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Keynote to the New York City Louis Stokes Alliance for Minority Participation
Fifth Annual Urban University Series, City University of New York Conference
New York, New York
April 18, 2002

Good morning. It's a pleasure to be here in the Big Apple. Thank you for inviting me to join you for the 5th Annual Urban University Conference.

Let me begin by congratulating NYC-LSAMP on *10* years of sheer excellence. You have done a magnificent job of increasing the participation of underrepresented minority students in science, technology, engineering and mathematics (STEM).

What a track record – awarding 5,800 baccalaureate degrees!

NSF and the nation are grateful for your consistently effective work of recruiting bright and talented students to STEM disciplines. And, your commitment to mentoring and nurturing, especially your one-on-one interaction, has made the difference for many students in earning their degree.

The LSAMP program, overall, is a wonderful success story. Since it began in 1990, the program has produced well over 170,000 minority baccalaureate graduates. This year, student participants in LSAMP reached an all time high of 201,615 enrollees.

And the LSAMP umbrella is continuously expanding. Three new alliances were recently added – the Pacific, North East, and Mid East LSAMPs. With the impressive reach LSAMP has had thus far, we can be assured that these new alliances will continue to enhance minority participation.

All of us are aware of the tremendous effort it takes to operate a successful program. Yet we can only imagine the effort it took to persist after the terrible tragedy that struck New York City – a place so emblematic of America's spirit and "can do" attitude.

We know that it was difficult for *all* New Yorkers to muster their resolve and carry on their daily lives. But the strength and resilience the citizens of this city displayed serves as an inspiration to the rest of the nation.

That is why this year's LSAMP magazine is dedicated to the people of New York, "for [your] extraordinary courage in the face of the worst terrorist attack on this country in its history."

You truly have shown the rest of the world how America can roll up its sleeves and get the job done, even in the face of extreme adversity. New York City is about determination and dedication – a city whose people rise to all challenges.

And who are these New Yorkers? They are a blend of cultures, races, ethnicities, and nationalities that have brought so much to this country. Renowned as the "melting pot," the city's Statue of Liberty has long been a beacon guiding immigrants to our shores. Now it also serves as a beacon for all Americans, as a reminder of our nation's courage in the face of 9-11.

As New Yorkers, you know better than any the many advantages that diversity brings. Indeed it is this diverse mixture that has woven a toughness and spunk into our national persona.

That brings us to why we are all here today. We are united in the need to diversify the science and engineering workforce so that it looks like the ever-changing composition of our nation. This is not only the "right" and "just" thing to do, but also the "best" move to make for the nation's future. And your hard work with NYC-LSAMP has already brought us steps closer to making it a reality.

Our society is rooted in science and technology and cannot sustain itself, let alone be robust, without a world class cadre of scientists, engineers, mathematicians, and a highly qualified, complementary workforce. Diversifying the STEM workforce is vital to sustaining our economic pace and continuing our ability to compete.

Our entire workforce must be educated and trained to participate fully in a society that is increasingly complex but potentially more fulfilling for each of us. Our STEM workforce, in particular, will be critical to this task.

Broadening participation in our specialized workforce must come from "The Land of Plenty," our mostly untapped potential of underrepresented minorities – America's "competitive edge" for the 21st century. Herein lies one of America's greatest opportunities, one that we must meet with commitment.

The general workforce today reflects more gender equality, and cultural and racial diversity than ever before. Yet, we still have a long way to go in reaching out and cashing in on the talents and skills of many more of our citizens.

In contrast, the *STEM* workforce does not show the same trend as the *general* workforce towards a representation at least in parity with our population. At present, we are not producing a diverse cadre of scientists, engineers, and mathematicians necessary to meet the needs of *today's* technology-based society.

This is especially troublesome now and for the future.

First, U.S. jobs are growing fastest in areas requiring knowledge and skills in science, engineering and mathematics.

Second, as the pack of nations with high tech economies continues to grow, they present growing competition for U.S. products and services in the world market.

Although the U.S. often leads other nations in specific fields of science and or technology, that lead is usually temporary. There are nations that excel at imitation and application, rather than innovation.

The U.S. had a clear lead in information technologies a decade ago. Now competitor nations are aggressively investing in IT and diminishing our 'first-on-the-street' lead.

How are we going to compete if we don't have the necessary human resources to do so? Focusing on broadening participation of underrepresented minorities has to be the drumbeat for all of us. Our STEM workforce can become ever more capable and competitive by achieving this goal. Our nation can become even stronger and more productive.

We already know of the terrific job that the LSAMP program is doing in broadening minority participation and of its contribution to NSF's aim to produce more PhDs directed towards faculty positions. Even with LSAMP's success, our Nation could use about 50,000 more minority STEM graduates. And if we can pull from the pool that LSAMP has already created, we will have made tremendous strides.

And to the talented students that are here, I encourage you to pursue graduate school and a PhD. There are exciting careers and opportunities in science and engineering waiting for you.

Your success will serve as an inspiration and model to many others who will be encouraged to follow in your footsteps. You will be the "movers and shakers" to attract other minority students into STEM disciplines.

Even if you're not striving to be role models, just by sitting in a particular place says to others that they can do it too; they begin to ask themselves, "why not me?" Changing the composition of the science and engineering professorate will go a long way toward broadening participation in the STEM workforce.

Here in this country, we are lucky to have a diverse population. Unfortunately, we haven't recognized it as a gold mine. Our diversity provides us with different perspectives, unique problem solving skills, a talent for tapping into the psyche of global markets, not just domestic markets, and a mix that strengthens our national fabric. Your creativity, ideas, and opinions are essential to our nation's forward progress.

The increasing complexity of science and engineering issues today demands that we marshal differing perspectives and bring them to the table where issues are defined and solutions rendered. It's not just a matter of justice and fairness. It's a matter of being smart. There's no better way to capture global leadership than by capitalizing on our nation's extraordinary diversity!

However, LSAMP and similar programs should not focus only on generating numbers of students. We need to prepare STEM graduates to adapt to change and handle complexity. They must be functionally literate across disciplinary boundaries as a skill for facing several iterations in their careers.

Today, careers evolve throughout a person's lifetime. Yesterday, workers mastered a profession and worked within the limited walls of a sole discipline. Now workers take the tools of their individual disciplines and expand them outward to new endeavors and cross-boundary interactions, changing the character of their disciplines in their wake.

The expanding knowledge of our research-base and sophisticated tools empower us to perform the extraordinary. Foremost among them are information technology, genomics, and nanotechnology. They herald new ways to pose and answer questions and push fields to new frontiers.

We have already seen the convergence of knowledge among the natural sciences in the expansion of interdisciplinary research. So, too, we must recognize that the interdisciplinary work must include the social, behavioral and economic sciences.

For instance, in combating our war against terrorism, we see clear needs for all disciplines of science, mathematics, engineering, and technology to protect us and to aid us in preventing such future terrorist acts. Here, the social and behavioral sciences can also help us understand and anticipate the reactions and responses of the human universe.

The social sciences are an important component in addressing many societal problems, issues as diverse as the war on terrorism and workforce competency. Social sciences are integral to all of our work if we are to proceed with insight and understand the context and background of any problem.

That's why as part of NSF's FY03 budget request, we have included a new priority area in the social, behavioral, and economic sciences that will explore the complex interactions between new technology and society to better anticipate and prepare for their consequences.

Industry knows how important human resources are to their success and the social sciences help us understand how to empower that workforce. By doing so, we empower society.

If we are going to develop a broader, more inclusive workforce in science and engineering, we need to reexamine our assumptions about education *across the board*, from kindergarten to lifelong learning. NSF is committed to this task and we are here to help.

NSF's mission is to promote better education and greater opportunities throughout the nation. Science is the frontier of human progress. The imagination, ideas, knowledge, and innovation that generate our nation's progress will come from you and those you guide.

To prepare students for careers, NSF programs start with early education. And another component of our budget request also includes a second installment of $200 million for the President's Math and Science Partnership program. We are in total agreement with the President, who said with this program we are helping to ensure that "no child is left behind."

The program will link local schools with colleges and universities to improve preK-12 math and science education, train teachers, and create innovative ways to reach out to underserved students and schools.

But the program doesn't end there. We especially hope to fund model programs that are geared towards eliminating the performance-gap between majority and minority students, and develop research evidence on how to reach under-served schools and students in creative new ways.

The Math and Science Partnership is only one element in NSF's integrated strategy to promote science, technology, engineering and math training to a broader constituency.

I commend NYC-LSAMP for your role in ensuring that the minority segment of the population is not left behind. Your encouragement of talented STEM students to pursue teaching at the K-12 levels is crucial to this goal.

That is just one of the reasons NSF is committed to its investment in NYC-LSAMP. Another is because you are creating excitement and encouragement among minority populations to participate enthusiastically in science and engineering careers.

Without your help as leaders in this process, America will not be able to marshal the talents of our diverse minority population. I can only thank you profusely for a job well done and remind you we are still at the beginning.

April 23, 2002
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