

Diversity in the Science and Engineering
Before and After the Michigan Cases:
Do We Need a New Paradigm?

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Introduction

As some of you are aware, earlier this fall the National Academy of Engineering released the final report of a task force assessing the capacity of the United States engineering research enterprise. In this report, entitled “Engineering Research and America’s Future: Meeting the Challenges of a Global Economy”, one of the most significant recommendations targeted directly the mission of NACME:

Recommendation from: *Engineering Research and America’s Future*

All participants and stakeholders in the engineering community (industry, government, institutions of higher education, professional societies, et. al.) should place a high priority on encouraging women and underrepresented minorities to pursue careers in engineering. Increasing diversity will not only increase the size and quality of the engineering workforce, but it will also introduce diverse ideas and experiences that can stimulate creative approaches to solving difficult challenges. Although this is likely to require a significant increase in investment from both public and private sources, increasing diversity is clearly essential to sustaining the capacity and quality of the United States scientific and engineering workforce.

This echoes the conclusions of a recent National Science Board report concerning the science and engineering workforce, which I also quote:

“The future strength of the US S&E workforce is imperiled by two long-term trends:

- 1. Global competition for S&E talent is intensifying, such that the U.S. may not be able to rely on the international S&E labor market for still unmet skill needs.*
- 2. The number of native-born S&E graduates entering the workforce is likely to decline unless the nation intervenes to improve success in educating S&E students from all demographic groups, especially those that have been underrepresented in S&E careers.”*

"Since an increasingly large share of the workforce will consist of women, underrepresented minorities, and persons with disabilities, groups persistently underrepresented in SET careers, this is where we must turn our attention."

Hence there seems widespread agreement that recruiting more underrepresented minorities and women into science and engineering careers is essential not only to meeting the workforce needs of an increasingly technological nation, but such diversity is essential in providing the intellectual vitality and innovation necessary for economic prosperity, national security, and social well-being in the "flat world" of a global, knowledge-driven economy.

There is a certain irony here. The increasing diversity of the American population with respect to race, ethnicity, and nationality is one of our greatest strengths. A diverse population gives us great vitality. However today it is also one of our most serious challenges as a nation since the challenge of increasing diversity is complicated by social and economic factors. Far from evolving toward one America, our society continues to be hindered by the segregation and poverty experienced by minority populations.

For over 30 years, America's colleges and universities have taken special steps to provide the opportunities for higher education to those elements of our society hindered by discrimination or economic means. Such broad-based participation is even more critical today, as we become ever more dependent upon educated people and their ideas, skills, and talents at the dawn of an age of knowledge.

Yet today many in our society are challenging, in both the courts and through referendum, long-accepted programs as affirmative action and equal opportunity aimed at expanding access to higher education to underrepresented communities and diversifying our campuses.

As some of you know, I was a named defendant in two landmark cases that ended up before the United States Supreme Court last year—actually I was the

“et. al.” in *Gratz vs. Bollinger, et. al.* (I might note that this was an interesting ploy by the plaintiff lawyers, who attempted to intimidate university leaders by naming them personally as defendants rather than simply suing the institution. Since this was a class action suit, and during my presidency probably 200,000 applicants had been denied admission, I had a particular interest in the outcomes of these cases. But I also have many scars from waging battles on behalf of equity and social justice, so this was really nothing new!)

But I had another interest in these cases beyond being a defendant. During my presidency I had led an effort during the 1980s and 1990s on our campuses called the Michigan Mandate. The Mandate proved remarkably successful in not only doubling the number of underrepresented minorities among our students and faculty, but had achieved some of the highest minority graduation rates and success in faculty promotion and tenure decisions in the nation. I suspect it was the success of this effort that made Michigan a high profile target for those conservative groups which were attempting to challenge the methods higher education has used for the past several decades to achieve diverse campuses and provide educational opportunities for underserved populations.

This Tuesday evening I would like to do a bit of Monday morning quarterbacking, assessing both the implications of the Supreme Court decisions on the Michigan cases that have firmly established that “diversity in higher education is an interest of the state” and that to achieve it, some consideration can be given to race, and then to address the question of “where to next?”.

But first, it seems useful to explain just why the University of Michigan ended up leading the charge for higher education on this important issue.

A Bit of History

The University of Michigan began as a land-grant university, but not from the Morrill Act but rather a half-century earlier through the Northwest Ordinance. The Northwest Ordinance provided for civil rights and liberties, and education,

particularly personal freedom, for those territories in the Ohio River valley seeking statehood, decreeing “there shall be neither slavery nor involuntary servitude in the said territory.” It also stated “Religion, morality, and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged.” (This principle is chiseled in the limestone frieze above the entrance to Angell Hall, the most prominent building on the Michigan Ann Arbor campus.)

Hence from its earliest days of our university, 20 years before Michigan entered the union, the mission of the University was “an uncommon education for the common man”, as articulated by one of our early presidents, James Angell. Here he was referring to the working class, since the colonial colleges of the East were primarily concerned with educating the elite. But this definition of “common man” rapidly broadened to include African Americans and women in the 1860s. At a time when our state was hostile to immigrants, the University took great pride in the international nature of its student body. In fact, Michigan awarded a Ph.D. to the first Japanese citizen, who returned to play a key role in the founding of Tokyo University. During the 20th Century, when Jewish students faced quota barriers in Eastern universities, they came west to places like Ann Arbor and Madison, where they were welcomed without restrictions.

Of course, this long-standing commitment of the University both to diversity and educational opportunity was sometimes not well received either by state or federal governments. But fortunately, the University’s unusual constitutional autonomy and its rather weak reliance on state appropriations (today almost non-existent) gave it the control of its own destiny to embrace diversity as a key mission.

At Michigan we remain convinced that our university’s capacity to serve our society, our nation, and the world successfully in the challenging times before us would depend in large part on our ability to achieve and sustain a campus community recognized for its racial, cultural, and ethnic diversity. Indeed, our

diversity has been a cornerstone of our efforts to achieve excellence in teaching, research, and service.

The Michigan Mandate

Although the University sustained its commitment to diversity throughout the 20th Century, its progress reflected many of the challenges facing our society during the years of discrimination based upon race, religion, and gender. Many were the times we took one step forward toward greater diversity, only to slide two steps back through later inattention. The student disruptions of the 1960s and 1970s triggered new efforts by the University to reaffirm its commitments to affirmative action and equal opportunity, but again progress was limited and a new wave of concern and protests hit the campus during the mid-1980s, just prior to the appointment of our administration.

In assessing this situation, we concluded that although the University had approached the challenge of serving an increasingly diverse population with the best of intentions, it simply had not developed and executed a plan capable of achieving sustainable results. More significantly, we believed that achieving our goals for a diverse campus would require a very major change in the institution itself.

It was the long-term strategic focus of our planning that proved to be critical. The University would have to leave behind many reactive and uncoordinated efforts that had characterized its past and move toward a more strategic approach designed to achieve long-term systemic change. In particular, we foresaw the limitations of focusing only on affirmative action; that is, on access, retention, and representation. We believed that without deeper, more fundamental institutional change these efforts by themselves would inevitably fail—as they had throughout the 1970s and 1980s.

The challenge was to persuade the university community that there was a real stake for everyone in seizing the moment to chart a more diverse future. More

people needed to believe that the gains to be achieved through diversity would more than compensate for the necessary sacrifices. The first and most important step was to link diversity and excellence as the two most compelling goals before the institution, recognizing that these goals were not only complementary but would be tightly linked in the multicultural society characterizing our nation and the world in the future. As we moved ahead, we began to refer to the plan as *The Michigan Mandate: A Strategic Linking of Academic Excellence and Social Diversity*.

The mission and goals of the Michigan Mandate were stated quite simply:

1. To recognize that diversity and excellence are complementary and compelling goals for the University and to make a firm commitment to their achievement.
2. To commit to the recruitment, support, and success of members of historically underrepresented groups among our students, faculty, staff, and leadership.
3. To build on our campus an environment that sought, nourished, and sustained diversity and pluralism and that valued and respected the dignity and worth of every individual.

A series of carefully focused strategic actions was developed to move the University toward these objectives. These strategic actions were framed by the values and traditions of the University, an understanding of our unique culture characterized by a high degree of faculty and unit freedom and autonomy, and animated by a highly competitive and entrepreneurial spirit.

The strategy was both complex and all-pervasive, involving not only a considerable commitment of resources (e.g., fully-funding all financial aid for minority graduate students) as well as some innovative programs such as our Target of Opportunity program for recruiting minority faculty. It also was one of those issues that we believed required leadership on the front lines by the president, since only by demonstrating commitment from the top could we demand and achieve comparable commitments throughout the institution.

By the mid 1990s Michigan could point to significant progress in achieving diversity. The representation of underrepresented minority students, faculty, and staff more than doubled over the decade of the effort. But, perhaps even more significantly, the success of underrepresented minorities at the University improved even more remarkably, with graduation rates rising to the highest among public universities, promotion and tenure success of minority faculty members becoming comparable to their majority colleagues, and a growing number of appointments of minorities to leadership positions in the University. The campus climate not only became more accepting and supportive of diversity, but students and faculty began to come to Michigan because of its growing reputation for a diverse campus.

And, perhaps most significantly, as the campus became more racially and ethnically diverse, the quality of the students, faculty, and academic programs of the University increased to their highest level in history. This latter fact seemed to reinforce our contention that the aspirations of diversity and excellence were not only compatible but, in fact, highly correlated. By every measure, the Michigan Mandate was a remarkable success, moving the University beyond our original goals of a more diverse campus.

But, of course, this story does not end with the successful achievements of the Michigan Mandate in 1996 when I stepped down as president. Beginning first with litigation in Texas (the Hopwood decision) and then successful referendum efforts in California and Washington, conservative groups such as the Center for Individual Rights began to attack policies such as the use of race in college admissions. Perhaps because of Michigan's success in the Michigan Mandate, the University soon became a target for those groups seeking to reverse affirmative action with two cases filed against the University in 1997, one challenging the admissions policies of undergraduates, and the second challenging those in our Law School. Although I had been succeeded by Lee Bollinger by that time, I was still named personally as a defendant in one of the cases (here I referred to myself as the "et. al" in the *Gratz vs. Bollinger, et. al.* case), although I had little influence on the strategies to defend both cases to the level of the Supreme Court,

aside from giving day after day of depositions and having all of records of my presidency digitized, archived, and posted publicly by our university history library.

At Michigan, we felt it was important that we “carry the water” for the rest of higher education to re-establish this important principle. Throughout our history, our university has been committed to extending more broadly educational opportunities to the working class, to women, to racial and ethnic minorities, and to students from every state and nation. It was natural for us to lead yet another battle for equity and social justice.

Yet there is a certain irony here. Never in our design or execution of the Michigan Mandate did we ever consider admissions policies to be particularly relevant to the strategy. To be sure, we knew that those admissions policies contained affirmative action provisions that were consistent with those used elsewhere in universities with selective admissions, and we instructed our staff to make certain they were also consistent with the law and ongoing court rulings. But we simply didn’t believe that tinkering with admissions policies was the key to achieving diversity. Hence it was ironic that these rather standard policies should be the target of those groups seeking to challenge our efforts.

Although the Supreme Court decisions were split, supporting the use of race in the admissions policies of our Law School and opposing the formula-based approach used for undergraduate admissions, the most important ruling in both cases was, in the words of the court:

- “Student body diversity is a compelling state interest that can justify the use of race in university admission”
- “When race-based action is necessary to further a compelling governmental interest, such action does not violate the constitutional guarantee of equal protection so long as the narrow-tailoring requirement is also satisfied.”

Hence, the Supreme Court decisions on the Michigan cases reaffirmed those policies and practices long used by those selective colleges and universities throughout the United State. But more significantly, it reaffirmed both the importance of diversity in higher education and established the principle that, appropriately designed, race could be used as a factor in programs aimed at achieving diverse campuses. Hence the importance of diversity in higher education and the affirmation of methods to achieve it was firmly established by the highest court of the land. We had won. Or so we thought...

The Battle Continues

Yet, while an important battle had been won, the war was far from over. During the months following the Michigan decision, university after university began to back away from programs aimed at recruitment, financial aid, and academic success of minority students. Elite schools such as Harvard, Yale, Princeton, and MIT either eliminated entirely such programs or opened them up to non-minority students from low-income households or who demonstrate a commitment to promoting racial diversity (whatever that means).

Why? They have been cautioned by their lawyers, who interpret the “narrowly-tailored use of race” language in the Michigan decisions as prohibiting any activities that are not race-blind. Some quotes illustrate:

- “Essentially every legal scholar or general counsel I have consulted now believes that race-exclusive programs are not likely to withstand a legal challenge.”
- “It appears that, under the Michigan cases, race exclusivity will not pass legal mustard.”
- “We now open our minority programs to nonminority students from low-income households or who demonstrate a commitment to promoting racial diversity.”

Well, I suppose this is one way to look at it. But, of course, one might also conjecture that these institutions were also aware of the tens of millions of dollars and years of effort Michigan committed to defending its efforts to achieve diversity and chose a more cautious course of back-tracking...

Yet, I must say that after the years of effort in building a diverse campus at Michigan and successfully defending our actions all the way to the Supreme Court, it would be tragic indeed if the decisions in the Michigan case caused more harm than benefit to the cause of diversity. Imagine our frustration in fearing that rather than advancing the cause of social justice, our efforts have simply empowered the lawyers on our campuses to block effective efforts to broaden educational opportunity.

Here I must compliment NACME for its effort to provide guidance for STEM Educators during the post-Michigan era. The guidebook developed by Shirley Malcom and others provides a very thorough and helpful analysis of the legal intricacies that now apparently govern diversity efforts. I certainly do not have any legal expertise to add to such an effort.

However I do have one word of advice to those university and corporate leaders facing such challenge: Never, ever, ask your general counsel whether you can do something or not. Instead, I have always found it best to begin by stating that "This is what I want to get done, and you tell me how to do it legally...or at least give me an assessment of the risk I will incur if I ignore your advice and go ahead anyway!"

Of course we still have many challenges to face in Michigan. There has been a well-funded effort to obtain the 317,000 signatures necessary to put a referendum on the November 2006 ballot seeking a constitutional amendment that would outlaw the consideration of race in college admissions in Michigan, negating the Supreme Court decision of last summer. Although this effort is spearheaded by an auslander, Ward Connerly, of California Proposition 209 fame, early polling suggests that over 70% of likely Michigan voters would support it. Hence we are

not out of the woods yet...by a long shot! Clearly we have some very heavy lifting ahead of us to influence public opinion.

Some lessons learned

Let me conclude with a few lessons learned from our Michigan experience.

1. It is important to recognize that most institutions (universities, corporations, government) are actually biased against diversity since they protect the status quo. Hence efforts to enhance diversity are, in reality, exercises in fundamental institution change.
2. Achieving diversity requires active leadership from the top of the organization
 - a. engaging, listening, learning from minority communities
 - b. picking up the flag and leading the troops into battle
3. It is important to approach diversity strategically, investing in what works, and either fixing or abandoning efforts that fail!

Next Steps

Ironically, the uses of affirmative action (and programs that involved racial preference) actually were not high on the agenda of the Michigan Mandate. Rather our success involved commitment, engagement, and accountability for results. Yet there is ample evidence today from states such as California and Texas that a restriction to race-neutral policies will drastically limit the ability of elite programs and institutions to reflect diversity in any meaningful way. As former UC President Richard Atkinson noted in a recent address in Ann Arbor, *“Proposition 209 asked the University of California to attract a student body that reflects the state’s diversity while ignoring two of the major constituents of this diversity—race and ethnicity. A decade later, the legacy of this contradictory mandate is clear. Despite enormous efforts, we have failed badly to achieve the goal of a student body that*

encompasses California's diverse population. The evidence suggests that without attention to race and ethnicity this goal will ultimately recede into impossibility."

Yet it is also the case that many today believe that despite the importance of diversity, racial preferences are contrary to American values of individual rights and the policy of color-blindness that animated the Civil Rights Act of 1964.

Atkinson suggests that we need a new strategy that recognizes the continuing corrosive force of racial inequality but does not stop there. We need a strategy grounded in the broad American tradition of opportunity because opportunity is a value that Americans understand and support. We need a strategy which makes it clear that our society has a stake in ensuring that every American has an opportunity to succeed—and that every American, in turn, has a stake in our society.

Let me mention a broader theme that might suggest such a strategy. There is growing recognition that we have entered an age of knowledge in a global economy, in which educated people, the knowledge they produce, and the innovation and entrepreneurial skills they possess have become the keys to economic prosperity, social-well being, and national security. Moreover, education, knowledge, innovation, and entrepreneurial skills have also become the primary determinants of one's personal standard of living and quality of life. Democratic societies—and state and federal governments—must accept the responsibility to provide all of their citizens with the educational and training opportunities they need, throughout their lives, whenever, wherever, and however they need it, at high quality and at affordable prices.

Perhaps it is a time akin to 1862 when President Lincoln signed the Morrill Act to create the land-grant colleges to serve an industrial nation, or in 1944 when President Roosevelt signed the G. I. Bill, or in 1965 when President Johnson signed the Higher Education Act. Perhaps it is time to create an analog to the Land Grant Act or G I Bill for the 21st century—perhaps a *Learn Grant Act* that would provide every citizen with an entitlement for as much education as they

need, wish, or are capable of, throughout their lives. Government leaders could define and embrace a vision for the nation's future that provides citizens with the lifelong learning opportunities and skills they need to live prosperous, rewarding, and secure lives in this world. The theme would be universal lifelong educational opportunity as a fundamental right to all Americans—not a privilege for the fortunate few.

For example, a combination of federal and state programs could provide vouchers or education accounts that could be redeemed at accredited institutions for partial support of education with amounts adjusted to levels (community college, undergraduate degrees, workplace training, professional and graduate degrees, lifelong enrichment) and available at anytime throughout one's life. While the startup costs of such a program would be considerable (perhaps one-third of the costs of health care), the impact of creating a truly world-class workforce—or better yet a society of learning—capable of competing in a global, knowledge-driven economy would be extraordinary.

Unfortunately, we have a big challenge here because the nation currently lacks the necessary long-term national goals and strategies to ensure the recruitment, education, and ongoing development of an adequately sized, appropriately qualified, and adequately diverse science and engineering workforce. Of course this is not just a weakness of the current administration, since 10 years ago, when I was chair of the National Science Board, we conveyed the same message to the previous administration. With precisely the same result. Silence.

But times today are different. As both our National Academy of Engineering study and the earlier National Science Board report stressed, our nation faces a growing challenge in creating the science and engineering workforce so necessary to achieving prosperity and security in an increasingly competitive, knowledge-driven, global economy. Since an increasingly large share of the workforce will consist of women, underrepresented minorities, and persons with disabilities, groups persistently underrepresented in STEM careers, this is where we must turn our attention.

One Final and Very Personal Observation

At Michigan we remain absolutely convinced that there is a very strong linkage between academic excellence and campus diversity. We have both demonstrated and fought to sustain this bond.

The same can be said for the dependence of our nation's prosperity and security upon social diversity and broad representation in all aspects of American life. Indeed, in an increasingly diverse world, it is hard to imagine how we can flourish as a nation without tapping the talent, the wisdom, the experience, and the cultures of all of our citizens. We are a great multicultural nation—and we must reflect that extraordinary diversity in every aspect of our national character, including most particularly, in science and engineering!

Yet, speaking as a former leader of a major university, let me caution that defending principles such as equity and social justice can be hazardous to one's health, not to mention one's career. Not only are they usually controversial, but they also frequently demand leadership on the front lines. I firmly believe that only a leader who is willing to carry the flag into battle can move such complex agendas ahead, albeit at considerable risk. This is perhaps the reason why so few institutions make progress in complex areas such as social diversity.

During my last year as Michigan's president, the UC Regents eliminated affirmative action, the Hopwood case was moving through the federal courts, and, perhaps because of my strong stand, several strongly conservative candidates were elected to the University's Board of Regents. Yet I felt it important to speak and act once again in support of the Michigan Mandate, to counter that strong, cold wind blowing from the west in the wake of California's Proposition 209.

There is an old saying among university presidents cautioning them to take great care in choosing the ditch where they fight from, since that battle may be their

last. Although I felt very strongly about the over-commercialization of college sports, this was one ditch that I refused to die in. There where many others I skillfully dodged. But sometimes risking one's tenure is necessary to serve the institution and sustain one's personal integrity. Diversity was clearly such an issue for me. Although Michigan's efforts to achieve diversity received the strong support of most members of the university community, these efforts were not accomplished without considerable resistance.

Yet I also believe today that I would choose to fight in this ditch again, even knowing the likely personal toll it would take. There are few causes that are clearly worthy of such sacrifices. Diversity, equity, and social justice are certainly among them.