Ross 632

720 Rutland Avenue

Baltimore, MD 21205-2196

Phone: 410-502-5167

Fax: 410-502-5167

Website: <http://pathology.jhu.edu/department/training/fellowinfo.cfm>

Brigham & Women's Hospital

Corson Thoracic Pathology Fellowship

contact: Christopher D. Fletcher, M. D.

Department of Pathology

Brigham and Women's Hospital

75 Francis Street

Boston, MA 02115

Phone: 617 732-7530

Fax: 617 277-9015

Website: <http://www.brighamandwomens.org/pathology/Medical/CorsonFellowship.aspx>

University of Michigan Medical Center

Pulmonary Pathology Fellowship

Jeffrey L. Myers, M.D.

A. James French Professor and Director, Division of Anatomic Pathology

Department of Pathology

2G332, University Hospitals

1500 East Medical Center Drive

Ann Arbor, MI 48109-0054

website: <http://www.pathology.med.umich.edu/residency/fellowships.html>

Mayo School of Graduate Medical Education

Pulmonary Pathology Fellowship

Inquiries to: Marie-Christine Aubry, MD

Director, Pulmonary Pathology Training Program

Department of Pathology

Hilton 11, Mayo Clinic

200 First St.

Rochester, MN 55905

Phone: (507) 293-3839

Website: <http://www.mayo.edu/msgme/lm-pulmonary-path-rch.html>

Memorial Sloan-Kettering Cancer Center

Thoracic Pathology Fellowship

Program Director: Bill Travis

Location: New York City, NY

Phone: 212-639-6336

Website: <http://www.mskcc.org/mskcc/html/73459.cfm>

University of Pittsburgh School of Medicine

Thoracic Pathology

Director: Samuel A. Yousem, MD

Department of Pathology, Room C610

200 Lothrop St.

Presbyterian University Hospital

Pittsburgh, PA 15213

Phone: (412) 647-6193

Fax: (412) 647-3399

Website: <http://path.upmc.edu/fellowship/thoracic/index.htm>

Transplantation and Hepatic Pathology

Director: Michael Nalesnik, MD

Department of Pathology, Room E733

3495 5th Ave.

Montefiore Hospital

Pittsburgh, PA 15213

Phone: (412) 647-7645

Fax: (412) 647-2084

Website: <http://path.upmc.edu/fellowship/thoracic/index.htm>

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Lung Transplant Fellowship – Fellow’s Perspective in Toronto

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Prologue

The Toronto Lung Transplant Program is one of the many lung transplant programs in the world that offers both a surgical and medical fellowship. The program has a balanced exposure to pre- and post-transplant patients in both ambulatory and hospitalized patients. Our fellows also have the opportunity to improve their skills in medical and surgical thoracic procedures. There is a further option to complete elective rotations in other specialties, such as cystic fibrosis, pulmonary fibrosis, pulmonary hypertension and histocompatibility. We maintain a lecture series covering a broad range of lung transplant-related topics, as well as regular evening seminars over dinner or beer.

Our fellows come from all over the globe and we admire their courage and determination in leaving their home, their language and their culture for this fellowship. We always hope that in return, they not only get the educational benefit but also the opportunity to know our country and our diverse, multicultural city with its abundance of attractions, culture, food, entertainment and hockey fans, which are their own separate breed of Canadian. Most importantly, this exchange is reciprocal since every one of our fellows brings with them knowledge, background expertise and culture which, in turn, enriches our program and our staff. Thank you to our fellows for spending your valuable time with us!!

Cecilia Chaparro & The Toronto Lung Transplant Team

The Fellows’ Perspective

Since this Links issue is focused on lung transplantation and junior faculty / trainees, we thought we would combine these two concepts and spend some time talking with the lung transplant fellows in Toronto. Currently, there are 3 medical fellows and 4 surgical fellows from 7 different countries. The fellowship training lasts anywhere from 6 months to 2 years. How do these fellows really feel about their training? Interviews were sent off to all the fellows in our glorious fellow room. Fellows were interviewed in the midst of writing emails, dictating letters, or entering orders on the computers. We summarize the questions and answers below.

1. Why did you come to Toronto?

- I wanted to gain experience in lung transplantation.
- I had heard that this was one of the best training programs in lung transplant.
- This is probably the best program for future lung transplants surgeons.
- They accepted me.

2. What do you like about training in Toronto? To our great relief, there were many answers to this question. We will list a few here:

- I love the energy at work and how neatly structured the program is. Everyone works as a team and attending staff are so approachable.
- We are crazily busy with lung transplant and ECMO cases, but that's the reason why I am here. On top of that, we have a lovely supportive medical team.
- I appreciate the opportunity to learn from experts in lung transplantation, and enjoy working in a team committed to patient care.
- I think this is the only place in the world with so much particular lung transplants cases. A real teaching program with amazing staff.
- Busy, but I've learned a lot over the past couple of years and have had some great teachers.

3. OK, enough cheesy stuff. What about life in Toronto?

- Toronto is an exciting city. Despite the cold, everybody is so warm. But really, it is cold, Brrr!
- I like Toronto's neighborhoods. But forget about this, we don't have time to enjoy this beautiful Mother Nature.
- Toronto is a safe, vibrant and multicultural city.
- Including cold weather, Toronto is a really nice city to live in for families with small children. My kids love snow very much.
- This city is growing on me, but still suffers from a lousy hockey team and a severe shortage of decent bagel!
- Life here is excellent except for the terrible winter.

Although it is a highly demanding job, we all feel very lucky to be in this program working with the world's best mentors as they guide us in our career development. Amidst the busy schedule of long hours covering overnight call, answering pages from ECMO nurses, managing hyperammonemia (see other article in this Links issue), trying to understand anti-HLA antibodies, deciding Foscarnet, debating whether to start ambisome, willingly or unwillingly we are enjoying this journey; the hospital is our second home. If the vintage yellow couch in the fellow's room could talk, it would certainly agree that the fellows spend a little too much time at work...but much of that time is spent learning transplant medicine, discussing interesting cases, and developing long-lasting friendships.

While Toronto is way too cold (your first paycheck may be needed to buy a "Canada Goose" winter jacket) and we don't have time exploring, the people make up for it. As long as you have a cup of Tim Horton's coffee (most popular coffee chain in Canada) you're ok.

Well, now that we have advertised the Toronto Lung Transplant Program, may we get a coffee machine in the fellow's room, Dr Keshavjee?

Dora Amran

Special thanks to all fellows of Lung transplant and Transplant ID, Toronto General Hospital for a week of harassment.

Ebola and Thoracic Organ Transplantation: Too Near Yet Too Far

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Introduction

Ebola virus causes an acute and serious illness, which is usually fatal. The virus belongs to family Filoviridae. The virus causing the 2014 West African outbreak belongs to the Zaire ebolavirus species. In mid-2014, Ebola Virus Disease (EVD) became a concern for nations across the globe. The epidemic, primarily in West Africa, has killed over 9000 people, and has resulted in several satellite cases in the United States, United Kingdom, Spain, France, Norway and Germany [1]. The epidemic of EVD in West Africa has increased the potential risk of Ebola virus transmission in all geographical locations, including Europe and North America due to population movements.

Symptoms typically occur between 2-21 days after infection and may include fever, diarrhea, vomiting, muscle pain, stomach pain and unexplained bleeding. Currently there have been no studies examining the risk of EVD transmission through solid organ transplant but the likelihood of EVD exposure for potential organ transplant donors is very low.

Transmission

The natural hosts for Ebola virus are the fruit bats of the Pteropodidae family. EVD is spread through bat-to-human or human-to-human transmission, which requires direct contact with the blood, secretions, organs or other bodily fluids of infected individuals/animals or with surfaces and materials contaminated with these fluids. It is important to note that Ebola virus cannot be transmitted by air, water or food, but the virus can be maintained within animal reservoirs. In the health care setting, health-care workers have been infected while treating patients with suspected or confirmed EVD. This can occur through close contact with patients when infection control precautions are not strictly practiced. However, the risk of EVD transmission is minimized by safe handling of contaminated materials and the implementation of strict infection control measures.

The incubation period for EVD can be up to 21 days but EVD may spread before symptom onset [2]. It is important to note that the presence and quantity of virus in organs, tissues, blood and other bodily fluids changes over the course of the infection. The viral concentration peaks when the patient is most sick. In EBV infected individuals, virus can be detected and isolated from breast milk and semen weeks after recovery. However the data on when patients become viremic and infectious during the incubation period is limited. During the symptomatic phase of EVD, the virus is present in high concentrations in all bodily fluids, tissues and organs.

Diagnostic Tests

Several tests have been developed to diagnose the disease while still in the symptomatic phase. Ebola is currently being tested in laboratories, largely through the detection of the virus's nucleic acid (genetic material), using commercial or in-house tests. Nucleic acid tests (NATs) are more accurate, but are complex

to use and require well-established laboratories and fully trained personnel. In addition, turn-around time can vary between 12 and 24 hours. Recently WHO has approved the ReEBOV Antigen Rapid Test Kit (Corgenix, USA). The test provides results in 15 minutes and is based on the detection of Ebola protein, rather than nucleic acid. When compared to standardized NAT testing, ReEBOV Antigen Rapid Test is able to correctly identify about 92% of Ebola infected patients and 85% of those not infected with the virus. It is recommended to confirm the results from ReEBOV antigen Rapid Test Kit by testing a new blood sample using an approved Ebola NAT [3].

Implications for Transplantation

In the transplantation setting, the picture may be clearer when the potential recipient or donor is manifesting the symptoms of EVD. In these scenarios, the option of transplantation or consideration of donation should be withdrawn. However, the situation becomes more complicated if the potential recipient or the donor may have travelled to endemic area (West Africa) within the last six weeks but may not show any symptoms of EVD. Alternatively, a potential recipient or donor could have been in close contact with a health care worker who was treating EVD patients. In these cases, there may be a risk of EVD transmission from the organ donor.

In the absence of available rapid diagnostic tests for EVD various transplantation societies have recommended epidemiological screening. The screening questionnaire should be updated to facilitate accurate risk assessment with regard to the current epidemic. The most important factors to consider are epidemiological in nature: including recent travel to outbreak areas with or without known exposure to infected individuals or animals [2]. Any travel history to the outbreak area, monitoring after EVD exposure or treatment for EVD should result in organ donor decline. Furthermore, prior studies have shown that EVD DNA can persist for three days after antigen clearance and virions can persist in the semen for 101 days, vaginal fluid for 33 days, urine for 23 days, breast milk for 15 days and skin for 6 days after symptom onset [4,5]. Therefore the duration of risk for EVD transmission through organ transplantation cannot yet be determined.

The European Union, including the UK, has taken a conservative approach: excluding individuals from donation of blood or any "substance of human origin" for 60 days after returning from an area of EVD activity or other known exposure, with an exception of 1 month in the case of "urgent need for organ transplantation" if negative Ebola virus nucleic-acid amplification testing is performed. In the United States, the Organ Procurement and Transplantation Network/United Network for Organ Sharing Ad Hoc Disease Transmission Advisory Committee recommends excluding from donation for 21 days after an area of EVD activity or known exposure. No provision for urgent need of organ transplantation is provided. In donors who have recovered from Ebola infection, the European Union recommend deferral of living donation for 12 months from onset of illness or from detection of EBV infection. In addition, such living or deceased donors should test negative for EBV by NAT. In exceptional cases, potential deceased organ donors can be considered if more than two months has passed since recovery AND if negative for EBV by NAT [2,6,7].

No specific guidance has been provided for the potential organ recipients. However, it seems prudent to apply the same criteria as of donors in asymptomatic potential recipients.

Organ transplantation requires that each donor is highly scrutinized to maximize the probability of survival and success. EVD provides a great risk to transplant recipients, visitors and health care workers. Therefore each case should be examined individually. Current research is looking for a treatment for EVD, and the results of these studies will again change the donor screening process to continue to protect transplant patients.

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

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Yet Another Little Thing to Keep in Mind When Treating Lung Transplant Patients: Hyperammonemia

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Here, I present a patient I met on my first day on service as a clinical fellow after arriving in Toronto from Finland some three years ago. Needless to say, that day was somewhat overwhelming and, in retrospect, I believe I had my mouth fixed in a half-open state and didn't utter a single coherent word during those 12 hours. Nevertheless, this patient's case stayed in my mind and I would like to share his story with you.

The patient was a Caucasian male in his early sixties with IPF. He was also known to have atrial fibrillation and type II diabetes. He was listed for transplant in the summer of 2011 and underwent a right single lung transplant a little less than a year later. Due to elevated pulmonary pressures during the operation cardiopulmonary bypass was used. The patient underwent perioperative and postoperative plasmapheresis according to our protocol as his virtual crossmatch was positive [1]. A day after transplantation, the patient had to be taken back to the operating room for bleeding that settled down afterwards. The perioperative cultures grew *S. pneumoniae*, for which he received treatment G-penicillin. After the re-operation, he was hemodynamically stable and required only minimal ventilator support. His immunosuppressive regimen consisted of cyclosporine, mycophenolate mofetil, and corticosteroids.

Unfortunately, the patient became agitated and confused after the transplantation to the extent that he could not be weaned off the ventilator, despite good gas exchange. His laboratory tests showed normal liver and kidney function, except for a minimally elevated ammonium level of 49 $\mu\text{g/dL}$ (normal < 34 $\mu\text{g/dL}$). Cyclosporine levels were within target. At this time, his confusion and agitation were thought to be related to medications. However, he became increasingly delirious. There were no other neurological deficits. An EEG, MRI of the head and lumbar puncture were performed 2 weeks after transplantation but showed nothing of significance. His cyclosporine was held briefly and switched to tacrolimus without any effect on his neurological state. A plethora of different anti-delirium drugs were tried without significant benefit.

Three weeks after transplantation, the patient became more somnolent and also showed signs of renal dysfunction. The brain was re-imaged without any clear pathological findings. Soon after this, the patient had recurrent grand mal-type seizures and he became anuric. His ammonium level was repeated at this point and, to our surprise, the level was extremely high at 254 $\mu\text{g/dL}$. Hemodialysis and medical therapy were initiated and did result in lowering of the ammonium levels. However, our patient never regained consciousness, entering in a profound stage of coma and with subsequent signs of brain stem herniation: during the following days his right pupil became dilated and there were no brain stem reflexes present. A new CT of the head showed diffuse encephalopathic changes. After family meetings, life support was withdrawn and the patient passed away a little over a month after his transplant. An autopsy was performed and showed signs of extensive liver cirrhosis that were not identified during his lung transplant assessment. Apart from the elevated ammonium level, his liver function tests were completely normal throughout the postoperative course.

Several reports of hyperammonemia after transplantation have been published in recent years. According to one report, hyperammonemia is seen in 4% of patients after lung transplantation and can be present even in the absence of liver dysfunction [2]. Hyperammonemia is associated with a high mortality rate,

especially when associated with seizures [2]. Prompt recognition of hyperammonemia and initiation of hemodialysis are central in the treatment algorithm [3]. Other therapeutic options include decreasing ammonia loads by stopping protein-containing feeds, using antimicrobial therapy to reduce urease producing bacteria, or increasing ammonia excretion with lactulose. Certain pathogens, such as *mycoplasma hominis*, have been associated with hyperammonemia and should be aggressively sought after and treated [4]. Additionally, L-arginine, sodium phenylacetate, and sodium benzoate can be considered to increase ammonia metabolism. Brain edema should also be treated if present and calcineurin inhibitors should be held [5].

I learned quite a few things from this unfortunate case: Firstly, ammonia levels should be measured whenever a postoperative patient presents with altered mental status or other neurological symptoms. Secondly, we should consider more extensive pre-transplant evaluation of the liver. In our patient, his liver disease was likely the cause of hyperammonemia and untimely demise, even though other exacerbating factors may have contributed as well. Our program has performed over 300 lung transplants after this case, and while we have identified a handful of patients with hyperammonemia, our awareness of this problem with early diagnosis and treatment were likely key in avoiding further deaths.

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

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Mind your P's and PR's for the French Riviera with Elegance and Style: It's Your Presentation

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There were the PRs for all in [Prague](#) and [Montreal](#) and last year, we encouraged you to let your presentation Purr in [San Diego](#).

This year it is time again to prepare to deliver a good speech or make a great presentation, let's again refer to the *January 2012 ISHLT Links, Issue 8, Volume 3*, [On Teaching and Learning](#). From this article, take note of the following points: 1) the one who learns the most while sharing knowledge is the teacher or presenter, and 2) when teaching, presenting your poster, delivering your lecture, or writing your paper, you should ask yourself, "What do I want the intended audience to know five years from now?" Perhaps better advice can be found in the [rules for posters and presentations](#). Finally, the best advice for the success of ISHLT 2015 in Nice comes from the *June 2011 ISHLT Links, Issue 1, Volume 3* article, [On to Prague](#), from our Program Chair, Stuart Sweet: "*brevity and clarity will be key, particularly in oral presentations.*"

PROCRASTINATION

Whatever means you have used to overcome procrastination, now is the time to prepare but be mindful of Benjamin Franklin's quote, "By failing to prepare, you are preparing to fail." You will also find more of his wise words on procrastination in *January 2012 Vol. 3, Issue 8*, [Quotable Quotes](#).

According to the famous Irish Playwright and Critic, George Bernard Shaw, Mark Twain is the "American Voltaire" who taught Shaw this great piece of wisdom: "*Telling the truth's the funniest joke in the world.*" This American Voltaire was subjected to procrastination, all the time: "*I was born lazy. I am no lazier now than I was forty years ago, but that is because I reached the limit forty years ago. You can't go beyond possibility.*"

PREPARATION

Knowing these basic rules for being prepared will make you aware of your allotted time (see *Vol. 3, Issue 1*, [Rules of Engagement](#)). Within this allotted time, your presentation is to comprise no more than 75% of the total time for you to speak. Why? You want your presentation to be memorable. To be memorable, find a way to captivate and/or involve the audience. Involving the audience is easier than captivating them.

Save time for questions and answers and invoke the Chinese proverb "*Tell me and I'll forget; show me and I may remember; involve me and I'll understand.*"

While preparing, ask, what will my audience gain by this slide? What will my presentation lose? Be aware how the audience divides their time between you and the screen. Slides can interfere with the audience-lecturer relationship. What happens when the lights are dimmed? It induces sleep! With this thought, remember-NEVER read from your slides!!! They are there to enhance and clarify, not duplicate, not become a substitute and certainly, not distract. The slides are to supplement not prompt your talk. What you say must differ from what the audience reads, so keep your slides simple and direct. Each slide should convey one idea, have one diagram or contain one or two pictures. As a gentle reminder: **Living by slides could lead to dying by slides.**

Finally, do not use a pointer. The audience is distracted when you turn away, and the microphone may lose your voice. If there are multi-screen projections, the pointer is seen on only one. Using the mouse is an alternative, but you have to look at the screen, thereby you lose eye contact. Instead, *build pointers into your slides-arrows on a photo, underline a key part of a table, encircle the data you are referring to, etc.*

PRACTICE, PRACTICE, PRACTICE

During preparation, be self-critical and **practice**. Videotape yourself. Your goals are to liven up your presentation, so practice being dynamic, informative, interesting and persuasive. Consider your presentation as a performance (although tempered with the notion that you are not competing for an academy award!). Study the mannerisms of great lecturers or your favorite speakers. To be an effective lecturer, you must plan, begin, and think about your audience.

While practicing your speech, vary your sentence length. Use short action verbs and short crisp sentences. Long complex words are more difficult to pronounce correctly in front of 2000 people. Use rhetorical questions (frequently more informative) rather than making declarative statements. Be aware of your tone of voice, variations in volume, and appropriate gestures. **Do not speak in monotone.** Vary your vocal inflections from loud to soft and from a high to low pitch. Paradoxically, the audience pays closer attention when you become quiet or soften your voice. Convey the idea to the audience that there's no place you'd rather be than talking about the topic you are enthusiastically delivering free from any distraction. Passion—and commitment to the subject—matter most when giving a presentation.

PRESENTATION

Before the session starts, **always** check the podium and, ideally, talk to the projectionist, if there is one. Will they display your opening disclosure slide? What mechanism advances the slides (mouse, button, keyboard)? Who controls the lights? Is there a timer controlled by the Chair? Doing all this ahead of time makes you look professional and avoids embarrassing pauses and gaps.

Remember to stand upright. Don't lean on the lectern (unless very drunk from the night before) or stand still for a long time. Walk around, and consider standing in front of the lectern instead of behind it. Use hand gestures economically and be careful about swaying or using bizarre or repetitive gestures.

And remember, appearance is important. The old adage applies here, especially for us silver-tongued, graying bunch: "We may not be any good, but at least we try to or think we look good." In other words,

dress to impress! During your presentation, smile, make eye contact and choose your mood. You know your topic, so show passion for it. Bring enthusiasm and delight to the subject!

Quick helpful tips:

- Begin your presentation by **introducing** your topic. - *Introduction*
- **Approach and means** to support or refute your topic. - *Methods*
- **Talk about** your topic by giving details and various means of supporting your topic. - *Results and Discussion*
- Finally, **summarize** your topic. - *Conclusions*

Simply put, *Tell* the audience what you will say, then *say* it and *repeat* what you have just told them. Keep your messages clear and simple. Most importantly **DO NOT EXCEED YOUR TIME LIMIT** by cramming too much material in your presentation. Know your time limit—this applies just as much during hours as after.

With these points in mind, you are now on the road to a great formal presentation. Through repetition and review you will know your topic better than most—if not the entire—audience, therefore you must keep your presentation simple, especially simple from your point of view.

Most of all, **DO NOT EXCEED YOUR TIME LIMIT** by cramming too much material in your presentation.

Finally with *repetitious* repetition:

1. Keep it simple
2. Know your time limit and stick to it
3. Include full disclosures at the beginning and references at the end
4. Leave time for questions

Oh and did we mention, PRACTICE, PRACTICE, PRACTICE!

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This article has been modified from other versions which initially appeared in the March 2012 issue of the ISHLT Links Newsletter, [Procrastination, Preparation, Presentation, Prague](#) then the April 2013 and 2014 issues, etc. etc. We thought we would assist the procrastinators, then again maybe NOT by putting this in the March 2015 issue.

How Italy Lost the “French” Riviera...and the 35th ISHLT Annual Meeting

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Nice is the fifth largest French city, its airport is the third largest in the country, and has a hotel room availability, second only to Paris. In addition to these “grandeur” features, Nice is in the heart of one of the “Nice”-st and most glamorous coastal areas in Europe. Despite this environment, the meeting Dr. Zuckermann and his Program Committee have put together is likely to prompt more delegates in the meeting rooms than on the beachfront promenade. However, if you find yourself jogging around before the sunrise symposia (or coming back after a brave night), just west of the Conference Center, you will cross a wide XVIII Century square with a large fountain surmounted by a tall statue of Giuseppe Garibaldi, the Italian hero (known also as the hero of the two worlds because of his revolutionary actions in South America and in Europe). Garibaldi, heading a revolutionary red-shirted army of about a thousand people, battled in the south of Italy conquering the kingdom of the two Sicilies, bringing these territories to be annexed by the kingdom of Piedmont and Sardinia, to establish the kingdom of Italy in 1861. Thus, how come that a French city is giving such emphasis to an Italian Father of the Nation?

Garibaldi was born in Nice (Nizza or Nissa how it was called back then) in 1807 when the city was part of the Kingdom of Piedmont and Sardinia and its inhabitants were considering themselves as Italians. Indeed the city of Nizza had been clearly part of the Italian cultural and political area since the VII century when, after the fall of the Western Roman Empire joined Genoa in a league of independent Liguria cities. Moreover, in 1391, the Independent City of Nizza signed a treaty of protection with the Duke of Savoy, the ancestor of Piedmont-Sardinia royal family, establishing that he and his successors would have never let other Princes rule the city. However, the old Duke and Nice citizens would have never imagined the web of political interests that brought Garibaldi to achieve French citizenship after conquering Italy.

The story stems as one of the consequences of Russian expansive policy towards south-western coastal areas of the Black Sea, leading France and UK to fight the Crimea war in 1853-56. In those years, the Kingdom of Sardinia (Piedmont) was supporting the Italian nationalists’ ideologies to foster its expansive ambitions towards Milan and Venice regions that were part of the Austrian-Hungarian Empire. However the kingdom was too small to ever imagine a regular war against Austrians. Crimea war, however, was a good chance to play a role in the Western European Arena and be part of an international coalition. Aiming to build a long-term alliance with Napoleon III, the France emperor nephew of Napoleon Bonaparte, Vittorio Emanuele II, the king of Sardinia sent troops to Crimea side-by-side with the French army (and sent also his 16 yr-old niece to marry Napoleon’s cousin). Russia lost the war, and western European Kingdoms reinforced their influence on the Black Sea and Turkish Empire, with mild support from Austria. In this setting, the Piedmont Prime Minister, Sir Camillo Count of Cavour, gained importance and started secret negotiates with Napoleon, negotiating for French support, including troops and funding, in a war against Austria to conquer Venice and Milan. In return taxes from the new territories would be levied to cover the loans interests, and Nice and Savoyshire were to come under French control in an effort to justify military involvement in the eyes French court and in public opinion.

At those times, after the conservative “Vienna restoration” following the French revolution, European democracy was a light entity, formally declared in the monarchical constitutions by the recognition of

parliaments elected by people. However, public opinion, people's wills, and polls were often "managed" following the Kings' and governments' interests.

In 1859 the Piedmont-France plot started with people's rallies in Tuscany and Modena Dukedoms, areas controlled by Austrians, and fostered by Piedmont secret services. These served as an excuse to declare war against the Austrian empire. French armies quickly conquered Lombardia (Milan region), but because of hostile feelings from the United Kingdom and Germany towards his Italian policy, Napoleon quickly asked the Austrian Emperor to sign a peace treaty. France and Austria then established that Lombardia be annexed to Piedmont, Venice area remain a kingdom under Austrian control, Tuscany had to restore an Austrian-friendly prince, and North-Central Italy had to be established as a Confederation of states headed by the pope. This plan, initially accepted by Vittorio Emanuele, but not by his prime minister, did not go through, due to riots in Tuscany, Modena, Parma and Bologna that brought these territories to be part of Piedmont, the future Kingdom of Italy.

Despite the new situation being far from that which was agreed upon in the initial France-Piedmont secret agreement, Napoleon pretended his payback with Nice and Savoy. Cavour and Vittorio Emanuele then bravely folded their will to the stronger ally.

Thus, with astonishing hypocrisy, Piedmont supported its expansive policy towards east and central Italy with the support of the right of people self-determination and freedom of Italians from foreign domination, while on the other hand passively leaving eastern territories inhabited by Italians to be ruled by France. The passage of Nice to France, however, had to be formally endorsed by a popular vote. Thus, after replacing all the local administration with French supporting bureaucrats, prohibiting any pro-Italian campaign, and closing all the independent newspapers, Italians from Nice were called to the polls. In the election days, French army and police replaced Piedmont forces to guarantee the "legitimacy" of the polls, and the voting sheets were pre-printed with a "YES" to France annexing, while whoever would have wished to vote "NO" had to write it by himself. The only few "NO" votes were coming from the sailors and soldiers who voted on their ships. Garibaldi, outraged, resigned from his seat in Piedmont parliament.

The ambitions of Cavour and Vittorio Emanuele, however, allowed for the establishment of a unified Italian kingdom in 1861, completed in 1866 with Venice and in 1870 with Rome. This resulted in a colonial policy of Savoy family over the rest of the Country "freed" from foreigners – but forgetting that the Pope and the King of Naples-Sicily were both Italians ruling two legitimate (although not really democratic) states, and that French was the main language spoken at the court of Savoy family until 1861...

Despite it's past, Nice nowadays is happily French, with few remembrances of Italian ancestors. Its history serves as an example of the long-term distance between the real and the declared interests of empowered policymakers of over 150 years ago. Improving our consciousness of living in a real modern democracy where the peoples' will is not manipulated, politicians are honest servants of the Country, and freedom is granted across all social classes... (Any similarity to any current political scenario is purely coincidental...).

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