

To Dream the Impossible Dream (Full Version)
By Ken K. H. Leung

I told Ken Krieger after one of our planning meetings at Google that I am going to give a very broad, very deep, Dean Kamen style, 30 minutes speech at Cal Games, and Ken said to me, "Oh. You know, there is something to be said about being concise. You can say a lot in five minutes." And I said, "Yeah, Yeah, Yeah. On the other hand, I can be just like Dean Kamen." And Ken said, "fair enough." Oh, don't worry folks, I am not going to drag you through one of those. My speech is now only twenty two minutes. Much shorter.

But seriously folks, it's very easy to spend 5 minutes in a match, a day at Cal Games, 6 weeks building a robot. Its very easy to lose yourself in the excitements and then sooner or later it's 1 years... 3 years... 6 years... We don't spend enough time taking a moment to think about the bigger picture, about why we are doing all these.

But being back here today reminds me how important it is we are doing what we are doing. So I am going to talk to the students a little bit because #1, I am still a student myself, #2, it seems like people are always talking about us, but never with us, and #3, I would've like hearing what I am about to say:

It is not easy growing up in this world, in fact, it is very difficult.

I talked to lots of college students about school last year, and they told me they don't really know why they are there. They told me they are not interested in their classes and worst yet, they are pretty sure when they are done they won't use any of them anyway, so what's the point?

I looked at the world around me, it's full of sports and entertainment. I mean, I like a ball game once in a while, and I can't live without movies. But when that's all you see around you, that become the world you grow up in. It's also full of politics and wars, people constantly fighting each other, countries behaving like they are the only one that matters... As if we are at the pinnacle of our society and everyone is fighting for that one square inch of real-estate at the peak. We don't fight for truly important things; only over trivial things where no one can possibly win.

There are no dreams anymore, nothing to aspire to, and we are losing the abilities to achieve them even if we have any. It's time like this I wish JFK and Dr. King are here to tell us "We choose to go to the moon!" or "I have a dream!" because frankly, our leaders are doing a terrible job being role models for us. Even though we have all their (JFK and Dr. King) books and speeches, they don't matter if we don't know how to use them or why we need them. And while I think the world of Dean and Woodie, they are great leaders of the FIRST community, there are many schools without FIRST teams, and many students who aren't going into science and engineering who need just as much inspiration and motivation as we do.

So what do we do when schools don't teach us why we need to learn? What do we do when the culture fail to inspire and recognize the truly important things? What do we do to find our dreams and break through this barrier created by the world around us?

Well, we have to learn to do it. We have to learn to solve bigger problems one-step at a time. The good thing is, we've been doing it all our lives. When we were small, we learned to walk, to talk, to live in a world completely alien to us. Then we learned to write, to read, to speak, to listen, to count, and using those are foundations, we learn even more complicated subjects like History, Calculus, Chemistry, Physics, Literature, Graphic design, Photography, Music theory, until we are so used to learning that we aren't even aware we are doing it anymore.

Then FIRST came along and it's not like school anymore. Suddenly we are learning how to lift a robot off the ground, how to balance two goals on a bridge, how to stack tetras on a row, how to shoot balls into a goal. We are learning about offense, defense, penalties, bonuses; we are learning to improvise, organize, specialize; and we are learning to prioritize, strategize, and optimize; we learn to do it in six weeks, three months, one year, then you write everything down on a piece of paper, shove it in a drawer and then you ask what's next!

We are learning to solve bigger problems one step at a time, and FIRST teaches us about solving problems and why that's important. It teaches us about working together, and a little about our dreams.

But that's not enough because sooner and later we have to take off these training wheels call FIRST and go off to colleges. For many of you it will be the first time in charge of your own schedule, your studies, your classes. It will be the first time writing a check, worrying about tuition, making a living. And will be the first time seeing the thousands of classes without the slightest clue what they are or why you should care.

It will be completely overwhelming and you won't even know it. You might try to fake it, even managed to get some good grades, but all these time you struggle with three big questions every college student ask themselves:

Who am I? What do I want? How do I fit into this world?

It is very difficult to answer these questions, when everything you took for granted is no longer there. For the first time, you will be feeling the weight of your entire life on your shoulders, the weight of the entire world on your shoulders. It is even more difficult to answer these questions in a relative world where everyone is right and no one is right; in a world that seems to be connected, when in fact we are very much disconnected from one and other; and in a world where trivial things are treated as the most important things.

What you don't realize is that this isn't the first time people have struggled about growing up. Lincoln, never received any formal education when he was young, Thomas Edison was a very poor student and his mother had to teach him herself, Galileo's father wanted him to study medicine when he didn't want to. And the one thing they have in common is that they were incredibly curious, they felt the need to learn, and they felt the need to do something for the world around them.

We have to learn to solve bigger problems one step at a time. So, you have to be incredibly curious, you have to want to learn, to need to learn. Not only that you have to read like you've never read before, you have to dig deep, think hard, and you have to ask why. Why are we learning this, why are we doing that? You have to learn from everyone around you, and challenge everything they told you. And not only that you have to challenge yourself, and what you thought you know. You got to go out to experience, and you have to find things you care about, things you are passionate about, things that makes you burn in your stomach, things that makes you scream, "I am furious about everything and I am not going to take it anymore!"

Then one day a light bulb will appear on your head, you are going to have an epiphany, and suddenly you found your dreams. That dream is going to continue to change and evolve, but nevertheless it will give you a set of beliefs, a set of tools, a set of directions to move forward with, and it will be nothing like you've ever done before.

It will be difficult to make that dream come true, very difficult, but if you gather the smartest people around you, if you share your dreams with them, and if you are true to your passion, your curiosity, your heart, sooner or later, it will come true.

Then on the day it happens, you are going to look at yourself in the mirror, and you will see a CEO, a president, a principle, a teacher, a doctor, an engineer, and you will realize this may be a relative world, but that can't stop you anymore; and this may be a disconnected world, and that can't stop you anymore; and this may be an empty world, and that can't stop you anymore.

We are learning to solve bigger problems one step at a time.

One day, I hope to finish my degree, have my own career. And one day, I hope to have a family, and kids of my own. I will teach them how to speak, to read, to watch TV. I will also get them started on Emmanuel Kant when they are 5, you know, just to give them a head start. Then they are going to join a FIRST Lego League team, a Vex team, and a FIRST team just like the rest of you, and they are going to colleges in a few years, just like the rest of you.

And that's when the trouble starts, because I will start hearing words like "Driver's license", "parties", "boy friend/girl friend", and the most dreadful of all, "tuition". But I am not going to stop trying just because it is hard. I will have to teach them how to think, how to find their dreams, and I am not going to stop trying just because it is hard.

And I am going to have to provide them with a better future, and I am not going to stop trying just because it is hard.

Because I have been thinking, I have been reading, this is who I am, this is what I want, and I am furious about everything and I am not going to take it anymore!

We are learning to solve bigger problems one step at a time.

Growing up in Hong Kong was my first step. Coming to America, learning English was another. Then I took more and more steps when I went to high school, joined the Gunn Robotics team, and more and more steps when I volunteered at competitions, met awesome mentors like Ken Krieger, Jason Morrella, Andy Baker, Joe Johnson, and Dave Lavery.

"Atlas Shrugged" by Ayn Rand, "Zen and the art of motorcycle maintenance" by Robert Pirsig, "All the president's men", "Team of Rivals", a story of Lincoln and his cabinet, "Good night and good luck", a movie about Edward R. Murrow;

Buckminster Fuller who invented the Geodesic Dome, Thomas Paine, Rene Descartes, John Stuart Mills, David Hume, Emmanuel Kant;

The West Wing, All 11 seasons of Frasier;

"A Structure of Scientific Revolution" by Thomas S. Kuhn, "Fahrenheit 451" by Ray Bradbury, "Founding Brothers" by Joseph J. Ellis, "Origin of Species" by Charles Darwin, "Surely You're Joking, Mr. Feynman" by Richard Feynman...

And the last step that brought me here today... Ceal Craig, team 1120, Eugene Brooks, team 1280, Mike Schmit and Phyllis Schmit, 1351, Lonny Weissman, Deborah Epperson, team 668, Dave Sheridan, 766, Laura Rhodes, 100, Randy Lam, Assistant Regional director, Alvin Cheng, 581, Pavan Datta, Ted Shinta, 115...

And the critical step that happened two years ago, during a winter in Wyoming, when I was sitting in the snow next to a river, with a clear blue sky and complete silence around me, thinking about the world, thinking about my writing, and suddenly this idea came to me and I found my dream...

I can't tell you what that dream is, at least, not yet, because I am not ready. But what I can tell you is that you have to find your curiosity, your passion, your energy, because it's the only way that will ever work. You have to choose to be successful, just like you are going to choose to beat the Technokats, Las Guerrillas, Team Hammond, the H.O.T. Team, the Triplets, Think Pink, Wildstang, but I have a feeling you already know how to do that.

It is incredibly difficult growing up in this world, but you are not alone. Look at the people who were with you the whole time, your parents, your friends, teachers, mentors;
Look at the people who weren't, but help shaped the world we have today, Lincoln, Jefferson, Edison, Einstein, Newton, Galileo... and the millions more you will never even know the names of.
And look at yourself, at how much you've grown, and how much more you have to go.

I know it will be hard to imagine your life in the next 5 years, the next 10 years...
I know there are times when you are frustrated and angry that the world is the mess it is and you don't know why.
I know there are times when you are full of ideas and want to speak your mind.
I know there are times when you want to call yourself an engineer when you finish building your robot.
And I know there are times when you are so terrified of speaking in front of people you look up to.

That's ok, that's all part of growing up. I want you to know it is all worth it.
To be able to read a book and truly understand where the author is coming from,
To be able to look at the world and truly appreciate how beautiful it is,
To write a speech and deliver it in front of people you really care about,
Holding your child for the first time knowing you have done everything you can to provide him or her a better future...
Trust me, it's worth it.

It is incredibly difficult growing up in this world, but you are not going to stop trying just because it is hard, right? Good, because that's not going to stop me from trying neither. Because you've got a star to catch, and so do I!

There are not enough teachers, scientists, engineers, doctors in this world,
there are not enough curiosities, characters, substances in our culture,
And we can do better, and we must do better, and we will do better,
And we are going to absorb and challenge everything we hear, we read, we see,
and we are going to be curios, passionate, interested,
Not because we are told to, not because we are taught to,
but because of who we are, and where we are going,
and we choose to aim for the stars and dream the impossible dream today!

Thank you so much for all your hard work the past 6 months. Thank you so much for coming today. Thank you, Thank you, Thank you. See you next year at Cal Games 2007! And thanks for listening, you guys are like family to me!