

The Paradox of Effective Leadership

Confessions of a Former Follower

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"The troubling thing is that he's here to deliver the keynote speech at our leadership seminar."

Context

Broad Participation

Why Broad Participation Matters

- Our ability to meet the challenges and achieve the opportunities of our time depends in large measure on our science and engineering (S&E) enterprise.
- Yet, while our S&E capability is as strong as ever, the dominance of the U.S. in these fields has lessened as the rest of the world has invested in and grown their research and education capacities.
- Critical demographic trends require that a national effort to strengthen the S&E workforce must draw on the minds and talents of all Americans, including minorities underrepresented in STEM

Why Broad Participation Matters

1. Our sources for the S&E workforce are uncertain:

- For many years, the nation relied on an S&E workforce that was predominantly male and white and Asian.
- In the more recent past, we have seen gains for women in some fields and an increasing reliance on international students in others.
- Non-U.S. citizens (e.g. those from China and India) have accounted for almost all growth in STEM doctorate awards
- ***However, we are coming to understand that relying on non-U.S. citizens for our S&E workforce is an increasingly uncertain proposition.***

Why Broad Participation Matters

2. The demographics of our domestic population are shifting dramatically:

- That we need to draw on all domestic sources for a strong and robust S&E workforce makes the future of our S&E workforce all the more urgent.
- ***Those groups that are most underrepresented in S&E are also the fastest growing in the general population.***

Why Broad Participation Matters

3. Diversity is an asset and an opportunity:

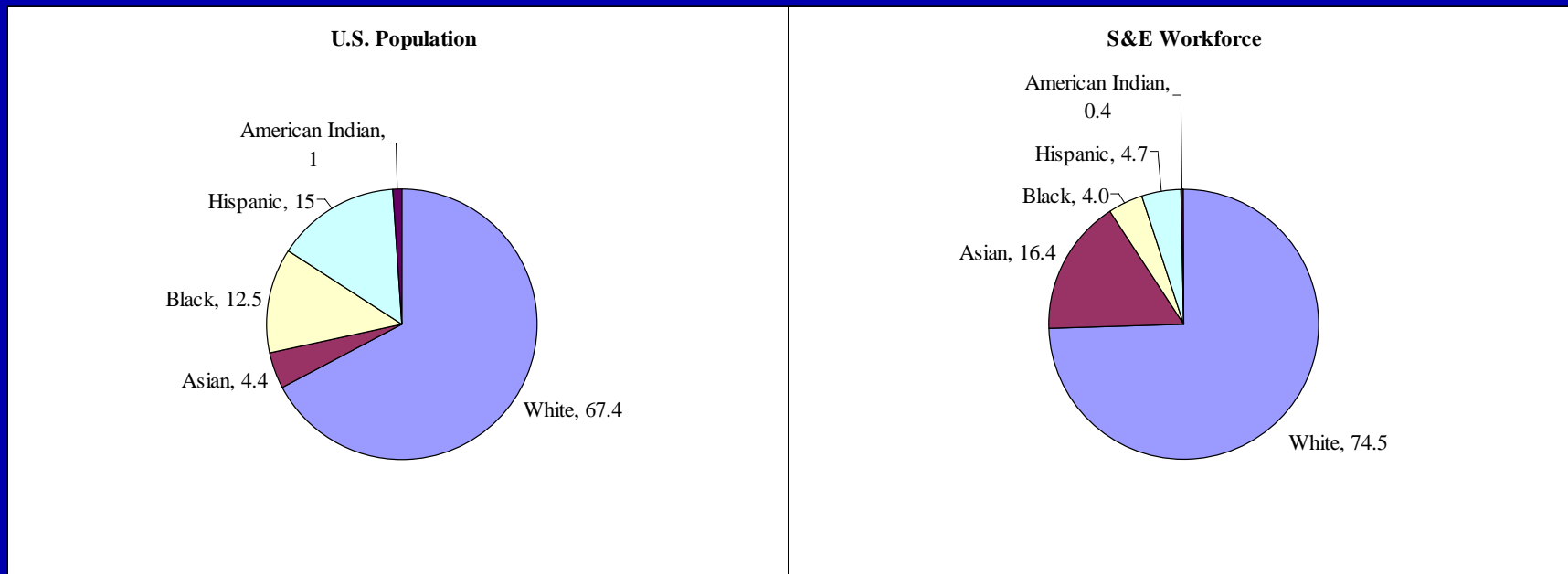
- Increasing the participation and success of URM in S&E contributes to the health of the nation by: ***expanding the S&E talent pool, enhancing innovation, and improving the nation's global economic leadership.***
- The S&E workforce is projected by the U.S. Bureau of Labor Statistics to grow faster than any other sector in coming years: ***This growth rate provides an opportunity as well as an obligation to draw on new sources of talent to make the S&E workforce as robust and dynamic as possible.***

We Start from a Challenging Position

- Underrepresented minority groups comprised 28.5 percent of our national population in 2006, yet just 9.1 percent of college-educated Americans in science and engineering occupations (academic and nonacademic)
- ***Suggests the proportion of underrepresented minorities in S&E would need to triple to match their share of the overall U.S. population.***

Source: The National Academies

U.S Population and U.S. Science and Engineering Workforce, by Race/Ethnicity, 2006



UR Minorities in US Pop = 28.5%

UR Minorities in US S&E = 9.1%

Bigger Picture

- Underrepresentation of this magnitude in the S&E workforce stems from the underproduction of minorities in S&E at every level of postsecondary education
 - 38.8 percent of K-12 public enrollment
 - 33.2 percent of the U.S college age population
 - 26.2 percent of undergraduate enrollment
 - 17.7 percent of those earning S&E bachelor's degrees
 - 17.7 percent of overall graduate enrollment
 - 14.6 percent of S&E master's
 - 5.4 percent of S&E doctorates.

Bad News for STEM

- In 200, the U.S. ranked 20th in the percent of 24-year olds who had earned a first degree in NS&E
- *Gathering Storm* recommended increasing the U.S. percentage from 6% to at least 10%.
- Underrepresented minorities would need to triple, quadruple, or even quintuple their proportions in order to achieve this 10 percent goal.
- 24-year olds with first university degree in NS&E
 1. 2.7 percent of African Americans
 2. 3.3 percent of Native Americans / Alaska Natives
 3. 2.2 percent of Hispanics and Latinos

Why Broad Participation Matters

There is a strong connection between increasing educational attainment in the United States and the global leadership of our economy... and the role of leadership in STEM education in this context must not be underestimated.

In an increasingly complex and challenging world...

People want / need...

Problems solved

Sense of security

Direction

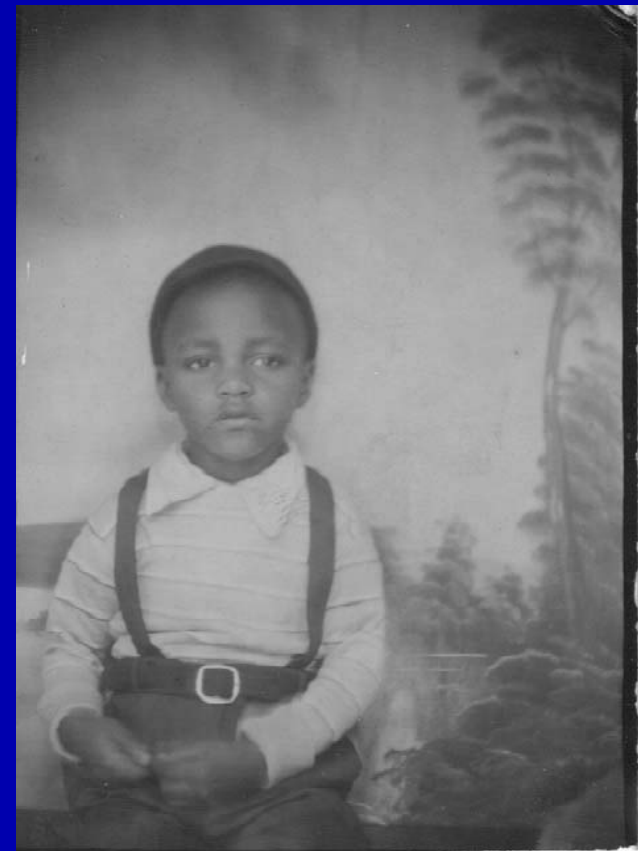
Motivation

Progress/Innovation

Who responds to these needs/ wants?

LEADERS!

Where do leaders come from?



No, really... where do leaders come from?

**Right here in this
room!**



What is the leadership paradox?

What makes an effective leader?

James Kouzes and Barry Posner, authors of *The Leadership Challenge*, describe 5 practices of leaders:

1. *Challenging the Process*. Leaders are pioneers — people who are willing to step out into the unknown in order to achieve innovation. Leaders search out opportunities, experiment and take risks.
2. *Inspiring a Shared Vision*. Leaders see pictures in their mind's eye of what the results will look like even before they have started their projects. Leaders envision the future and enlist others.
3. *Enabling Others to Act*. Exemplary leaders enlist the support and assistance of all those who must make a project work — it includes peers, superiors, customers and suppliers — all those who must support the vision. Leaders foster collaboration and strengthen others.

What makes an effective leader, cont.?

4. *Modeling the Way*. Leaders lead by their own example, being a role model for others to follow, acting in ways that are consistent with their beliefs. Leaders set the example and plan small wins.

5. *Encouraging the Heart*. Leaders must constantly encourage the heart of people to carry on by showing them how they can win. Often this is through positive acknowledgement of the many small things that people do every day. Leaders recognize contributions and celebrate accomplishments.

What do some known leaders think about “Leadership?”

- "Do not let what you cannot do interfere with what you can do."
--John Wooden
- "It takes leaders to grow other leaders."
--Ray Blunt
- "No man will make a great leader who wants to do it all himself, or to get all the credit for doing it."
--Andrew Carnegie

What do some known leaders think about “Leadership?”

- *"Success seems to be connected with action. Successful people keep moving. They make mistakes, but they don't quit."*
--Conrad Hilton
- *"Trust is the essence of leadership."*
--Colin Powell
- *"One man with courage makes a majority."*
--Andrew Jackson

What do some known leaders think about “Leadership?”

- *"There are three kinds of people: Those who make things happen, those who watch things happen, and those who ask, 'What happened?'"*
--Casey Stengel
- *"Whether you think you can or think you can't--you are right."*
--Henry Ford
- *"You may have to fight a battle more than once in order to win it."*
--Margaret Thatcher

What do some known leaders think about “Leadership?”

- *"In any moment of decision, the best thing you can do is the right thing. The worst thing you can do is nothing."*
--Theodore Roosevelt
- *"Nearly all men can stand adversity, but if you want to test a man's character, give him power."*
-- Abraham Lincoln

Final Thoughts

- Self-efficacy... The sense that you can do anything.
- Moral imagination.... The capacity to envision new ways to live your life. Thinking your way toward your own definition of success... not simply accepting the choices you've been handed.
- Moral courage... Courage to act on your values in the face of what others may say or do to try to make you change your mind. Morally courageous people make people around them very uncomfortable.... And, they may become insecure about the choices they make or fail to make.

Above all... resist the fear of failure!

Don't shy away from the challenging parts of yourself. The world is much larger than you can imagine right now... and you are much larger than you can imagine.

