NATIONAL ACTION COUNCIL
FOR MINORITIES IN ENGINEERING (NACME) FORUM '99

Prepared Remarks of NASA Administrator
Daniel S. Goldin
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Good morning. Thank you for being here.

First, I want to salute George Campbell, Jr. for his strong leadership of NACME. And I want to thank Dundee Holt and everyone else who worked so hard to make Forum 99 happen.

I am pleased to be here at the 25th NACME Forum, because its theme, "Take Action Now," is one we at NASA live by. It's our "can-do" attitude that makes NASA so successful.

As you know, if this meeting had been just one week earlier, we'd have been faced with Hurricane Floyd. And Floyd caused a lot of misery for a lot of people.

NASA was fortunate, because the storm spared our facilities along the east coast.

However, it is appropriate that we are meeting in the wake of the hurricane, because those of us concerned about minorities in engineering have been through a hurricane of our own lately.

No one has taken a stronger stand against that storm than NACME. But believe me, it's been a rough one.

Although minorities are about 23 percent of the U.S. population, they comprise just 13 percent of science and engineering bachelor degree recipients. And those numbers are dropping.

Sadly, minority graduate enrollment in science and technology is dramatically lower too. Between 1996 and 1997, the number of first-year graduate enrollments of African Americans in science and engineering fields dropped more than 20 percent. The number of Hispanics entering graduate school in science and engineering declined 18.2 percent during the same period.

Moreover, minorities receive fewer than 3 percent of the doctorates annually in all of the natural sciences, mathematics, and engineering.

Do you realize that only 20 African American women have received doctorates in physics in the entire history of the United States?

And minorities comprise only 6 percent of the science and technology workforce, according to the 1998 Women, Minorities, and Persons with Disabilities in Science and Engineering Report.

These are not just statistics. There are real people behind the numbers. Real people with real potential, and real communities with real needs.

These numbers provide a snapshot of America's future and, more importantly, an opportunity for NASA and its partners to strengthen our commitment to increasing the representation of African Americans, Latinos, Native Americans and women in engineering, mathematics, science, and technology education.

And make no mistake, technology is the most important enabling industry in the world today.

Technology represents about 50% of U.S. economic growth-including growth of the industry itself and cost savings from use of technology.

Consider this, the World Wide Web grows by 17 pages every second. According to some sources, the world's population has generated more data in the last 30 years than it has in the last 5,000. [Fast Company, July/August 1999]

The shortage of technologically skilled workers is a fundamental threat to economic growth of the US. It hurts "high tech" companies and also hampers the growth of the entire economy by lowering the productivity increases available with latest technology products.

The under-representation of minorities in science and technology is not just a health of science issue; it's a health of the nation issue.

Since NACME is about action, let's look at what we can do to turn this situation around. One of the best ways to reverse these downward trends is through strong partnerships between the public and private sectors.

NACME is a critical partner with NASA in inspiring young minds and increasing engineering, science and technology literacy in schools, the workforce, and ultimately, throughout communities

across the United States.

The partnership began with funding from NASA's Office of Equal Opportunity in August 1998. Since then, NACME has successfully managed a consortium of 22 academic institutions of higher education and 94 scholars enrolled full-time in academic fields of interest to NASA. And I applaud you for that.

The NASA/NACME partnership is an investment in America's future. Over the next four years, NASA will have invested over $7 million in developing this nation's scientific and technical workforce for the new millennium.

I am so pleased to tell you today that, because of your hard work and dedication, NASA will increase its investment in NACME by 30 percent next year.

This will help sponsor 24 new NACME/NASA "Space Flight" Scholars. These young men and women will be affiliated with our four Space Flight Centers and will engage in research experiences that support NASA's human exploration and development of space.

NASA's strong commitment to minority students is driven by our sincere interest in using the strength of America's diversity to lead our nation into the 21st century and beyond.

Through our Minority University Research and Education Division, NASA is working with the nation's 105 historically black colleges and universities, 31 tribal colleges and universities, 192 Hispanic serving institutions, other minority universities, and other institutions of higher education to produce the next generation of engineers, astronauts, scientists, physicists, chemists, and other science and technological professionals.

We are especially committed to assisting this nation in developing the talents of minority youth. NASA's investment in minority education has increased from $22.7 million in fiscal year 1993 to $66.9 million in this fiscal year.

In addition, thousands of NASA employees have opened up their labs to conduct on-site research activities with faculty and students. They also participate in technical assistance visits to minority institutions to advise them on such issues as research and human resource development. Through these relationships, we have been successful in fostering research and education opportunities for some of the nation's brightest minority undergraduate, graduate, and post-graduate students and

professionals.

For example, Dr. Aprille Ericcson-Jackson, a graduate of MIT and Howard University, is currently an aerospace engineer at Goddard Space Flight Center. While pursuing her PhD at Howard, Dr. Ericcson-Jackson received and participated in numerous NASA fellowships and grants. The reward? NASA is fortunate enough to have her apply her talent, education, and research expertise to benefit NASA and her country.

Dr. Ericcson-Jackson is also a professor at Bowie State University and Howard University. One of her goals is to become a tenured professor at Howard and create and chair the university's first Aerospace Department.

By the way, Dr. Ericsson-Jackson has been honored as one of the top 50 minority women in science and engineering in the United States for 1997 and 1998. And she will receive a Centurion of Technical Excellence Award next month.

Another stellar example is Dr. Edward Tunstel, a doctoral graduate from University of New Mexico's Autonomous Control Engineering Center, who is currently employed at NASA's Jet Propulsion Laboratory.

While participating in the NASA-funded Autonomous Control Engineering Center, Dr. Tunstel published one CD, one book, seven peer-reviewed journal papers and 25 conference papers, and he mentored nine other graduate and undergraduate students. He is currently leading an effort in developing intelligent behaviors on the 2002 Mars Mission at JPL as well as conducting cutting edge research in rovers and the future of technology for them.

NASA knows first-hand what America's diversity can do for government, business, industry, and the nation. Because of NASA's investment in minority students at North Carolina A&T, we have produced five new Ph.D. recipients at this institution alone in the last two years.

These are just a few of the many successes we have achieved. Every one of these people were given the opportunity to pursue their dreams. But we must never forget, there are thousands of children who don't even have dreams, because they think they'll never live long enough to go after them.

We absolutely cannot turn our backs on these children. If we do, we are wasting one of America's most valuable resources.

And I'm here to tell you, when these kids get a taste of what they can do with science and technology, they shine.

Just last April, I attended the national championships of a robotics engineering competition known as FIRST (For Inspiration and Recognition of Science and Technology) in Orlando, Florida. This program pairs professional engineers, scientists and technologists together with high school students to transform kits of raw materials and basic components into complete robotic systems.

I met a young man there named Steven Lugo, from San Jose, California. A year ago, Steven was a leader of the Nortenos Gang and was well on his way to becoming a homicide statistic. As a gang leader he had been stabbed four times, carried a gun, and held a grade point average of only 0.7.

Steven was in the hospital recovering from stab wounds he received in a fight when he realized he needed to make a change. This 16-year-old needed something to turn to, and that was when he discovered NASA's Mark Leon and the newly formed NASA Ames Research Center/Broadway High School robotics team. Mark Leon volunteers his time as the coach for this team of "at-risk" youth - comprised of former gang members, teenage mothers, and kids on the verge of dropping out of school.

Steven became the team's leader. And his rookie team built two robots and captured first and second place at the West Coast Regional Competition. Both robots then made it to the finals of the FIRST National Competition. They were in the top 16 of over 300 teams.

Steven exercised his natural gift for leadership and used his intelligence without fear of being labeled. A whole world of options is now open to him. Steven is still in high school, works a part-time job and even goes to prisons to help other young men and women realize that they, too, have choices. Today, his grade point average is 4.0, and he has recently declared his goal to go to college and become an engineer.

But perhaps most telling, he arrived at the West Coast Regional Competition with bandages on his arms, where he just had his gang tattoos removed by laser. He wanted to tell the world that he made a choice . . . and he was not turning back. Steven stepped onto the path to excellence. And now there's no stopping him.

If there was ever a young person caught in the eye of the storm, it was Steven Lugo. If he can stand up to the storm, surely we can too.

We cannot stand idly by while minorities are held down or discouraged from pursuing their dreams. And we certainly cannot allow ourselves to be pushed back into the past.

I say it's time to move forward...into the future. It's time to move past those who want to turn back the clock. It's time that every son and every daughter in America has the same chance to succeed. It's time to stand up to the storm.

And yes, it's time to take action, because you know you there wouldn't be a NACME without Action.

Each of us can take action, no matter where we are. We can support, mentor, advise, and assist minority students in the sciences and technology. We can show them the incredible possibilities that are out there. We can challenge them to dare to dream. And we can inspire them to make those dreams into reality.

Indeed, we must take these actions, or we fail in our responsibility to our young people and our nation's future.

Yes, the storm against minorities has been strong, but when we work together, we are stronger.

And our young people are counting on us to be stronger.

Thank you.