

Keynote Address at the Dinner For the 23rd Annual McKnight Fellows Meeting and the
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"The Imperatives, Challenges and Opportunities For Increasing Diversity of the Academy
and Industry In Science and Technology Fields"

I must begin by offering hearty congratulations to the talented scholars who are the recipients of the McKnight Florida Fellowships. You are the bright future of academia for our state and our nation at a time when your accomplishments and contributions could not be more critical.

The work of the McKnight Foundation and the Florida Education Fund to support the attainment of PhDs and the advancement of academic careers in science and technology fields by individuals who are African-American or Hispanic is essential.

The strength of our nation's economy, global economic competitiveness and social compact depend on our ability to significantly increase the racial, gender and economic diversity of the Academy and industry in science and technology fields. We must include those who have been historically excluded from these endeavors.

Our nation's position as a world leader in higher education and innovation depends on this.

Our ability to fulfill the principles of social justice that represent the aspirational, if not the actual original, foundation of our democracy depends on this.

And our ability to avoid the incalculable, but very real, cost of wasted human and intellectual potential depends on this.

There are three primary reasons why a diverse Academy in science and technology fields is so pivotal.

First, science and technology fields are important drivers of our nation's and the world's economies. The National Science Foundation reports that "scientists and engineers contribute enormously to technological innovation and economic growth," far exceeding in impact the five percent of the U.S. civilian workforce that they represent.¹ NSF

¹ National Science Board, 1 Science and Engineering Indicators 2002, at ch. 2, 3, 5, National Science Foundation ("NSF"), <http://www.nsf.gov/sbe/srs/seind02/start.htm> (NSF's Science and Engineering Indicators 2002 are cited "SEI"); NSF, Women, Minorities, and Persons With Disabilities in Science and Engineering 2000, <http://www.nsf.gov/sbe/srs/nsf003271> ("WMD"); President's Council Of Advisors On Science And Technology, Workforce/Education Subcommittee ("PCAST"), at <http://www.ostp.gov/pcast>

concludes that technology is “increasingly recognized as a key determinant of economic growth by most nations.”²

Second, science and technology are creative and collaborative undertakings in a world that is increasingly connected and diverse.

NSF emphasizes that our “nation’s international economic competitiveness...depends on the U.S. labor force’s innovation and productivity” and that a “diverse, globally-oriented workforce of scientists and engineers” is needed to support continued U.S. economic leadership. And science has been global for much longer than the current trend toward globalization in many areas.³

Industry depends on higher education to contribute highly capable, creative, collaborative and diverse scientists to the technology workforce in order to stay competitive and innovative, and to excel. Research has shown that students learn more and the workforce is more productive and successful in a broadly diverse setting.⁴ U.S. academic research institutions must deliver the diverse campus, educational, research and living communities that are required to enable such learning inside and outside the classroom and the laboratory.

And a diverse academic community is required to foster the best research. Industry depends on academic research institutions to increase fundamental knowledge from which industry can develop practical solutions to the needs of a diverse society. This is the incomparable U.S. partnership of academic research and industry that has resulted in innumerable advances in knowledge and ultimately improvements in the quality of life, health, and productivity of society in this country and around the world.⁵

Third, it is fair and just to provide access to fields holding the greatest potential to those who have been, and shamefully still are, excluded and discriminated against in our society. The U.S. Supreme Court’s 2003 decision in the Michigan law school admissions case, Grutter v. Bollinger, allows race to be appropriately taken into account in admissions. Former Justice Sandra Day O’Connor writing for the majority at least

in the June 2004 report entitled, “Science and Engineering Capabilities”, parts 2 and 3.

² 1 SEI, at 5-44.

³ 1 SEI, at p. 3-15 to 3-29, 5-29 to 5-30; WMD, at 1.

⁴ Patricia Gurin et al., *Diversity and Higher Education: Theory and Impact on Educational Outcomes*, 72 *Harvard Educ. Rev.*, at p. 330-36 (2002); William G. Bowen and Derek Bok, *The Shape of the River: Long-Term Consequences of Considering Race in College and University Admissions*, Princeton University Press (2d ed. 2000); Helen Lippman, *Variety is the Spice of a Great Workforce*, *Business & Health Archive* (May 1, 2000).

⁵ See notes 1-4, *supra*; Amici Curiae Brief of Massachusetts Institute of Technology, Leland Stanford Jr. University, E. I. DuPont De Nemours and Company, International Business Machines Corp., National Action Council for Minorities in Engineering, the National Academy of Sciences and the National Academy of Engineering, <http://web.mit.edu/newsoffice/nr/2003/amicus-brief.pdf> in Grutter v. Bollinger, 539 U.S. 306, 123 S. Ct. 2325 (2003)(upholding University of Michigan Law School’s holistic assessment of each candidate for admission, taking race among other factors into account) and Gratz v. Bollinger, 539 U.S. 244, 123 S. Ct. 2411 (2003)(striking down as unconstitutional University of Michigan’s automatic award of 20 points to minorities in the admissions evaluation process) (“MIT Brief”);

implicitly acknowledges that, unfortunately, race still matters in our society. Justice Ruth Bader Ginsburg's concurring opinion is more explicit.⁶

Broadly defined diversity—including racial, ethnic, gender and socioeconomic diversity—in the science and technology Academy and workforce is essential if, as a nation, we are to achieve the most productive educational and research experiences, to identify all of the important needs of all segments of society, to formulate the most effective and elegant solutions to meet those needs, to retain our leadership role in education, innovation, and the world economy, and to earn a reputation as a just society. The U.S. higher education and academic research endeavor must clearly and publicly articulate that diversity is central to our educational and research missions.

In the midst of these undeniable realities, our nation is facing a crisis of social injustice and declining intellectual capital resources that we simply cannot ignore.

Only about 18 percent of all bachelors degrees awarded in the U.S. have historically been earned in the natural and physical sciences, mathematics and engineering. And the number of science and engineering degrees earned in the U.S. was stable or declined in the 1990s. The number of such degrees earned in Asia and Europe increased according to NSF. And in the first decade of the 21st century, the trend that U.S. students' interest in science and technology careers and their performance in science and mathematics are declining, while foreign students' interest and performance in these areas are increasing, has continued.⁷ These data alone pose a significant challenge for our country.

However, even more problematic are the demographic trends. Minorities constituted about 30 percent of the college age population and about 24 percent of the total population in the U.S. in 2000. And by 2025, NSF projects that minorities will constitute 38 percent of the college age population. Minorities are projected to surpass Caucasians in the U.S. population soon after 2050.⁸ Those individuals who are referred to as minorities today will be the majority during the lifetimes of some of us in this room, and will certainly be the majority during the lifetimes of our children.

Yet, African Americans, Hispanics and Native Americans together accounted for only 14 percent of the only 18 percent of bachelors degrees awarded in the U.S. in 2005 in natural and physical sciences, mathematics and engineering.⁹ And only 4.4 percent of the 37.5 percent of PhDs awarded in the U.S. in 2005 in these science and technology fields were earned by individuals in these minority groups.¹⁰ This dearth of adequate degrees in

⁶ See *Grutter*, at 341-42; 345 (Ginsburg, J., concurring).

⁷ 2 SEI, at Appendix 2-17; WMD, at p. 20; MIT Brief, supra note 5; PCAST, June 2004 report at parts 3 and 4.

⁸ U.S. Census Bureau, US Summary 2000 (July 2002), at www.census.gov/population/cen2000/phc-t08 (Tables 3 and 4 averaged)(15-24 year-olds in the U.S. population based on 2000 census data); 2 SEI, Table 2-2 (Appendix Tables); See U.S. Department of Commerce, Minority Business Development Agency, Minority Population Growth: 1995 to 2050, at p. 1-3 (1999); U.S. Census Bureau, Dynamic Diversity: Projected Changes In U.S. Race and Ethnic Composition 1995-2050, at p. 1 (1999).

⁹ 2 SEI, at Appendix Table 2-17; WMD, at p. 20; MIT Brief, supra note 5.

¹⁰ See National Center for Education Statistics:
http://nces.ed.gov/programs/digest/d06/tables/dt06_274.asp.

science and technology fields has led to under-representation in academia and the workforce, with only 7 percent of the science and engineering workforce in 1999 comprising African Americans, Hispanics and Native Americans. And the minority cohort is the less experienced cohort in these fields.¹¹ Under-represented minorities, women and people with disabilities represent two-thirds of the U.S. workforce, but hold only one-fourth of the science and technology jobs.¹² Caucasians and Asians represent the vast majority of the science and engineering workforce and are the aging, more experienced cohort.¹³ Rensselaer Polytechnic Institute of Technology's President, Shirley Ann Jackson, speaks of our nation being on the cusp of having an under-represented majority in the most important fields.

As the minority population in the U.S. increases, the under-representation of minorities in fields that are major drivers of our economy increasingly undermines our nation's economic and innovative strength and leadership in the world. The effect on our nation's attainment of social justice is obvious. The prognosis for the health of U.S. society and our leadership in the world is grim, unless we take action now. We simply must capture the lost human potential of those segments of our society who have been, and continue to be, under-represented in science and technology for the good of our entire nation. We must find solutions to the exclusion of racial minorities, women and the poor at all science and technology educational levels, in academia and in industry, because their continued exclusion will pre-ordain the decline of our nation.

The legal landscape is not favorable for achieving our objectives. We must be realistic about this fact. However, we must approach the problem with creativity, and we must resolve to not let the legal challenge deter our progress.

Four years have passed since the U.S. Supreme Court's historic decisions in the University of Michigan law school and undergraduate admissions cases.¹⁴ For the first time since the Court's 1978 Bakke decision,¹⁵ these cases posed the question of whether, to what extent, and how race may be considered in college and graduate school admissions by public institutions that are subject to the Equal Protection Clause of the U.S. Constitution and by private institutions that accept federal funding and are made subject to the same principles through a Congressional act.¹⁶ While these cases address admissions, their articulation of equal protection principles that apply when race is taken into account in making a decision or awarding a benefit is likely at least to influence, if not to govern, the constitutional propriety of minority mentoring and funding programs as well. Challenges to such programs have not yet been reviewed by the Supreme Court,

¹¹ ISEI, at p. 3-12, 3-15 to 3-24, 3-27, 5-29; WMD, at p. 20-22, Text Table 5-2 at 52. Only 9.1 percent of all higher education faculty are members of these minority groups so the percentage who are faculty in science and technology fields is even less. See National Center for Education Statistics: http://nces.ed.gov/programs/digest/d06/tables/dt06_229.asp.

¹² PCAST, June 2004 report at part 3.

¹³ See note 11.

¹⁴ Grutter v. Bollinger, 539 U.S. 306, 123 S. Ct. 2325 (2003); Gratz v. Bollinger, 539 U.S. 244, 123 S. Ct. 2411 (2003).

¹⁵ Regents of the University of California v. Bakke, 438 U.S. 265 (1978).

¹⁶ Title VI of the Civil Rights Act of 1964, 42 USC 2000d.

but it is important to understand the legal context in which they could be reviewed in the future.

The Supreme Court's law school admissions decision, Grutter, was a great victory for higher education. It affirmed that colleges and universities may take race into account in admissions decisions and that higher education has a First Amendment right to exercise academic judgment in defining its mission and admitting students. We must do so appropriately, by considering race as one of many factors in an individualized, holistic assessment of each candidate, using uniformly applied criteria, to determine the overall student body or graduate program composition that will best achieve a university's educational mission.

However, Bakke, Grutter, and Gratz--the University of Michigan undergraduate admissions case which struck down as unconstitutional the assignment of points for race in evaluating applicants--were losses for diversity in higher education in some sense. These decisions hold that race may not be used in admissions to remedy general societal discrimination or to achieve racial balancing—meaning that race may not be used in admissions to ensure that the representation of racial groups in a college's student body approximates their representation in society at large.¹⁷

These decisions hold that equal protection is an individual right and does not apply more to one race than another. They reject the notion that laws and programs aimed at including those who have been historically excluded should be looked at differently—more favorably-- under the law, than laws and programs that are invidiously aimed at excluding some groups.

Together, these cases hold that “strict judicial scrutiny” applies to determine the propriety of taking race into account in admissions under the Equal Protection Clause.¹⁸ To satisfy strict scrutiny, the burden of proof is on the institution of higher education, other public agency, or public funding recipient to demonstrate that it is necessary to use race to achieve a compelling educational interest, that race is used only to the extent necessary and not more, that the approach to using race is not unduly burdensome on non-minority interests, and that the use of race is time limited to the period in which there is no other workable alternative.¹⁹ Let me explain.

Grutter holds that the educational benefits garnered from a broadly diverse student body include undermining stereotyping and encouraging multi-cultural skills and social justice. These educational benefits -- not diversity for its own sake -- constitute a compelling interest that justifies taking race into account in admissions.²⁰ Former Justice O'Connor, writing for the majority, recognizes the fundamental and central role of higher education in preparing future generations for citizenship and leadership in support of our democracy and in contributing to a well-trained labor pool in support of our economy and national

¹⁷ Bakke, at 306-07, 310; Grutter at 329-30; Gratz, at 270-71.

¹⁸ Grutter, at 326-27; Gratz at 270; Bakke, at 289-90.

¹⁹ Grutter, at 341-43.

²⁰ Grutter, at 325.

security.²¹ Consequently, the court holds that an institution of higher education has a First Amendment-protected right, not only to define its educational mission to include providing the best education to all of its students, as the court held in Bakke, but also to include, more broadly, serving the nation's and society's needs. In order to achieve that two-pronged educational mission, an institution of higher education may determine that it has a compelling interest in fostering a broadly diverse student body.²²

The “broad diversity” that the Court recognizes as fostering a compelling educational interest is all aspects of individuals that may contribute to the richness of views, talents and experiences in the student body.²³ Broad diversity includes racial, national origin and gender diversity, but it is not limited to these aspects of an individual. Talent, geographic and socio-economic backgrounds and many other attributes of individuals contribute to broad diversity. An academic institution may find, however, that it has achieved some aspects of broad diversity easily, while racial and certain other aspects of that diversity may have eluded the institution and may require more focused attention.

The Michigan cases address admissions as a means of achieving the compelling educational benefits of broad diversity. However mentoring and funding programs that support the achievement of broad diversity in the undergraduate and graduate student bodies are also instrumental because affordability and mentoring are critical aspects of access.²⁴

Under Grutter and Gratz, for some consideration of race in admissions to be necessary and time-limited, there must not be any available “workable race-neutral alternative.” Institutions must periodically seriously consider any workable alternatives. However, they need not consider alternatives that would change the character or quality of the institution or its programs, as reducing objective academic standards would for selective institutions. They also need not foreclose their exercise of academic judgment in assessing the strength of candidates, as lotteries and percentage plans would.²⁵

For race to be used only to the extent necessary and not more in admissions, an institution generally must not use race-exclusive approaches such as racial quotas or assigning a numerical value to belonging to a particular race.²⁶

Under Grutter and Gratz, an admissions program that considers race will not be judged to overburden non-minority interests if the same process and standards apply to all candidates, regardless of race, in a highly individualized, holistic assessment of each candidate. Race may be one of many individual attributes and experiences considered in

²¹ Grutter, at 331-32.

²² Grutter, at 328; 330-33.

²³ Grutter, at 338-39.

²⁴ See 1 SEI, at 5-29 to 5-30 (“Accumulating research points to the importance of role models and mentoring to student success in mathematics, science, and engineering, especially for women and minorities,” yet these groups are under-represented on campuses and in recipients of science and engineering PhDs as well as employment. Both government and private groups have seen the need for targeted programs to increase access.); WMD, at p. 8 to 9.

²⁵ Grutter, at 340.

²⁶ Grutter, at 334.

evaluating all candidates. Although race may be a plus factor, tipping the balance in favor of admission for some candidates over others, race may not be the only plus factor and it may not be weighed to the same degree in all candidates of a particular race.²⁷

The Michigan decisions do not address mentoring and funding programs. These take many forms across academia today. Some are exclusively for racial minorities. Others have been refashioned after the Michigan cases to retain their primary purpose of increasing access for racial minorities, but now take race significantly into account in selection of participants, rather than being exclusively available to racial minorities. These programs recognize that some non-minority individuals may also serve the interest of increasing access for minorities because they actively support inclusion and cultural differences. If Michigan's standards apply to mentoring and funding programs, institutions must prove that racial exclusivity is necessary in such programs. Institutions must be able to demonstrate that, even if they spend some more time and money, merely taking race into account as a strong plus factor along with other considerations will not achieve the compelling educational interest of increased minority access. This is difficult to prove under prevailing legal standards.

Unlike college and graduate school admissions, however, some minority mentoring and funding programs arguably do not implicate the Equal Protection Clause, and may not be subject to strict judicial scrutiny. This is the case when funding that is available only to minorities increases the total pool of fungible dollars available to all students. Funding increases the pool for all students when qualification for aid and amount of awards are determined without considering race. Then, after the recipients and their awards are determined without regard to race, fungible dollars that are limited to recipients of certain races are matched to those recipients.

Where it is demonstrated that targeted funding or mentoring programs are necessary to attract and retain minorities, equal protection may arguably be satisfied when multiple programs increase the pool of benefits for all students. Multiple programs may offer essentially the same benefits, with some programs being available only to minorities, others being available without regard to race, and all being administered together.

Finally, private entities that do not receive government funding are not subject to the Equal Protection Clause and do not trigger federal civil rights laws under certain conditions. Private foundations must administer their race-exclusive programs and select their program beneficiaries without significant involvement of the universities their beneficiaries attend, because nearly all universities do receive government funding and are subject to Equal Protection principles. Private foundations also should avoid imposing contract-like conditions to the retention of funding by recipients in order to avoid triggering civil rights laws that prohibit private, as well as public, racially discriminatory contracting. Some private foundations make awards on an annual basis,

²⁷ Grutter, at 336-37.

rather than subjecting multi-year awards to performance conditions.²⁸ The Gates Foundation is a good example.

Former Justice O'Connor's majority opinion in the Michigan law school case admonishes the U.S. higher education community and all of society to solve the problem of the continuing racial discrimination before too much more time ensues. Legal and political developments prove the wisdom of her admonition.

The Michigan decisions do not mandate consideration of race in admissions or invalidate state laws that prohibit consideration of race. Whether through opposition in political action, or prohibitions in future decisions of the courts, we cannot expect to have even our current arsenal available to fight the exclusion of racial minorities forever.

In its 2007 Seattle, Washington and Jefferson County, Kentucky school district cases, the Supreme Court considers whether race may be taken into account in assigning public school children to schools and strikes down two school districts' attempts to do so.²⁹ In these cases, the school districts used an individual's race alone or predominantly and inflexibly, to determine school assignment when necessary to ensure that the representation of minorities in the schools mirrored that in the community. The school districts also failed to show that their use of race would make a significant difference in the diversity of the schools. These cases demonstrate the truth of the axiom that bad facts make bad law. Chief Justice Roberts and Justices Alito, Scalia and Thomas indicate that the Court will strictly limit the application of its Michigan law school decision, which allows appropriate consideration of race as one of many factors in higher education admissions. In his concurring opinion, Justice Kennedy offers some hope that the Michigan decision will not be overly narrowly construed. Justice Kennedy joins the majority in striking down the practices of the Seattle and Jefferson County school districts, but he notes that, under different facts, schools may be able to satisfy strict scrutiny and consider race in contexts beyond that of graduate school and undergraduate admissions.

The political arena is also challenging. Ward Connerly has successfully championed voter referenda that prohibit public institutions from considering race in admissions and

²⁸ See the Department of Education's 1994 guidance and 1996 update on financial aid, Nondiscrimination in Federally Assisted Programs; Title VI of the Civil Rights Act of 1964; Notice, Federal Register, vol. 59, no. 36 (Wed., Feb. 23, 1994); and July 30, 1996 update letter at <http://www.ed.gov/ocr/docs/dearcol.html> (distinguishing race exclusive aid that increases the pool of available financial resources and is permissible from race exclusive aid that is discriminatory in its application and effect and is not permissible); 42 U.S.C. 1981 (proscribing private as well as public racial discrimination in the making and enforcement of contracts); 42 U.S.C. 185(3)(proscribing private as well as public conspiracies to intentionally discriminate on the basis of race by interfering with civil rights created by other laws); Doe v. Dept. of Health & Human Services, No. C-97-91 (S.D. TX, Feb. 14, 1997)(Texas A&M University and Howard Hughes Medical Institute settled the case before these issues were decided); Runyon v. McCrary, 427 U.S. 160 (1976). Careful program analysis and design are necessary to avoid the applicability of contract and conspiracy arguments and to successfully defend private programs from attack.

²⁹ Parents Involved In Community Schools v. Seattle School District No. 1 et al., Slip op. No. 05-908 (June 28, 2007), 551 U.S. ____ (2007) (also deciding Meredith, Custodial Parent and Next Friend of McDonald v. Jefferson County Bd. of Ed. et al., No. 05-915).

other contexts in California, Washington state, and—so painfully and ironically this year—in Michigan. To ward off such initiatives, Florida has an executive order that imposes essentially the same prohibition.³⁰ Mr. Connerly has targeted Arizona, Colorado, Missouri, and Oklahoma on his agenda for voter referenda in November 2008 and is exploring initiatives in Nebraska and South Dakota.³¹

So, what can we do in this environment to increase minorities' access to higher education and careers in science and technology fields?

First, it is incumbent on all institutions of higher education to define their educational mission to include both providing the best education to students and serving the nation. Our leadership and faculties must emphasize the need for a broadly diverse student body to achieve that mission. Each institution should determine whether it has achieved all aspects of broad diversity. If the institution has not achieved the racial aspect of diversity, the institution should take note of this fact, state the mission-critical need to achieve racial diversity within the context of broad diversity, and commit to do so. The national need for increasing access to undergraduate and graduate programs in science and technology fields by racial minorities is clear in the data I have already presented.

Then, there are a number of approaches to pursue concurrently.

We can make targeted outreach efforts to inform and encourage minorities to pursue education and ultimately PhDs and careers in science and technology fields. We must inform and encourage individuals of all races to do so, but we may also target some efforts to minorities, particularly when we can demonstrate that more general efforts have failed to attract minorities.

We can offer programs such as the Florida Opportunity Scholars program at the University of Florida that open the higher education door to individuals who are first in their families to attend college and are from a low socio-economic background. University of Florida has brought nearly 800 such students to Gainesville over the first two years of the program and has a 96 percent retention rate. A high percentage of the participants are minorities.

Programs that depend on socio-economic background are very important. Highly selective institutions must pursue these programs, as well as other programs, however, for two reasons. It is important to seek economic and other diversity even within a particular racial group to undermine stereotyping. And demographics may not correlate race and socio-economic background in a manner that fully realizes the necessary diversity.³²

³⁰ Florida Executive Order, 99-281 (the "One Florida" Executive Order).

³¹ 4 *States Are New Targets for Bans on Affirmative-Action Preferences*, *The Chronicle of Higher Education*, April 23, 2007.

³² See William G. Bowen and Derek Bok, Princeton University Press (1998), *The Shape of the River: Long-term Consequences of Considering Race in College and University Admissions*, at 49 (concerning the relative numbers of Caucasians and African Americans in low socio-economic groups with "A" grade point averages and high test scores, based on demographic data).

In selecting participants for other types of programs, we might consider articulating multi-cultural experience and skills, rather than race per se, in our student and faculty selection criteria and in faculty job descriptions. We should flexibly design the rest of our selection criteria to appropriately maintain quality, while rejecting unnecessarily restrictive notions of qualifications. We must apply the same criteria to all candidates, but we may articulate criteria as flexibly and broadly as possible so that we may be free to analyze individual situations and consider less traditional backgrounds for highly capable graduate students and faculty.

To do this, we should ask candidates whether they have experienced stereotyping, foreclosed opportunities, or discrimination on any basis in their lives, and whether they have fought such injustices and opened opportunities for others. We should ask candidates whether their life's experiences have enabled them to develop multi-cultural skills that have enriched their research, teaching and mentoring, and if so, specifically how.

We can do this without considering race per se and while recognizing that individuals of any race may contribute to the multi-cultural skills and inclusive orientation that our institutions need to accomplish our educational missions. This may not be as direct and effective an approach as considering race as one of many factors. However, in a society where race still, unfortunately, influences life experiences and opportunities, focusing on a candidate's life experiences, barriers overcome, and multi-cultural skills will likely yield a more broadly diverse graduate student body and faculty and a more welcoming Academy for minorities, even without taking race per se into consideration.

Whatever we do, we must be vigilant and successful, for the stakes are too great.