

A Sense of Purpose

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Thank you, President Williams, for that kind introduction. It has been proven that college graduates don't remember the subject of the commencement speech at their graduation or the identity of the speaker, so I have a realistic appreciation of my role here today. You all have places to go and things to do with your lives and careers, and I promise not to keep you too long. I know you want to get right on it. However, a commencement speaker is supposed to offer wisdom, and so I will offer you one little glimmer gleaned from my years as an engineer, and that is that it is more important to get it right than to get right on it. A corollary to this is the old engineering truism, "never time to do it right, but always time to do it over". We need to keep these thoughts in mind as we manage our complex lives and careers.

But, congratulations for doing something right, for completing all the requirements for the degrees you are about to be awarded. What you have learned here in Huntsville, both inside and outside the classroom, will serve you well over

the course of your lives and careers. You chose a worthy goal, accomplished it, and are now getting ready to take even longer strides.

As President Williams mentioned, I have collected a few of those degrees myself over the years, most of them in my spare time. The degrees themselves are unimportant. What is important is a commitment to life-long learning. Because I am lazy, I find that for me a commitment to structured coursework is the best way to learn something new. That's what works for me. I'm not here to tell you that my approach to life-long learning is the best one. But I will tell you that the goal itself is one that, in your own self-interest, you will want to embrace.

Many people have asked me how I found the time over the years to take those classes while working, raising kids, and amidst the various distractions life brings. The answer is that I don't watch any television apart from the evening news, an occasional old movie, and a few rounds per year of major-championship golf, my other life-long passion. I'll never be able to complete a *People* magazine crossword puzzle, and I don't know who hosts which TV talk show, or care. I first heard of *Saturday Night Live* through all the hoopla surrounding their twenty-fifth anniversary. But being ignorant of those things has given me more time to learn, and to apply what I've learned, to the physics, engineering, and management challenges of my profession, aerospace.

If that makes me a “nerd” or “geek” or a “workaholic”, then it does. I know the conventional wisdom about leading a balanced life, but I have not done it. The people I know who set out to accomplish something meaningful in their careers have not done so either. They too are nerds, geeks, and workaholics. Frankly, I think our society owes a great deal to such people.

I’ve got a news flash for you: there are a lot of nerds at NASA and our industrial partners. And if national surveys provide any indication, then our nation likes our nerds. In repeated national polling, NASA as an American institution enjoys a hugely positive approval rating, broadly in the range of 65-75%, which I consider to be nothing short of amazing for a government entity. Our nation’s strong support for the space program and the agency that runs it says, I think, more about our culture and our heritage as a pioneering, push-the-limits society than it does about NASA. And when you probe a bit deeper, something even more interesting emerges. When people are asked, directly, *why* they like NASA, they often are not really sure, or at least cannot express it in clear and specific terms. People love what NASA does not because of any single project or program or technology, but on a visceral level. NASA is the poster child for that quintessentially American “fire in the belly”, the belief that we as individuals, communities, and as a nation can achieve whatever we set out to do if we put our minds to it. If we can go to the moon, we can do anything. Nerds rule.

Those of us in the space business – engineers and scientists and the people who can stand to work with us – are often ashamed, or maybe just unable, to speak out clearly and eloquently about the stuff of our business, the majesty of spaceflight, the fascination of seeing a new place for the first time, the deep satisfaction of a new scientific discovery, or the pride that accompanies being the first to accomplish a great thing as a people and as a nation. We are at home with a discussion of mathematical principles and technical capabilities, but uneasy with a discussion of values. And that's a shame.

To succeed in the space business, you have to value hard, precise work. You learn to live by a code of excellence, or die from the lack of it. Enormous amounts of money or even human lives are on the line, and in the immortal words of Gene Kranz during the rescue of Apollo 13, “failure is not an option.” To succeed in the space business, or any other great enterprise, you have to understand and practice both leadership and followership. You have to be willing to defer gratification, to spend years doing what we do, and then stand back and see if it works. You have to learn to think in terms of the legacy you leave behind, because we work on things, like the colonization of Mars or the search for extraterrestrial life or the understanding of the structure of the universe, that not all of us will live to see – and we know it. And we learn about accepting the challenge of the unknown, where we might fail, not without fear or apprehension, but by mastering and

controlling that fear and pushing onward anyway. These are lessons that we all need to learn, whether you work inside the space business or not. There are few arenas other than military combat where such lessons are so starkly portrayed, and I would submit that our country is a better place for those who have learned them.

If you choose to remember one thing from what I have to say tonight, let it be this: go about your life with a sense of purpose. Have an agenda, have a goal, have a plan, and pursue it with “fire in the belly”. Whatever that purpose is, seek its fulfillment during your lifetime, or advance the agenda so as to leave it in a better place than you found it. Pursue your goals with determination and fortitude, and remember always: if you do what you love, you’ll never work a day in your life.

This is really very simple, but so easily forgotten. Too many good people simply take as their goal whatever is in their inbox for that day, whatever work others have provided for them to do, and then grumble and complain that the work is not worthy. They wander without purpose, straying from the goals of which they had dreamt before becoming distracted. And then at retirement they wonder where it all went.

So, go about your life with a sense of purpose. There will inevitably be setbacks, mistakes, rejections, and people who will tell you “no.” Most astronauts are not accepted on their first application to NASA. The phone call I received in

December 2004 from the White House personnel office to inquire as to whether I might be interested in running NASA was not the first such call I had ever received, but the third. If you maintain that fire in the belly, and do not surrender to the many distractions in life, if you wake up every day ready to pursue your goals, you will see progress.

All of us have individual goals that we pursue, and others that we share as a nation. As Congressman Bud Cramer can tell you, national goals are established in law by our representatives in Congress. I have been lucky, as NASA Administrator, to work closely with the Congress in establishing what I believe are proper and worthy goals for our nation's civil space program.

It is fully as crucial for the nation pursue its goals with a sense of purpose as it is for individuals. I was lucky enough to be asked to lead NASA at just the moment when that was recognized about our space program. I believe that we spent decades distracted and off-track in our pursuit of space exploration, but, now, I think we again have it right. Our nation's space program is on the right path, and for that we owe a debt to seven people who didn't live to see it.

Many of you remember that day, February 1, 2003, when the Space Shuttle *Columbia* disintegrated over Texas and Louisiana. Our nation mourned the loss of a Shuttle crew, but more importantly, the shock of the event prompted a debate about the proper goals of our nation's space program. Out of that debate emerged

a consensus of opinion. Spaceflight is, and for quite some time will be, expensive, difficult, and dangerous. But space exploration is a bold and far-reaching activity, characteristic of and strategically important to our nation. It should continue, but the goals of the enterprise should be commensurate with the expense, difficulty, and danger we encounter as we pursue them. And a strategic plan that ends with the ferrying of astronauts to and from the International Space Station in low-Earth orbit does not constitute such a goal; it can only be a step along the way.

The *Columbia* Accident Investigation Board admonished: “The U.S. civilian space effort has moved forward for more than 30 years without a guiding vision.” This is a damning assessment, spanning multiple Administrations, Congresses, and NASA Administrators. Our nation had lost its sense of purpose for space exploration, and NASA, as the implementer of those endeavors, wandered in the desert of benign neglect, national indecision, and lost opportunities.

Our journeys to the moon concluded 36 years ago with Apollo 17. After that, we sent Apollo spacecraft and Saturn V rockets off to museums rather than into space. It frustrates me to visit those museums, like the one here in Huntsville, and see vehicles on display with more capability than we have today. We spent 80% of the Apollo budget building systems that the world had never seen before,

20% of the budget using them, and then not only ended the program, but destroyed the very capability to continue.

Our nation lost the sense of purpose needed for space exploration in the early 1970s, and the consequences of that behavior are there for all to see. And that is why I think it is so important for everyone, whether in the space business or any other field of endeavor, to find and embrace that sense of purpose, to ignore distractions. It took the loss of *Columbia* for our nation's leaders to recognize what was lacking in our space program. The direction in which we are now again heading – upward and outward – is a fitting legacy to those who made the ultimate sacrifice. Because of their deaths, others will know the thrill of the next small steps and giant leaps for mankind, lifting up human hearts and opening minds everywhere. These are the real reasons why we explore.

So I ask each of you here to embrace this one thing: go about your life with a sense of purpose.

Thank you.