

Remarks as Prepared for Delivery  
By the Honorable Shana Dale  
NASA Deputy Administrator  
JPL's 19<sup>th</sup> Annual High-Tech Conference for Small Business  
March 5<sup>th</sup>, 2007

Thank you Glenn (Delgado Assistant Administrator for the Office of Small Business Programs) for those kind words of introduction. I'd also like to thank Eugene L Tattini, Deputy Director JPL and Tom May, JPL Business Opportunities Office and Supplier Diversity Program.

And thank all of you, the entrepreneurs and small business owners, for joining me today in this state of promise, this city of discovery, and this conference of opportunity.

We have need of all three in the exciting days ahead. The President and the Congress have given NASA the charge and great challenge of stepping beyond low earth orbit and opening a way of exploration to the moon, Mars and beyond. Step by step and launch by launch, we'll bring worlds of possibility within reach.

That's the future I hope to see. That's the future we can build together as explorers and entrepreneurs. It's the most amazing, most audacious adventure ever attempted.

Most of you are dreamers and doers. That's what brought you here. That's what small businesses are all about. That's what the world's next great era of exploration is all about.

Space is a hard place. Being successful there demands more than engineering excellence, it demands a set of values that allow the enterprise to succeed.

Individuals who succeed in space understand how to lead and how to follow – how to build partnerships and create collaborations that produce results. They also are willing to defer gratification, sometimes spending years of dedicated, determined effort, to reach results. That's true whether you are in space yourself, or creating and producing a vital component or service that will help take others there.

Being part of the space program – whether as a small businessperson or a member of NASA – is about advancing our Nation's economic and security interests. But it is also about facing fears, about pushing boundaries, about turning dreams into realities and living a life of freedom and adventure.

That's what I hope we'll do together. For small business owners are vital to NASA. You are the engine that powers the U.S. economy.

## **BUSINESS STATISTICS**

Not only are small businesses an essential component of our economy, but they are a critical part of NASA procurements with over \$3 billion in prime and subcontracts in FY2006 going to small businesses.

Small businesses such as those you own drive our economy:

- You create more than 50 percent of non-farm private gross domestic product, and
- Over the last decade, you have generated 60 to 80 percent of this Nation's net new jobs.

Small businesses drive our innovation too:

- You employ 41 percent of the high tech workers – the scientists, the engineers and the computer specialists – and
- You produce 13-14 times more patents per employee than large patenting firms.

That energy and innovation will be critical in the years ahead.

## **VISION**

Many of you have already heard it, but I'd like to spend a few minutes describing our hopes for the future of space exploration in more detail. Our vision is not of a sprint to one point and back. Rather, we see something more like a marathon, or even an ultra-marathon -- an event akin to traveling 30 or 50 or a 100 miles in a single day.

Yes, people do those events. They even survive to talk about it (although walking afterward is optional). Those ultra-distance athletes don't sprint. If they did they would never finish. Rather, they take a step at a time, making sustained and steady progress toward the far horizon.

That's our hope, that's our plan.

The President and the Congress have given NASA the goal of making sustained progress in human exploration, first to develop a human space vehicle to replace and go beyond the capabilities of the Space Shuttle, then we will travel to the Moon, then to Mars, and then beyond.

Unlike an earlier era, we're going to the Moon to stay. With help from our international partners, we'll construct an outpost on the moon. The outpost will be a toehold to further exploration, a unique scientific laboratory to address fundamental questions about the universe, and possibly even an industrial base with which to enrich the Earth.

Then we'll go to Mars. Our robotic emissaries have found that conditions for life existed on the planet in the past. Those conditions may persist today. So we'll set up laboratories to study that land. We want to learn more about Mars, searching for liquid water and attempting to determine the answers to basic questions about life there:

- If life has ever existed on Mars,
- If it exists now on Mars, or
- If Mars ever had an environment that could support life.

We also hope to discover if Mars can provide a second home for humans – an extension of our civilization – 40 million miles from Earth. We'll learn, we'll grow, and we'll gather our strength for the next step.

The potential, the opportunity, is endless.

It will not be easy, and in many ways this first step is the hardest. We have to rebuild much of the industrial and intellectual capacity that was retired after the Apollo era. There's a lot of infrastructure and equipment that we'll need, and so there will be a great deal of opportunity for small business.

We want entrepreneurs to see space as a major new profit center. This goes beyond spin-offs to the creation of whole new industries and industry sectors, technologies that are just now in their infancy or just a twinkle in an inventor's eye.

## **BUSINESS CHANGES**

Let me be clear. We simply won't be able to fulfill our new charge without your innovation, your vision and your values. What NASA is embarking upon will never be more than a dream without the key breakthroughs, technologies, and cost efficiencies that only you in the private sector can provide.

That's why NASA is setting a new course with small businesses.

Let me candidly acknowledge that NASA has not always been the best of friends to small businesses. There have been falterings and failings. We're determined to change that, and are looking at several new steps to improve our relationships with small businesses.

The first big change we've made is bringing Glenn Delgado aboard, and charging him with this new mission. Glenn brings a great deal of energy and insight to the table, as well as more than twenty years of experience in acquisitions for the Navy. Since he started last September, Glenn has spent a great deal of time talking to people like you, to better understand your questions and concerns. He's been frank about those issues with me too, and I appreciate it.

We've seen that the different procedures and different rules at NASA's ten centers could become more standardized. That will help you and help us.

So Glenn and his team are working to develop uniform policies and procedures for NASA's interaction with small businesses. In the future, I want all of us be working off the same set of requirements and the same set of expectations. So whether you are doing business with the Jet Propulsion Laboratory, the Kennedy Space Center or NASA Headquarters, you'll know what to expect and when we expect it. We want to be clear with our contracts, our clauses and our expectations.

We want to do a better job – period.

So Glenn is leading a bottom-up review of our small business programs, looking for new ways and new programs which will bring more people like you to the table. He's looking at everything. In fact, we just changed the name of his office from "The Office of Small and Disadvantaged Business Utilization," to the "Office of Small Business Programs."

Frankly, we need to change the perception of the small business office in the acquisition process too. Many have seen the small business office as a disadvantage, a hurdle to be overcome rather than a resource to be tapped. Neither should that be true in perception; nor should it be true in reality.

So we need to do a better job of both listening and talking: Listening to your ideas, and talking about ways to turn them into products. That's what we're going to do. Budgets are tight this year, but to the maximum extent possible, Glenn and his team are going to be doing more traveling. We don't want to miss opportunities to connect, whether face-to-face, by phone or over the internet. Our ears and our e-mails are open, and I hope all of you will save some time to introduce yourselves to Glenn and the other NASA small business specialists here before this conference is over.

Glenn has the charge to determine where change is needed, and work with Charles Scales and me to execute those changes. He has my confidence, and I'll continue to listen closely to his recommendations. We also have prepared a brochure with a list of tips on how to do business with NASA. They are at the back of the room, so please feel free to take one if you haven't done business with the agency before or would simply like a look. You also can find the information online at the Office of Small Business Programs website.

## **FRAMEWORK**

From what I've said I think you understand that we want to do a better job doing business with small business. But we want to do a better job communicating. And when I say we, I mean not simply NASA personnel, but all of you here in the room – entrepreneurs and space enthusiasts alike.

Independent polls and market research we've initiated at NASA have demonstrated that although the American public is enthusiastic about the agency in general, they have little specific understanding about what NASA does or why it is relevant to their lives.

More than 40 percent of those surveyed could not describe what NASA does beyond "space."

Changing that perception is essential for both of us. So we're working on ways to communicate our message with the public. We've recently done some market research, and we've identified some themes that may resonate with people when talking about the space program:

- The relevance of space to people's lives – the specific technologies, also known as spin-offs. More on that in a minute.
- The United States leadership that space exploration provides.
- The innovation and economic competitiveness that space exploration enables, and
- The opportunities for discovery that space exploration creates.

In regards to specific technologies – a few examples – and not of the Teflon or Tang variety.

A Goddard Space Flight Center researcher developed cable-compliant mechanisms for use in sounding rocket assemblies and robotics which have now been implemented into an adjustable patient harness system used to treat patients recovering from traumatic brain injury, stroke, spinal cord injury, and hip or knee replacement. The device provides patients with the opportunity to stand and walk in a safe and controlled environment without constant assistance from a therapist.

A Mars Exploration Rover prototype robot and an autonomous stair-climbing robot created at the Jet Propulsion Laboratory have been further developed into commercial tactical reconnaissance robots that are being used in Afghanistan and Iraq to help U.S. troops clear caves and bunkers, search buildings, and deal with the dangers posed by improvised explosive devices. Several systems have been damaged or completely destroyed in seeking out improvised explosive devices in Iraq, but have been credited with saving lives in doing so.

## **INSPIRATION**

We need to do a better job talking about these types of tangibles. But we also need to do a better job talking about intangibles, the excitement that all of us feel when it comes to space travel. We need to convey the emotion – the thrill of watching a spacecraft ascend,

the awe that comes from looking up to a starry sky and the sheer exuberance of being part of this great new adventure.

Somehow, we need to pass on a sense of the passion that astronaut Pete Conrad felt when he became the third person to set foot on the moon. As he touched down he exclaimed, “Whoopee! That may have been a small one for Neil but that’s a long one for me.”

We need to convey that emotion to our friends and neighbors, our leaders and our legislators.

### **CALL TO ACTION**

If we don’t, then the dream could die. I don’t think America will ever abandon human spaceflight. But we might lose the will to go beyond low earth orbit. That would be a mistake, a tragedy. It’s been over thirty years since a human being set foot on another world.

As all of you are probably aware, NASA’s budget took a hit this year. We’ll work with the funds Congress appropriated, but the current budget will likely delay development of the new vehicles we need, and will ultimately increase the cost of human exploration.

Beginnings are hard. And the upcoming years will be critical for this effort. It’s going to be tough since there are so many other national needs. So your help will be critical in avoiding further postponements; in making sure that delays do not become indefinites. Turning the dreams of astronauts and entrepreneurs into dramatic realities will require grassroots action and constant campaigning.

This year is critical. So is the next. And all of you will be critical at each step.

I’m grateful for your interest and effort in trying to bring in this new era. Many of you are doing outstanding work; you’ve become living success stories, not simply as prosperous business owners, but also as people who realized your dreams.

### **PICKENS STORY**

I recently heard about a rocket entrepreneur named Tim Pickens. Tim grew up in Huntsville Alabama, listening to the sounds of Saturn V rocket engines being test-fired at the Marshall Space Flight Center.

That was enough for a lifetime of inspiration. As Tim said, “I’ve always wanted to build rockets since then.”

So he studied chemistry and engineering at the University of Alabama. Later, he joined Burt Rutan's company, Scaled Composites, where he led the in-house propulsion team for SpaceShipOne.

SpaceShipOne won the Ansari X-Prize by becoming the first privately-built craft to achieve repeated human travel into suborbital space. Subsequently, Tim left Scaled Composites to found Orion Propulsion, an aerospace company.

Orion's motto is, "We will build rockets for food." They do. And they've had great success doing so.

But Tim Pickens also has found ways to capture the enthusiasm and sheer fun of space projects. First he built a pair of rocket powered bikes. The one he built for his daughter runs on cold carbon dioxide and goes about 30 miles an hour. The version Tim rides uses a rocket motor system similar to that used on SpaceShipOne and can push the bike up to 60 miles per hour in about 5 seconds. According to Popular Science, that's fast enough to beat a Porsche in a drag race.

But according to Tim, the rocket powered bike "doesn't let anyone else experience the thrill." So he decided to build a rocket powered truck. It goes even faster than his bike – 60 miles per hour in about 4.2 seconds. The truck's license plate says it all, "In Thrust We Trust."

When speaking of his projects, Tim told a reporter, "A hard-core enthusiast can do this stuff, if you have enough passion." That's as true for Tim Pickens as it is for all of us in this room.

## **CONCLUSION**

We've come together because we're pursuing our dreams. The same spirit motivates us, whether we're space enthusiasts or entrepreneurs or both.

The same values drive us: A sense of daring; a dedication to hard work; a determination to press through the difficulties of the present to the promise of the future.

We are standing on the edge of a new era of exploration. And I'm persuaded that each of us can play a profitable part in it. It won't be easy. But the potential is there: A day of living and working on another world; of a blue planet seen from the grey soil or red sands of a distant new outpost.

That's our hope. It could be our future. Let's make it happen together.

Thank you.