ASTS Presidential Address
Michael M. Abecassis, MD, MBA
"The Luster Cycle of Transplantation Surgery"

Dear Friends, Colleagues, and others. And by others, I mean of course my family, but also those present, who will not publically or readily admit to being either my friends or my colleagues:

The ASTS is a great organization, and it has truly been my privilege to serve as its President this past year. Together, we have accomplished a great deal, as we focused our work on our stated mission areas. We carefully crafted a new vision statement for the ASTS this past year. In executing this vision, and together with our partner stakeholders, we have advocated strongly for our members and for our patients. I would like to specifically highlight the fact that the ASTS and the AST worked together tirelessly this past year, like never before, so that our collective voices could be heard, louder than ever, in these advocacy efforts… There is strength in unity… I would like to applaud Dr. Maryl Johnson, and her executive committee, for their leadership in this productive partnership. I know that Dr. Johnson will review these efforts with you during her address, and therefore, I will not spend any more time on their details.

So rather than looking back of our many accomplishments, I would like to share with you some of my thoughts on the future of transplantation in general, and transplantation surgery in particular. I hope to make a compelling case for the need to constantly re-invent ourselves and our field, in order that we remain strong, so that we continue to attract the best and brightest to our ranks. In order to argue this case, I will not torture you with data and trends on the number and details of applications to the ASTS fellowship match, or on the number of transplant surgeons currently engaged in funded research, or on the number of high impact factor articles authored by transplant surgeons in recent years. Why confuse the issues with facts? Instead, in true scientific form, I will base my comments on a single personal anecdote, as I believe that this "n of one" should cause us to reflect on the future of this magnificent discipline, to which we all, in one manner or another, have dedicated and continue to dedicate our professional live.

Five years ago, at around this time of year, I received a call from a young man, who had matched at Northwestern for one of our transplant surgery fellowship slots. He had come to us with outstanding recommendations from several of our colleagues. This was someone who had decided as a medical student that he wanted to be a transplant surgeon, mostly as a result of admiration for a couple of surgeons at his medical school, having adopted them as role models. He had then gone on to a surgical residency at another institution, where he immediately gravitated towards transplantation. In short, I am probably describing anyone of us, and the path that led us to a career in transplantation. So we fully expected this young man to start his fellowship in July, but here he was, calling me in May…

He spoke in a soft voice, yet I could easily hear his disappointment and chagrin as he apologetically informed me that he would not be doing his fellowship with us. In fact, he was not going to pursue a career in transplantation at all. Naturally, I immediately asked for an explanation. Were there personal reasons for this? What could possibly cause this young man to have such a sudden change of heart? He

began to speak in response, but then he paused, for what seemed like a long time. And then, in a muffled voice, he said "transplantation has lost its luster". Imagine that! "Transplantation has lost its luster". Incomprehensible! I have thought often about these words, and I have to admit, I have been perturbed by them since that day, mainly because I comprehend them. But as I prepared for this address, and as I reflected on my own career, I began to slowly understand the meaning, and more importantly, the implications of this young man's words. So for the next few minutes, I would like to share some of these thoughts with you.

So what did he mean by "luster"? The *Encarta Dictionary* defines luster, the noun, as: [soft-sheen] a soft sheen of reflected light, especially from metal that has been polished gently; [shininess] a bright and shiny condition or tone; [splendor] the glory and magnificence of a great achievement; [polish] something used to give something a shiny finish; [chandelier] made of cut class, designed to reflect the light; [glaze on pottery] an opalescent metallic glaze on pottery, especially porcelain; and finally, as [light reflected by a mineral] one of the ways in which a mineral is defined, the highest degree of luster being resplendent; And synonyms for resplendent, according to the Thesaurus, include: splendid, dazzling, magnificent, glorious, brilliant, stunning, glittering and impressive.

In trying to understand this young man's words, and keeping this literal definition of the term "luster" in mind, the **first question** that came to mind was**: would I have used the word "luster" to describe transplantation when I entered the field?** And I think we would all agree that the answer would be a resounding "YES". An obvious follow up question then is why? And although the answer to this question is more complex, I believe that at the heart of it, is the fact that from its very infancy, transplantation surgery has been, by any and by all metrics, one of the most challenging yet fulfilling surgical specialties imaginable. By presenting daunting clinical, technical and immunologic challenges, the mere accomplishment of converting investigational procedures into standard of care therapies is nothing short of resplendent. And what about the men and women, surgeons all, larger than life, who pioneered these procedures? Again, nothing short of resplendent. And that, ladies and gentlemen, is "luster", pure and simple. A discipline that allows one to dream, and then to fulfill that dream almost in its entirety, all within one's own career and lifetime! Splendid, dazzling, magnificent, glorious, brilliant, stunning, glittering and impressive.

As a result of fulfilling these aspirational goals, we have entered a "Golden Age" of transplantation. Now to be sure, we're not entirely there quite yet. But I would submit to you that we are living the dream. Transplants are now routine operations with excellent short and long term outcomes. Can we improve on these? You bet. But it's hard to argue with >90% success rates. And what about the "Holy Grail" of transplantation, Immune tolerance? Are we there yet? Well maybe not quite, but we're pretty close! Several presentations at this very meeting will attest to these claims. As many before me have stated, we stand on the shoulders of giants. And as a result, we can see the horizon clearly. And it is a magnificent view indeed!

So the **next question** is - **Would I use "luster" to describe transplantation today?** I believe the answer to this question is more complex. I would submit to you that for those of us of who have lived, and continue to live the dream, the answer again is unequivocally "YES". But the real question is how might

a surgical resident, contemplating a career and a future in transplantation today, answer this question? Obviously, the index resident that I alluded to at the beginning of the address, answered this question with a resounding "NO". Also, let me gently point out to you that surgical residents nationwide are not exactly elbowing and tackling each other as they attempt to secure a rotation on the transplant service. Also, I can't remember the last time a transplant, of any type, attracted a sell-out audience of surgical residents and medical students. Alas, can you all recall the good old days when these procedures would be attract lots of enthusiastic and impressionable students and residents? Most of us were those students and residents. Do you remember when even the nephrologists and hepatologists and the cardiologists would come to the operating room, just to feel like they were part of the miracle!

So the **next question** is: **has transplantation really lost its luster**, at least for those impressionable young men and women that used to be so awed by what transplant surgeons did? In order to address this, I think we need to answer **one final question**: is there an operational definition for the term "luster"?

I will spend the next few minutes trying to convince you that the subject of my single case study, that surgical resident responsible for this monologue, was in fact, at least in part, correct. But I will also propose that we, the transplant community are well on our way to re-establishing the status of transplantation as a resplendent discipline, even in the eyes of seemingly disenchanted future generations of transplant surgeons and scientists. In order to do this, I will use as a visual and conceptual aid, an old matrix, well known to the business community and first described by the Boston Consulting Group in 1977. This is a 2x2 matrix known as the "Growth-Share" matrix. So the idea is that all new products begin the cycle as "**question marks**", defined as highly innovative, but with low market share due to the fact that they have not yet penetrated the market. As the product gains acceptability and as the consumer realizes its value, market share grows, as do revenues and it becomes a "**star**". Now for a product to remain a star, it is essential to continue to re-invest some of the revenues into research and development, so that continuous improvements lead to sustained market share and revenues. In contrast, once re-investment slows, the product becomes a "**cash cows**", defined by a focus on sales and marketing as these replace R&D. Unfortunately, the natural history of cash cows is that they become "**dogs**". So once the cow has been milked without re-investment, the product loses differentiation and becomes a mere commodity, price-sensitive and vulnerable to imitations, margins erode as does market share, ending the cycle. In this construct, "luster" exists in the question mark and star phases of the cycle, and dulls as the product becomes a cash cow and ultimately a dog.

So now you're asking yourselves: how is this relevant to transplantation? So let me take you through this same cycle, which I have now renamed the "**Luster Cycle of a Surgical Discipline**". A surgical discipline can be defined by the clinical, surgical and scientific needs of a specific patient population. So in relevance to transplantation, the pioneers who preceded us were able to transform a highly investigational set of procedures into a therapeutic reality, such that over the past 2-3 decades, **question marks** became **stars**, as successful clinical application of these procedures by a select few, in an even more select number of forward-looking institutions made transplantation the accepted approach to end-stage organ failure. More recently however, these stars became **cash cows**, and the focus shifted from innovation to margins and market share. And how many of you can tell me honestly

that discussions with administrators at your institution about margins and market share don't trump concerns about research and innovation? And when was the last time you hired a transplant surgeon so that he or she could focus on innovative research without worrying about how many RVUs they need to generate to make their salary? And where is the luster in margins and RVUs?

Now before you start lining up for the cool aid, let me tell you that I FIRMLY believe that the future of transplantation has never been brighter. I told you at the beginning of the address, that I hoped to make a compelling case for the need to constantly re-invent ourselves and our field, in order that we remain strong. And so I propose that in order to bypass the "dog" phase of the cycle, it is essential that we re-invent the BHAG so that we create a whole new set of "**question marks**", and by doing so, we renew the cycle of luster and re-establish and regain our "star" status.

So what is a BHAG? By now, I'm sure that most of you are familiar with this term. Jim Collins coined this term in his book "Built-to-last", over a decade ago. Parenthetically, most of you probably know Jim Collins better for his sequel to "Built-to-last", the best seller "Good to great". BHAG stands for Big Hairy Audacious Goal. And this is what Jim Collins said about BHAGs: "a true BHAG is clear and compelling, serves as a unifying focal point of effort, and acts as a clear catalyst for team spirit. It has a clear finish line, so the organization can know when it has achieved the goal… People like to shoot for finish lines." And I think that you will agree that for most of us, it was the BHAG that attracted us to transplantation: the idea, the dream, of transplanting organs into patients, and that somehow we would overcome the technical and immunological barriers that this challenge presented and that someday, within the span of our own careers, we might be able to do this with minimal or even without immunosuppression. Well, we are almost at the finish line. We have almost achieved the BHAG. And so the luster, just like the natural history of any luster has started to dull. So how do we re-establish the luster back to its highest level, to resplendence?

The answer, in my opinion is quite simple: we must develop a new Transplant BHAG – one that addresses our current hurdles and challenges, and aims to overcome them. And to be sure, there are plenty of challenges that limit our ability to move the field forward that could benefit from a well thought out BHAG. But let me just focus on just a couple. First, I would argue that for the most part, we still approach our patients with the mindset that "one size fits all". But we know that this is not the case, so it's time to change that mindset. And several presentations at this meeting demonstrate that current scientific knowledge and technology are sufficient to customize and personalize our approach to our patients. So why not consider a new Transplant BHAG that aims to develop predictive biomarkers that leverage recent advances related to the Human Genome Project and that allows for personalized treatment decisions, coupled with state-of-the-art decision analytics.

And within that construct…Why not address a second major challenge, the organ shortage. Let us together define a New Holy Grail of transplantation: "just-in-time" organs that consist of either a biologic, or a biologically active degradable scaffold, populated by the recipient's own cells, and customized in a bio-reactor.

And if you have any doubts that these are achievable, then you haven't been reading your journals and you certainly haven't been paying attention to many of the presentations made during this meeting, including the one that immediately preceded this very address. So are these goals aspirational? You bet. Are they achievable in our lifetime? Maybe. Are they achievable in our trainees' lifetime? You bet. So let's redefine the BHAG, and let us all search for the "New Holy Grail". And if anyone questions our sanity, then we know for sure that we are on the right track. And let's let every surgical resident out there know that the answer to this question is a resounding NO! The luster is definitely there, not because it's back, but because it was never lost.

As I conclude my term as President of this great organization, I would like to acknowledge a few special people who have helped me become who I am, for good or for bad, and who continue to inspire me every day:

Bernie Langer who taught me how to operate, particularly on the right upper quadrant…

Rudy Falk who encouraged me to become a surgeon-scientist, and who taught me that no idea was too big or too crazy.

Gary Levy who taught me how to think, how to do research, and how to present and publish data, and who taught me that a mentor can also be a great friend.

Rob Corry who taught me that there was more to transplant than just the liver.

David Steinmuller who taught me to always question the obvious, and the art of writing a grant proposal.

And Frank Stuart who taught me how to be a mentor to others.

My Parents, Isaac and Liliane for whom no sacrifice was ever too big, and no achievement too small.

My Wife Debbie who has continued to love me for who I am all these years, and who has allowed me to do what I do without having to worry about everything else.

My kids Josh, Zach, Victor, Max and Sissa who complete me. Thank you for interrupting your lives to join me today. And Josh, happy 24th birthday today.

My Northwestern family: what a ride! I am so proud of our program and of everything we have accomplished together.

My ASTS family: thank you for your support and your help in all our achievements this past year.

My AST friends: what a great year! Let's keep the collaborations going.

Our Patients: who trust us with their lives. They are the reason we're all here today.

Thank you!