

## IN THE SPOTLIGHT: ISHLT's Guide to Nice, France: Ode to Art

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With the Holiday Season behind us, it's back to the daily grind. However, for us at ISHLT Headquarters, it that the Annual Meeting in Nice is that much closer; as if the holidays hadn't been hectic enough! With this in mind, we wanted to remind everyone that there is always something to look forward to, even as the bright lights and holiday cheer fades.

This month, we have reached our Ode to Art! Nice has several art museums that feature famous pieces, as well as those that act as a stage for the more local talent. With varying styles, time periods, and cultural influences, one is simply not enough; time permitting, wander through as many as possible and soak up the works along with all that French sunshine.

- **Chagall Museum (*Musee National Message Biblique Marc Chagall*)** – With a permanent collection featuring the biggest public collection of works by Marc Chagall, the museum houses over 400 painting, gouaches, drawings, wash drawings and pastels.
- **Museum of Modern and Contemporary Art (*Musee d'Art Moderne et d'Art Contemporain*)** –With nearly 1.200 works, the MMAC illustrates the key role of Nice in the development of groundbreaking movements from the 1960s and 1970s to the present
- **Musee Matisse** - From his first paintings in 1890 to the gouache drawings that Matisse produced at the end of his life, this collection is known for its presentation of all the techniques the artist used to express his art.
- **Musee Departmental des Arts Asiatiques** - standing in the artificial lake in Parc Phoenix, in a building of white marble and glass the Asian Arts Museum evokes the spirit of Asia, India, Southeast Asia, China and Japan through both classical and contemporary works.
- **Musee des Beaux Arts Jules Cheret** - This museum is the heir to the first Municipal Museum of Nice featuring paintings and sculptures from the 13th to the 20th century.
- **Galerie des Pochettes** - The municipal galleries are dedicated exclusively to temporary exhibitions of contemporary art.

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References:

## **Donor Management: Past, Present and Future**

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Once upon a time procurements went like this: Guys with knives showed up and management decisions were the products of competing interests contested by alpha dogs. There were no OPOs, no UNOS, and transplant center surgeons and coordinators ran the show. Then, federal regulation structured the process and, buffered by OPO personnel, transplanters gradually disengaged from donor management. A modern transplanter's procurement focus is A) Deciding if and for whom to accept an organ, B) Coordination of two surgeries, and C) Preoperative preparation of the recipient.

Outsourcing donor management is an efficiency with a cost: Organ wastage and suboptimal organs.

Organ wastage: Young healthy kid becomes a donor, EF is 25% and not improving. The OPO is juggling its usual flaming balls, weather, growing impatience of the grieving family and host hospitals rapidly approaching morning OR schedule. Board question: "What donor management changes should be made and what biomarkers/metrics predicting reversibility can the OPO invoke to justify its delay to interested parties?" Answer: None. The answer does not currently exist.

Suboptimal organs: It is no mystery that hemodynamic, inflammatory and coagulopathic derangements affect short and long-term organ function in the living, so it is not a reach to speculate that these events in the donor affect graft function and survival. However, the U.S. transplanter's current donor role pre-implant is limited to selection, explant, and delivery.

Several U.S. initiatives reengaging ISHLT members in donor management are ongoing. These include the DMRCC (Donor Management Research Consensus Conference), which is now named DIREP (Donor Intervention Research Expert Panel) and the Donor Management Task Force (DMTF) "Metrics Project".

The DIREP continues to develop donor and recipient consent algorithms for donor research, and is mapping out the blueprints for a national oversight body to regulate the research. Timeline for first draft deliverables are January 1, 2015. The "Metrics Project" establishes monitoring guidelines for non-targeted organs of donor research. Its thoracic goal is to identify unintended adverse (or potentially beneficial) consequences to hearts and lungs of donor interventions directed at abdominal organs. The AST Board has approved same-purposed metrics for liver and kidney. ISHLT metrics were developed by ISHLT task forces of both the Heart and Lung Scientific Councils and are currently under review by the Standards and Guidelines Committee. Personally I envision the metrics being used by a National Oversight Body with elements selectively required on a study-by-study basis.

For decades, transplant research and management has been a postoperative enterprise. Reconnecting with our historical roots in donor management is an opportunity begging to be seized.

Redirecting clinical and scientific acumen to the pre-explant timeline is an investment we cannot afford to miss.

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Disclosure statement:

## The “Art” of Donor Heart Selection

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Donor availability has always been a key limiting factor in heart transplantation. Since 2005, there has been an upward trend in the number of heart transplant candidates who are added each year to the waiting list [1]. Based on the OPTN data as of December 19, 2014, there were 4,016 heart transplant candidates on the waiting list in the United States. However, only 2,513 heart transplants were performed in 2013. Contributing to this negative balance in demand and supply is the fact that about 63% of the currently available donor hearts are discarded, in part due to the stringent selection criteria [3].

The challenge in donor heart selection is to maximize utilization while avoiding poor outcomes. There is significant variation among institutions and individuals with regard to the donor heart selection and the process is still deservedly referred to as the “art” of donor selection. Khush and colleagues sought to identify the current predictor of cardiac allograft nonuse [4]. They studied the association of 11 donor risk factors with allograft use in a cohort of 1,872 organs donors. In a multivariable model, the most important predictors of use were donor age, cause of death, LVEF, and history of hypertension. However, none of these four characteristics were associated with increased recipient mortality at one year after transplant.

Our center’s data [5], as well as observations from the ISHLT registry [2], suggest that increasing donor age is a risk factor for mortality after cardiac transplantation. However, a single center study from Portugal [6] showed similar incidence of PGD, acute rejection and 5-year mortality in heart transplant recipients from donors of at least 50 years of age (mean 52 years) compared to the recipients from donors younger than 40 years (mean 28 years). One important difference between the donor groups was statistically significantly shorter ischemic time in the older donor group. In fact, in 58% of the older donor group, the total ischemic time was < 60 minutes. A multicenter study from Spain came to a similar conclusion and showed no difference in the odds of acute rejection and overall mortality between recipients from donors > 50 years old and those from donors < 50 years after adjustment for confounding factors such as recipient age [7]. The age of the donor as a risk factor needs to be re-addressed, especially as the upper limit of donor age has been increasing over the past few years. According to the latest data, the median donor age for heart transplant has increased to 35 years in the U.S. [2] and 43 years in Europe (Eurotransplant annual report, 2013).

With regard to the donor/recipient gender mismatch, a UNOS registry study showed that male recipients of female donor hearts had the lowest 5-year actuarial survival, whereas 5-year actuarial survival in female recipients was not affected by donor sex [8]. Data from our center, reviewing the

records of 857 heart transplant patients, were similar to these findings with an important difference—we found that not only do male recipients of female donors have poor long-term survival, but so do female recipients of male donors [9]. A recent experience in our center raised a unique challenge when a transgender donor heart was offered for a male recipient. This again highlighted the uncertainties about the importance of gender mismatch in heart transplantation.

There are several other donor characteristics that have been suggested to be associated with poor outcomes but a consensus is lacking among the experts about their significance in donor heart selection. Presence and severity of the left ventricular hypertrophy, presence and severity of coronary artery disease manifested on coronary angiogram, cardiac hemodynamics such as ideal right atrial pressure and lastly, elevation of cardiac biomarkers are among such characteristics.

Other than donor risk factors, several of the recipient characteristics should be considered in donor heart selection. For example, there has been a tendency in heart transplant community to favor oversized donor hearts for heart transplant candidates with mild to moderate degree of pulmonary hypertension. Review of data from our center showed similar 1- and 3-year survival between recipients with pre-operative systolic pulmonary artery pressure > 40 mmHg who received oversized versus undersized donor hearts [10]. In this study, the size matching between donors and recipients was based on weight. This raises a separate question about the best parameter for size matching, as some experts strongly prefer height, BMI or left ventricular mass index for this purpose.

Donor heart selection process and matching the donor heart with the right recipient involves meticulous review of several of the donor and recipient characteristics, as well as consideration of factors such as ischemic time and problems in special populations such as the risk of bleeding and prolonged operations in heart transplant candidates with durable mechanical circulatory support devices. Ideally, a scoring system that can incorporate all these multitude of factors can maximize donor heart utilization without jeopardizing the outcomes. Although valuable steps have been taken in developing a donor heart scoring system [11], implementing a reliable scoring system is far from completion and requires concerted effort and multi-center clinical trials to provide accurate and reliable data. In the meantime, there is need for a consensus among the experts to establish a standardized approach for donor heart selection and to develop a platform for future research.

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#### References:

1. Stevenson LW. The urgent priority for transplantation is to trim the waiting list. *J Heart Lung Transplant*. 2013 Sep;32(9):861-7
2. Lund LH, Edwards LB, Kucheryavaya AY, et al. The registry of the International Society for Heart and Lung Transplantation: thirty-first official adult heart transplant report--2014. *J Heart Lung Transplant*. 2014 Oct;33(10):996-1008
3. Israni AK, Zaun D, Rosendale JD. OPTN/SRTR 2012 annual data report: deceased organ donation. *Am J Transplant*. 2014 Jan;14 Suppl 1:167-83.

4. Khush KK, Menza R, Nguyen J, et al. Donor predictors of allograft use and recipient outcomes after heart transplantation. *Circ Heart Fail*. 2013 Mar;6(2):300-9.
5. Tehrani YS, Yu Z, Luu M, et al. The policy of placing older donors into older recipients: is it worth the risk? *Clin Transplant*. 2014 Jul;28(7):802-7.
6. Prieto D, Correia P, Baptista M, et al. Outcome after heart transplantation from older donor age: expanding the donor pool. *Eur J Cardiothorac Surg*. 2014 Jul 9. pii: ezu257.
7. Roig E, Almenar L, Crespo-Leiro M, et al. Heart transplantation using allografts from older donors: Multicenter study results. Article in press, published online: November 3, 2014.
8. Khush KK, Kubo JT, Desai M. Influence of donor and recipient sex mismatch on heart transplant outcomes: Analysis of the International Society for Heart and Lung Transplantation Registry. *J Heart Lung Transplant*. 2012 May;31(5):459-66.
9. Kittleson MM, Shemin R, Patel JK, et al. Donor-recipient sex mismatch portends poor 10-year outcomes in a single-center experience. *J Heart Lung Transplant*. 2011 Sep;30(9):1018-22.
10. Kwon MH, Wong S, Kittleson M, et al. Selecting oversized donor cardiac allografts for patients with pulmonary hypertension may be unnecessary. *Transplant Proc*. 2014 Jun;46(5):1497-501.
11. Smits JM, De Pauw M, de Vries E, et al. Donor scoring system for heart transplantation and the impact on patient survival. *J Heart Lung Transplant*. 2012 Apr;31(4):387-97.

## **Revisiting Balloon Pulmonary Angioplasty for the Treatment of Non-Operable Chronic Thromboembolic Pulmonary Hypertension**

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Chronic thromboembolic pulmonary hypertension (CTEPH) is a potentially curable condition [1]. The current treatment of choice for CTEPH is pulmonary endarterectomy (PEA) in patients who are considered candidates for surgical therapy. However, some CTEPH patients have thrombotic disease that affects the distal segmental pulmonary artery branches, while others have major medical comorbidities which make them less than optimal candidates for surgical PEA. So, what are the alternatives when there is an inadequate response to medical therapy with pulmonary vasodilating agents such as Riociguat?

Angioplasty has been performed in most vascular beds with excellent results since Dr. Andreas Gruentzig paved the way for balloon angioplasty. However, experience with angioplasty in the pulmonary vasculature has been mostly limited to pediatric patients with congenital pulmonary artery stenosis.

A group from Boston had explored the possibility of performing pulmonary angioplasty to treat patients with CTEPH in the early 2000s with limited success due to significant complication rates [2]. These patients could develop reperfusion pulmonary edema, hemoptysis and other vascular complications, and experience with this procedure in the United States has been very limited.

However, over the last several years, Japanese investigators have revisited the use of balloon pulmonary angioplasty (BPA) in CTEPH patients and have gradually refined the interventional technique for this procedure. [3] Indeed, the recent Japanese experience has shown that BPA can be performed with success in terms of reducing pulmonary artery pressures and PVR without the major complications rates which had previously been associated with this procedure.

They have achieved this, in part, by being very meticulous in technical aspects of the procedure, including use of smaller balloons and also by avoiding performing BPA to all the involved segments at one session. BPA performed in four to five sessions over a course of weeks has significantly minimized the complications that are unique to BPA, including rates of reperfusion pulmonary edema. Inami et al. went so far as to devise a scoring system to predict the risk of reperfusion pulmonary edema (Pulmonary Edema Predictive Scoring Index, PEPSI score) [4] in patients undergoing BPA for CTEPH.

I recently had the opportunity to travel to Japan and visit one of the premier centers in Osaka to learn their techniques for BPA. What was particularly enlightening was that chronic thromboembolic disease that we would consider non-operable in the United States could frequently be addressed by

BPA in experienced hands. As such, BPA has a huge potential in treating and palliating very sick patients with CTEPH who are otherwise not good candidates for PEA and who may have limited response to drug therapy. With the lessons learned in Japan, we recently performed the first BPA procedure in a non-operable CTEPH patient at our institution (see figure).

Given promising results from several Japanese series (from multiple centers) using BPA in non-operable CTEPH patients, we should consider offering this promising alternative therapy to our patients with non-operable CTEPH, albeit with several caveats. We should note that there is no large scale or long-term data with BPA therapy in terms of PVR reduction, reduction and PA pressures or outcomes in CTEPH patients 5. BPA should only be considered in those PH centers where there is enough expertise to treat CTEPH patients in a multi-disciplinary fashion, including the providing the option of evaluation for PEA surgery [5]. Lastly, the results of BPA are operator dependent and interventionalists in the United States and Europe need to gain greater familiarity with this procedure in order to replicate the results achieved in the Japanese experience.

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#### References:

- 1) Lang IM, Madani M. Update on Chronic Thromboembolic Pulmonary Hypertension. *Circulation*. 2014; 130:508-518.
- 2) Feinstein JA, Goldhaber SZ, Lock JE, Ferndandes SM, Landzberg MJ. Balloon pulmonary angioplasty for treatment of chronic thromboembolic pulmonary hypertension. *Circulation*. 2001; 103:10-13.
- 3) Kataoka M, Inami T, Hayashida K, Shimura N, Ishiguro H, Abe T, Tamura Y, Ando M, Fukuda K, Yoshino H, Satoh T. Percutaneous transluminal pulmonary angioplasty for the treatment of chronic thromboembolic pulmonary hypertension. *Circ Cardiovasc Interv*. 2012; 5:756-762.
- 4) Inami T, Kataoka M, Shimura N, Ishiguro H, Yanagisawa R, Taguchi H, Fukuda K, Yoshino H, Satoh T. Pulmonary Edema Predictive Scoring Index (PEPSI), a new index to predict risk of reperfusion pulmonary edema and improvement of hemodynamics in percutaneous transluminal pulmonary angioplasty. *J Am Coll Cardiol Cardiovasc Interv*. 2013; 6:725-736
- 5) Hoeper MM. Chronic thromboembolic pulmonary hypertension at the crossroad. *Eur Respir J*. 2014; 43:1230-1232.

## Update on Combination Therapy for Pulmonary Arterial Hypertension

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Pulmonary arterial hypertension (PAH) is associated with significant morbidity and mortality, and is often diagnosed relatively late in the disease course. As a result, the consequences can be devastating in terms of impact on right ventricular function, functional capacity and ultimately survival.

A similarly high morbidity and mortality can be seen in many rheumatologic and oncologic disorders, but these disorders are often approached in a different manner than PAH traditionally has been. How are they treated differently, you might ask?

The general treatment paradigm in PAH has typically been to add drugs sequentially, with physicians adding more agents if patients fail therapy. In contrast, many rheumatologic and oncologic disorders are targeted using a multi-mechanistic approach from the start, in which physicians use several drug combinations to effectively treat the disease and gain disease remission, while being cognoscente of the possibility of causing more adverse events.

When a patient with newly diagnosed, treatment naïve World Health Organization (WHO) group I PAH presents to my office with significant functional limitations, I, like many PAH clinicians, often prescribe combination therapy, especially if there are high risk features present, with the thought that 2 or more agents with different mechanisms of action would have synergistic effects. But do I have evidence from any large clinical trials to support my practice?

The answer, until recently, was no, as no large trial had tested multi-drug combination therapy. However, this past fall, the Ambrisentan and Tadalafil in Patients with Pulmonary Arterial Hypertension (AMBITION) trial was a landmark phase 4 study presented at the European Respiratory Society (ERS) International Congress in Munich, Germany. Five hundred patients were randomized (2:1:1) to receive ambrisentan and tadalafil (n=253) or monotherapy with ambrisentan (n=126) or tadalafil (n=121) (titrated from 5 mg to 10 mg once-daily and from 20 mg to 40 mg once-daily for ambrisentan and tadalafil, respectively). This was a multicenter, event driven study that included treatment-naïve patients with WHO functional class 2 and 3 PAH with a primary endpoint of time to first clinical failure event. The trial reached its primary end-point driven by a marked reduction in PAH related hospitalizations from 12% with monotherapy with either drug, to 4% with combination therapy at 24 weeks. There were no statistically significant differences in mortality between the two groups. The combination of the therapy did not result in new adverse events and discontinuation rates of drug were similar across all groups. Improvement in 6 minute walk was about 24 meters in the monotherapy arm and 49 meters in the combination arm of therapy. The finalized manuscript is yet to be published so full details of the results are to follow.

Just when it seemed that we had definitive evidence to support combination therapy in PAH, the Effects of Combination of Bosentan and Sildenafil vs Sildenafil Monotherapy on Morbidity and Mortality in Symptomatic Patients With Pulmonary Arterial Hypertension (COMPASS-2), was presented at the CHEST conference this past fall. COMPASS-2 was a prospective, double-blind, placebo-controlled, event-driven study evaluating the progression of PAH in two groups of patients already treated with sildenafil; one group receiving placebo and the second group receiving bosentan. COMPASS-2 did not meet the primary endpoint of time to first morbidity or mortality event; bosentan showed a risk reduction of 17% versus placebo ( $p=0.25$ ), which was not statistically significant. Also of note, reductions in NT-proBNP were more pronounced in the combination therapy arm, but this was not a primary endpoint.

So how do we reconcile these 2 large studies of combination therapy with disparate results? Certainly, the COMPASS-2 trial had some methodologic limitations, including potential for selection bias, slow enrollment, and loss of follow-up, which may have impacted the primary efficacy endpoint. Another interpretation is that the current evidence suggests that up front combination therapy is superior to add-on sequential combination therapy. Yet another hypothesis might be that the combination of tadalafil and ambrisentan is superior to that of sildenafil and bosentan – that the benefits of combination therapy are specific to molecules studied rather than a class effect. The dialogue amongst PAH clinicians regarding these studies remains a lively one!

Have we learned enough from these studies to change our treatment paradigm? Certainly we are a step closer to the use of combination therapy in patients who have more than mild symptomatic limitations. The historical practice of sequential drug therapy was originally adopted partly due to the limited pharmacologic options physicians had to treat PAH and due to the expense associated with the individual therapeutic agents. Recall that just 20 years ago we did not have any PAH specific therapies and at the end of 2014, we have 12 PAH specific drugs which can be delivered by intravenous, subcutaneous, inhaled and oral routes, along with several different mechanisms of action.

It is certainly time for the PAH community to discuss these study results and to revisit our PAH treatment algorithms in light of these trials. We should also consider lessons learned from other disease states such as human immunodeficiency virus, which was once treated with a single agent with suboptimal results but can now be well controlled with multi-drug combination therapy with more efficacious agents.

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#### References:

1. Galiè N. The AMBITION study: design and results. Presented at: 2014 European Respiratory Society Annual Meeting. *Eur Respir J* 2014; 44: Suppl. 58, abstract 2916.

2. McLaughlin V; Channick R ; Ghofrani H, et al. Effect of Bosentan and Sildenafil Combination Therapy on Morbidity and Mortality in Pulmonary Arterial Hypertension (PAH): Results From the COMPASS-2 Study. Chest 2014;146(MeetingAbstracts):860A.

## **Team PHeNomenal Hope and the Race of Our Lives: Racing Across America for Pulmonary Hypertension**

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*I wake up. No idea what town or state I'm in. The RV bed is not moving, which means I have somewhere between 30 minutes and maybe 2 hours before I ride. That's my only job, to get ready and ride my bike. I open my eyes and jump out of bed. Uniform on, helmet, shoes, race radio, sunglasses, and meet the crew outside. We're at the racer-crew transition point, waiting for our teammates to get in and our 6-hour shift to begin.*

**Beginnings.** The journey began over two years ago, when my friends and I tossed around the idea to race in the Race Across America (RAAM), the most challenging bike race in the world. The idea of Team PHeNomenal Hope was inspired, in part, by the 2010 Mount Kilimanjaro climb, and feeling the impact of what happens when people devote their passions and do something epic to lift up the pulmonary hypertension (PH) community. Team PHeNomenal Hope was formed to serve as a lightning rod for the PH community, using endurance sports to raise both awareness about pulmonary hypertension and funds to help find a cure. Partnering with the Pulmonary Hypertension Association (PHA) and University of Pittsburgh Medical Center, our effort expanded beyond a small group of bike racers into a grassroots movement across the country.

**It's not just about the bike. It's not even about the race. It's much bigger than that.** From the start, our team was grounded in the cause and those for whom we raced. Attending the 2012 PHA International Conference with teammates and participating in support groups from Pittsburgh to California and even Hawaii, Ryanne Palermo, Stacie Truskowski, Anne-Marie Alderson and I were embraced by the PH community. As we were preparing for the race of our lives, people living with PH were in their own race, as well. PHA launched a campaign called Race of Our Lives, in which patients joined with us in Unity Miles events, setting their own goals and creating their own events to raise awareness about PH. All along the way patients inspired us to wake up and ride at 5 AM, or commute by bike to work in the cold weather; to do whatever it took to fulfill our promise.

**"Congratulations, you have just registered for the Race Across America, the most challenging bike race in the world."** Training culminated in a final 6-month build to race day. From December through June we added more extensive weekend rides and did interval training and cross-training during the week. Our crew chief Kate Bennett, and crew member Peter Kochupura, planned the details – from crew recruitment and vehicle logistics to training the crew for the race ahead. While it is the racers who would be in the spotlight, the truth was that the crew would be the ones that got our team across the country by driving and navigating, providing nutrition, fixing flats and other mechanical duties, and - most importantly - improvising. Think NASCAR and MacGuyver, but moving at 18 miles per hour day-and-night across the entire United States in about one week.

**From the United States... riding for the Pulmonary Hypertension Association, Team PHenomenal Hope!** The race began beachside in Oceanside, California. With all the prep work done, our strategy set and pre-race TV interviews behind us, it was time to race. All our preparation came down to the race that was about to begin. I remember feeling the enthusiasm of members of the PH community, hearing cowbells at the starting line, wondering how we would fare in the 100+ degree desert heat, or in the windy plains of Kansas, knowing that in RAAM, anything that can happen will happen.

**Seven days seven hours and fifteen minutes.** Our team and especially the crew worked the hardest I've ever seen people work, day and night. Together. Racing RAAM is one thing, but the sleep deprivation, the 24/7 race and constant *movement* of it, living in the narrow confines of a moving RV, the fact that there are lives on the road in the headlights of the support vehicles with a radio connection between the car and cyclist – well, high-pressure is an understatement. Yet our team thrived in this environment, truly working together despite the toll of cumulative sleep deprivation. In just over one week we: climbed Mt. Palomar; descended the Glass Elevator 3000 feet into the dry sauna-like heat of Borrego Springs; powered up the Yarnell Grade in Arizona; learned that sunrise starts with hint of a blue glow on the Eastern horizon around 4:30AM; experienced sun illuminating pink rocks in the Utah desert; flew on a tailwind through Monument Valley, 35 mph on the flat; climbed the Rockies into Durango and continued up Wolf Creek Pass, with a late night descent through crosswinds and tunnels; kept the bike rubber-side-down through treacherous crosswinds of La Veta Pass; survived 100-degree humid heat in Kansas, overcoming RV mechanical failures including loss of air conditioning; were surprised by a spontaneous patient pep rally in Bloomington, Indiana; rode through a treacherous thunderstorm in West Virginia; climbed the steep Appalachians; rode through solemn and beautiful Gettysburg and ultimately to the finish line at the dock in Annapolis. When we crossed the finish at 10:30PM, we were surrounded by family, friends and PHriends near and far through a live Skype broadcast between the dock and PHA Conference members crowded into a hotel bar in Indianapolis.

**Keep moving. Keep going. Don't stop.** The most important strategy in ultra-endurance racing, especially team racing, is to keep moving, keep going, and whatever you do, don't stop. There is a race in front of you, literally 3000 miles to go from the starting line, and ultra-racing makes you disconnect a bit and plug into the race, into the moment. Not only did we feel the satisfaction of completing the Race Across America, but truly knew that this was the effort of a team much bigger than our small team from Pittsburgh. It was that driving force, that excitement of racing with the vibrant PH community that I will never forget. It is that same positive vibe that we look to build upon as Team PHenomenal Hope grows in 2015. This next year will bring new endurance athletes to the team. These people will push their limits in races all over the map, while dedicating their training and racing to people who work to breathe and live with PH. We hope that this team will continue to energize the endurance community and PH community to race with us in this race towards a cure for PH. We hope you will join us.

Join us in this race against PH! To learn more about Team PHenomenal Hope, please check out our website: <http://teamphenomenalhope.org>.

To see the Race Across America Team PHenomenal Hope documentary on YouTube, go here:  
<http://youtu.be/h7OtXPP5U9A>

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## The Surgeon as Artist: A Gift of the Heart

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The recent Congress of the American College of Surgery held in San Francisco had a number of topics in the humanities offered among the many surgical science academic talks presented. To my surprise "The Surgeon as Artist" presentation was filled to capacity in a large room of the convention center. A panel of physicians and surgeons shared personal experiences and perspectives and displayed and commented on works of art created by surgeons. The depth, complexity, beauty, and brilliance of the collective works were impressive.

Images of paintings appeared on the screen that were moving and reflected an uncanny creativity. A common theme emerged as each panelist spoke and provided the background of each featured work. Art for the surgeons was an escape. The panelists offered that the surgeons' works of music, paintings, poetry, and sculpture were a means to remove oneself from the operating room theater and invest energy in another pursuit. Through art, surgeons could "escape the tyranny of the daily that trumps the pursuits of the remarkable".

Indeed, the art was remarkable. Then it appeared. A book cover of "Gifts of the Heart" flashed on the floor-to-ceiling screen. As a member of the audience, I immediately recognized the book's cover. The panelist described the book as a work of fiction written by a surgeon specializing in heart and lung transplantation. The book was my novel!

*Gifts of the Heart* was written after my return from an Afghanistan deployment in Helmand Province with the Marines. The story captures the transformation of a civilian transplant surgeon on the battlefield who quickly becomes a seasoned combat surgeon in the Afghan desert. The main character faces the austere challenges of the desert and heat and also negotiates the emotional challenges of loss, sacrifice, death, and redemption that are commensurate with both transplantation and war.

The Gift of Life chapter highlights the experience of the transplant surgeon and team. Their work always places them on both sides of the continuum of life. At the donor's bedside, tragedy takes away life and the circumstances create an opportunity for a gift of life to be given to someone else in need. Decisions for the families are often hard, and the finality signals that hope for recovery had vanished. Sadness, grief, and loss are omnipresent. When consent for donation is given, it is an incredible gift and it means that loved ones were letting go - and hoping their gift of life will live on in another person.

At the heart transplant recipient's bedside, joy, anxiety, anticipation, and emotions are high. Patients with a failing heart, are often very sick, living an uncomfortable life and facing death in a matter of months, weeks, or even days. The gift of a new heart, they hope, would bring new life. Transplant

patients can often feel themselves at the fringe of life, familiar with their mortality, and seldom waste a moment brooding over petty things.

It was surreal to have the book displayed, and I had no prior knowledge that *Gifts of the Heart* would be highlighted at the American College of Surgery's presentation of The Surgeon as Artist. It was a proud moment. Similar to performing complex surgery, writing a book, and particularly a creative novel, is an experience that engenders great humility.

Reflection on my experience as an artist confirmed that art is not simply an escape from the work, but necessary to provide energy and inspiration to do the *work* even better. This observation was highlighted by the response and positive affect on patients during a recent Healing Arts exhibit for wounded warriors at our military hospital. I suspect it is also the reason why art is ubiquitous on hospital walls, sculpture is displayed, and music often fills the air. Art indeed is a gift for the heart. As my daughter, the artist admonishes, without 'art' the heart is just "eh".

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References: Tetteh HA. *Gifts of the heart*, 1<sup>st</sup> ed. Bethesda, MD: TCG Publishing; 2013. Pg. 46.

## France, Revolutions, Constitutions and Liberty

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In the November issue of the Links Newsletter, – [Dedication, Deification and Divination of Voltaire: An Apotheosis](#), we were challenged on how to summarize a six month long immersion on Voltaire. We brushed by two seminal contemporaneous and interrelated events in history, the American and French Revolutions, both occurring as Voltaire was nearing the end of his life. The results of these Revolutions were as divergent and separate as the continents and the pond that separates these nations, but seemingly similar, with a common origin traced to France and Voltaire. The influence of Voltaire was profound. He triumphantly transformed intellectual thought and European civilization; changes from the Enlightenment that still reverberate across the globe today. But some of his enemies viewed him as the very cause of the French Revolution. We know the by-product of the American Revolution was a Constitution that has assured up liberty for more than 200 years. This issue of the Links will examine the legacy of the French Revolution, important French individuals who influenced history and how this legacy differs from the consequences of the American Revolution which serves to remind us that history can be made by great individuals and great events in our quest for freedom and liberty.

18<sup>th</sup> Century events in France through the Enlightenment period illustrated the concept that ideas change history, especially an idea as influential as freedom. Arguably, freedom is the definitive idea of a civilized world. Let's define our terms: **Liberty** is freedom under the law – the freedom of civilized people to govern themselves under given laws. **Freedom** maintains that responsibility and is a necessary component of liberty establishing that for every right there is a corresponding duty. Of course there is political freedom – the liberty of the individual to live as he or she chooses as long as that individual does not infringe upon the rights of others. So why was the end product of the French Revolution so different? Maybe some of the answers lie in the thoughts of other notables from France, especially Charles Louis de Secondat, Baron de Montesquieu (1689-1755) and Jean-Jacques Rousseau (1712-1778).

Montesquieu was born in the castle of La Brède near Bordeaux on January 18, 1689. He was the first great French Scholar associated with the Enlightenment. He was a man of wealth and position vastly different from that of Rousseau. He was elected a Fellow of the Royal Society and became a Freemason. As his interest waned while practicing law, Montesquieu's passion burned in the spirit that lay behind the law resulting in his greatest work, now considered a great work in political theory and in the history of jurisprudence, *De l'esprit des loix*. Along with his earlier works the *Lettres persanes*; *Persian Letters* (1721) and *Considérations sur les causes de la grandeur des Romains et de leur decadence* (1734; *Reflections on the Causes of the Grandeur and Declension of the Romans*, 1734), Montesquieu reconciled the order of nature and the variety of human forms of association with science as the unifying truth amid the relativity of perspective. The laws of natural philosophy have no cultural or geographic boundaries from ancient history to today. He believed that political

society progressed through a cycle of constitutions that was unstable and predictable. This cycle was one of the unchanging laws of history, such that civilizations move from self-governance and virtue to prosperity. This leads to selfishness and greed then, in the case of Rome, the virtue of the Republic proved too successful, leading to militarism, monarchy and despotism. This theory significantly influenced the Founding Fathers of America. Montesquieu's arguments were based on empirical evidence from history and suggested that the best form of government is one with a balanced constitution. He declared that England was the only country in the world to have political liberty as the direct goal of its constitution. From his publication, *The Spirit of Laws*, he had abandoned the classical divisions of monarchy, aristocracy and democracy and assigned an animating principle with each form of government:

1 – The Republic, based on virtue

2 – The Monarchy, based on honor

3 – Despotism, based on fear

These assignments involved a historical and broad descriptive approach which was not based on the location of political power but on the manner of conducting policy. Most importantly, his authoritative and admired ideas about the separation of legislative, executive and judicial authority or powers, each acting as a check and balance on the other, had a profound impact on the framers of the American Constitution. These architects knew that absent public virtue, nothing on paper would be stable and these American Founders understood the necessity of mutual restraints on centers of power.

The American Revolution reflected the ideas of Montesquieu; however, the French Revolution embodied the ideas of Rousseau. Unlike Montesquieu, Rousseau had humble beginnings. He was born in Geneva, Switzerland on June 28, 1712. He had an unhappy life full of paranoia and a sense that people were out to get him as well as feeling as if he were an outsider. He was a self-educated refugee in France and exploded onto the European intellectual scene with his *Discourse on the Arts and Sciences* (1749). He argued both from history and reason that progress in the arts and sciences was always accompanied by moral degeneration. Once societies of Egypt, Athens and Rome reached a certain level of cultural sophistication, decadence set in. Whereas Montesquieu was more a man of reason, Rousseau placed more importance on intuition and feeling, at times to the point of irrational intuition. Most importantly, he believed that the innate goodness man comes from a primitive society – **the noble savage**. However, a properly constructed society could change human nature to enable people to be better and live well without any need of constitutional reform. The American Founders believed human nature never changed and believed similar events can be reproduced by similar circumstances. Rousseau believed you can reconstruct individuals. In further contrast to Montesquieu, Rousseau believed all political power can be found in a single element, a **general will**. Each individual surrendered political liberties and his conscience or general liberty. This general will required that individual will be subsumed in a general will to the extent that its whole was greater than the sum of its parts resulting in a **"national will."** And, interestingly and disturbingly, this general or national will can be expressed by a single leader. France differed from America inasmuch

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that France had a nobility that played a far greater role in politics in the 1700's, while America was just getting started. The freedom of the individual will was lost into this general or national will in France, where Kings and representative bodies were the expression of the general will of the people, which was considered absolute and never to be broken. Rousseau's true legacy was not American Democracy; his ideas spawned the ideologies of totalitarian regimes as later confirmed by the Russian Revolution.

The French Revolution did begin on the path and ideals of the American Revolution, but it degenerated into anarchy and ultimately tyranny, with chaos and uprisings rooted in Rousseau's ideas, allowing him the distinction of **Father of the French Revolution**. Attempts at a new constitution in France resulted in a series of self-serving revolutionaries who rose up to enhance their own power and instituted a systematic attempt of terror. In one example, nearly 2,000 French lives were put on barges in the town of Nantes and were conscientiously drowned. Terror became the instrument of governing. Maximilien de Robespierre, one of the best known and most influential figures of the French revolution, fell from power and was put to death by the guillotine, or the "National Razor," another symbol of the revolutionary cause. France was unable to come up with a systematic constitution. America created a constitution in one summer that promoted justice and liberty for over two centuries. Finally, the national assembly of the French Revolution, who did anything to preserve its own power in France, found its fulfillment not in a constitution for ordered liberty, but in a dictator predicted centuries ago and again by Montesquieu. Napoleon Bonaparte was a short, decisive, handsome military genius whose ideas reshaped Europe. He was an outstanding battlefield commander who could rally his troops with a great speech. George Washington might have been America's Napoleon, but he refused the role of dictator. Although Napoleon was such a great genius and strategist, he ultimately lost, because his strategic goal was to be in power, forever. Washington's strategic goal was to win the independence of America, and he achieved it. Instead of benefiting Europe, the French Revolution brought war and misery. The final outcome of the French Revolution and Napoleon's rule was the idea that only within the state does the individual find true freedom with the power of the state over the individual.

Over time in France, there was a restoration of monarchy with revolutions in 1830 and 1848, followed by a popular dictator, Napoleon III, the embodiment of "Rousseau's General Will," from 1852-1870. Following the revolutions of the 19<sup>th</sup> Century, a terror far greater than the Reign of Terror in France, or anything the French could have ever imagined, emerged in the form of a Russian Revolution carried out by Stalin. Through the 20<sup>th</sup> Century and traced back to the French Revolution, France dealt with problems in 1914 and a shameful surrender in 1940. Nearly all violent revolutions of the 19<sup>th</sup> and 20<sup>th</sup> centuries ended in despotism. Perhaps the ultimate reason for the success of the American Revolution might be found in the moral character and integrity of its leaders, traced back to the philosophers of the Enlightenment period. Compare George Washington with Napoleon Bonaparte, James Madison with Joseph Stalin, author of the Soviet Constitution, and Thomas Jefferson with the brilliant Vladimir Lenin.

Fortunately, within the ISHLT we have our own checks and balances of our three basic elements mixed in proper proportion with a strong executive leader, represented by our President. We also have an aristocracy, represented by our Board of Directors, who are elected democratically into a

system that embodies our broad base of popular support through each of our Councils, again elected democratically by our members. Each annual meeting is orchestrated by an elected Program Chair. Is Nice the center point or near the crossroads of original thought, Philosophy and Political Theory in early Western Civilization? (see map)

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