Nos. 02-241, 02-516

IN THE

Supreme Court of the United States

BARBARA GRUTTER,

Petitioner,

v.

LEE BOLLINGER, *et al*.,

Respondent.

JENNIFER GRATZ AND PATRICK HAMACHER,

Petitioners,

v.

LEE BOLLINGER, *et al*.,

Respondents.

On Writs of Certiorari to the United States Court of Appeals for the Sixth Circuit

BRIEF OF *AMICI CURIAE* MASSACHUSETTS INSTITUTE OF TECHNOLOGY, LELAND STANFORD JUNIOR UNIVERSITY, E.I. DU PONT DE NEMOURS AND COMPANY, INTERNATIONAL BUSINESS MACHINES CORP., NATIONAL ACADEMY OF SCIENCES, NATIONAL ACADEMY OF ENGINEERING, NATIONAL ACTION COUNCIL FOR MINORITIES IN ENGINEERING, INC., IN SUPPORT OF RESPONDENTS

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QUESTIONS PRESENTED

Case No. 02-241

1. Does the University of Michigan Law School's use of racial preferences in student admissions violate the Equal Protection Clause of the Fourteenth Amendment, Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d), or 42 U.S.C. § 1981?

2. Should an appellate court required to apply strict scrutiny to governmental race-based preferences review *de novo* the district court's findings because the fact issues are "constitutional"?

Case No. 02-516

1. Does the University of Michigan's use of racial preferences in undergraduate admissions violate the Equal Protection Clause of the Fourteenth Amendment, Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d), or 42 U.S.C. § 1981?

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STATEMENT OF INTEREST[1]

Amici include two leading institutions of higher education in the fields of science and engineering, two of America's largest industrial companies, which are major employers of scientists and engineers, the National Academy of Sciences, the National Academy of Engineering, and the National Action Council for Minorities in Engineering, Inc. These parties submit this brief to address (1) the important role that diversity, including racial and ethnic diversity, plays in achieving the broad educational missions of institutions of higher education, with particular focus on the fields of science and engineering; and (2) why consideration of race and ethnic origin as one among many factors in recruiting and admission of students to selective programs in science and engineering is essential if the important goal of diversity is to be achieved.

A. MIT

The Massachusetts Institute of Technology was founded in 1861 by natural scientist William Barton Rogers to be a new kind of private educational institution relevant to an increasingly industrialized America. Rogers, who pioneered the development of the teaching laboratory, believed that professional competence is best fostered by focusing attention on real-world problems. He envisioned an institution that would exist for the betterment of humankind and would provide for "the intelligent guidance of enterprise and labor . . . step by step, with the advances of scientific and practical discovery."[2] In keeping with Rogers' vision, MIT

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[1] Counsel for all parties have filed standing consents with the Clerk of Court to the filing of *amicus* briefs by any party. Sup. Ct. R. 37.3. No counsel for a party in this case authored this brief in whole or in part, and no person or entity, other than *amicus* or its counsel, made a monetary contribution to this brief's preparation or submission. Sup. Ct. R. 37.6

[2] THE COMMITTEE OF ASSOCIATED INSTITUTIONS OF SCIENCE AND ARTS, OBJECTS AND PLAN OF AN INSTITUTION OF TECHNOLOGY 5 (2d ed. 1861).

remains committed to bringing "knowledge to bear on the world's great challenges."[3]

MIT enrolls over 10,000 undergraduate and graduate students, in 27 academic departments within five schools, with many interdepartmental programs, laboratories, and centers whose work extends beyond traditional departmental boundaries. Though the university is widely known for its strength in science, engineering, and technology, MIT also offers degrees in the humanities, business administration, city planning, and other fields. Its undergraduate admissions process is highly competitive, and the school receives applications from many more qualified students than it can accommodate. From the well-qualified applicants among this group, MIT seeks to identify individuals with creative talent and high motivation, whose achievements indicate that they not only will succeed at MIT, but also will contribute to the educational experience of all students at MIT and will likely contribute to the betterment of humankind in their careers.

In making this assessment, MIT does not and cannot rely on grades and test scores as the only factors in its admissions decisions. MIT regularly denies admission to individuals with very high grades and scores who lack the other distinctive qualities it seeks. MIT considers all aspects of each candidate's background, including racial and ethnic factors among many others, in the belief that such an individual assessment of each applicant within context is the best way to evaluate a candidate's talent and potential. In selecting the students who will be admitted, MIT does not use any quotas, targets, or mathematical formulas. The educational value MIT offers includes the "intellectual stimulation of a diverse campus community,"[4] and MIT

[3] *See* MIT's Mission Statement, *available at* http://web.mit.edu/facts/mission.html.

[4] *See id.*

believes that a diverse student body is essential to its mission. That mission is to serve the nation and prepare its graduates to address challenges in a diverse world that is increasingly driven by science, engineering and technology – creative fields that require effective collaboration among individuals of many races, national origins and backgrounds.

B. Stanford

The Leland Stanford Junior University was founded in 1891 by Leland and Jane Stanford, in memory of their son. In the words of Jane Stanford, the moving spirit of the founders was the "love of humanity and a desire to render the greatest possible service to mankind."[5] The founders conceived that "[t]he public at large, and not alone the comparatively few students who can attend the University, are the chief and ultimate beneficiaries of the foundation." The University's "chief object" was "the instruction of students with a view to producing leaders and educators in every field of science and industry." Consistent with that purpose, Stanford early on adopted inclusive admissions policies, including the admission of women, and, for many years, a policy of charging no tuition, to "keep[] open an avenue whereby the deserving and exceptional may rise through their own efforts from the lowest to the highest station in life."

Today, Stanford has almost 14,000 students, who are divided nearly equally between the undergraduate, and the graduate and professional schools, and study in virtually all areas of the liberal arts and sciences. Approximately 30 to 40% of undergraduate degrees and 45 to 50% of graduate degrees are awarded in the fields of engineering, earth sciences, and the natural sciences.

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[5]The quotations in this paragraph are from a 1902 speech by Jane Stanford, *quoted in* Gerhard Casper, Statement on Affirmative Action at Stanford University (Oct. 4, 1995), *available at* http://stanford.edu/dept/pres-provost/president/speeches/951004affaction.html.

Admission to Stanford is highly selective, and only students who are well-qualified for the challenges of its curriculum are admitted. In selecting among the well-qualified, Stanford engages in a highly individualized and subjective process that strives to consider each candidate as a complete person. It uses no quotas, targets, or mathematical formulas of any kind. In considering the full range of each candidate's background and accomplishments, Stanford is strongly of the view that race and national origin should no more be entirely ignored than that they should be regarded as dispositive. In context, these factors, among numerous others, may sometimes shed light on the critical questions of a candidate's ability to deal with adversity and make the most of the opportunities that the University offers. Sometimes, too, they may bear on what the candidate will bring to the educational experience of others in the academic community. In addition, Stanford remains highly attentive, as it has been for more than a century, to the roles that its graduates will play in the world. For many reasons, Stanford's mission of pursuing "the betterment of mankind" demands that it reach out to train leaders from all backgrounds and races, and this is equally true in the fields of science and engineering.

C. DuPont

DuPont is an industrial, science and engineering-based company that operates in 70 countries worldwide. It has 135 manufacturing plants and approximately 79,000 employees – half of whom work outside the United States. It was founded by E.I. du Pont in 1802 as a gunpowder manufacturer; a hundred years later, its focus shifted to global chemicals, materials, and energy. Today DuPont applies science to real-life problems to make life safer, more comfortable, and more efficient.

DuPont believes that diversity is one of its greatest assets and considers it a core value of the company. DuPont has found that the insights and cultural sensitivities of a diverse workforce lead to new customer bases and market opportunities by offering greater understanding of customers who, themselves, represent many races, cultures, countries and experiences. Its success in its third century of business is dependent on cultivating a workforce that understands the many needs that DuPont's products serve. DuPont is heavily dependent on American institutions of higher education to train the future generations of diverse scientists and engineers who are essential if DuPont is to fulfill its mission of recognizing and meeting real needs throughout the world.

D. IBM

With business in 164 countries worldwide, the International Business Machines Corporation ("IBM") is the world's largest information technology company, and also the world leader in business and technology services consulting, hardware, and I/T financing. IBM has a long history of embracing workforce diversity as a competitive strategy and continues to make diversity of all types a priority of its corporate culture. IBM has found workforce diversity to be a strategic imperative.

Business globalization and growing diversity in the United States means that IBM customers reflect a variety of racial, ethnic, and other backgrounds. It is an imperative for IBM to understand and relate to the values of its customers. A diverse workforce brings perspectives and ideas that a homogenous workforce might miss. IBM's success is a direct result of its diverse and talented workforce. Moreover, a diverse workforce enables IBM to attract and retain employees that better serve the needs of its customers. For these reasons, IBM has found that diversity is a business imperative.

IBM depends upon American institutions of higher education to train the scientists and engineers whom it employs, and its ability to identify and hire well-qualified candidates to meet its needs is critical to its success. IBM relies on these institutions to provide a diverse pool of technical talent. IBM believes that precluding selective private and public universities from considering race as one of many factors in the admissions process will decrease the availability of minority scientists and engineers, and will impede the ability of America's businesses to maintain the diverse workforce necessary to meet the needs of an increasingly diverse and global customer base.

E. National Academy of Sciences; National Academy of Engineering

The National Academy of Sciences ("NAS") and the National Academy of Engineering ("NAE") are part of an umbrella organization of non-profit honorific national societies that work outside the framework of government to ensure independent advice on matters of science, technology and medicine. Since their inception, the National Academies have been called upon many times by the federal government to inquire into and report upon scientific issues of great moment. They have advised the Army and the Navy on science-related defense issues, served as key scientific advisers throughout the history of the US space program, and coordinated development of new national science standards for kindergarten through grade 12, along with many other projects.

NAS was created by an act of Congress in 1863, with a mission to "investigate, examine, experiment, and report upon any subject of science or art" "whenever called upon by any department or agency of the government." Today it has 2,280 members from 31 scientific disciplines and 39 foreign countries. NAS publishes a scholarly journal, *Proceedings of the National Academy of Sciences*, organizes symposia and convenes meetings on issues of national importance and urgency, and participates in the Committee on International Security and Arms Control and the Committee on Human Rights.

NAE was founded in 1964 and operates under the charter of the National Academy of Sciences. NAE has over 2,000 peer-elected members and foreign associates – senior professionals in business, academia, and government. These leaders provide guidance for over 100 projects each year that address issues related to engineering, technology, and quality of life. In 1999, NAE began a "Diversity in Engineering" initiative whose mission is to increase the diversity of the U.S. engineering workforce by developing a strong domestic talent pool. In addressing this goal, NAE has sought to act as a facilitator, organizer, and catalyst for change by gathering stakeholders, convening summits, and establishing taskforces. NAE believes that encouraging and sustaining a diverse population of engineers is one of the major challenges facing the profession today.

F. National Action Council for Minorities in Engineering, Inc.

The National Action Council for Minorities in Engineering, Inc. ("NACME"), was established in 1974 by a group of concerned business leaders to develop strategies for increasing the participation of under-represented minorities[6] in engineering, technology, and math and science-based careers. Since 1974, NACME has provided leadership and support for the national effort to increase the representation of successful African Americans, Native Americans, and Latinos in these fields. NACME is the nation's largest private source of scholarships for minorities in engineering. Since 1980, more than 17,000 students (nearly 15 percent of all minority engineering graduates) have received NACME support. NACME also conducts research and analyzes educational trends in engineering enrollment, degree completion, and workforce participation; advances policies and practices that support the development of a diverse corps of world-class technology professionals; and delivers a range of professional development programs to educators and

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[6] For convenience, *amici* use the term "minorities" to include African Americans, Hispanics, and Native Americans.

practitioners to ensure that students receive the quality learning and work experiences they need.

Leadership in the global economy depends upon an ever growing, more diverse cadre of world-class engineers, scientists, and technologists. At present, minorities make up only ten percent of engineering majors, even though they make up one third of the college-age population.[7] NACME believes that consideration of all factors, including race and national origin, in the admissions process is critical to fostering a diverse technical workforce. Moreover, it finds that over-emphasis on standardized test scores poses a special danger to this goal. Misuse of standardized tests – though intended for good – has benefited those already advantaged in the college admission process, while preserving barriers to students from groups historically under-participating in higher education. As growth in the minority population continues to outpace that of the non-minority population, there exists a critical talent pool from which to draw many of tomorrow's technology leaders. NACME believes that it is in America's collective interest to examine candidates for university admission in such a way as to maximize our ability to identify these potential future participants in the engineering and technology enterprise.

[7] JOHN BROOKS SLAUGHTER & DARYL E. CHUBIN, NACME, ENGINEERING, AND "GENERATION NEXT," *presented at the Pan-Organizational Summit on the U.S. Science and Engineering Workforce, Government-University-Industry-Research-Roundtable, Washington, D.C., Nov. 11-12 2002*.

ARGUMENT

I. The Educational Benefits Of Achieving A Diverse Population Of Students In The Fields Of Science And Engineering Are Compelling

MIT and Stanford share the views of other colleges and universities, public and private, about the need for diversity in teaching the humanities and liberal arts and in professional schools. *See* Br. of Harvard Univ., *et al.*. Likewise, DuPont and IBM, as major international corporations, concur with other such businesses concerning the general need for diversity in education in order to prepare future business and technical leaders to deal in a shrinking and diverse world. *See* Br. of 38 Leading American Businesses.

But *Amici* chose to file this brief, instead of joining another, more general one, in order to make a complementary but additional point that is sometimes overlooked. *Amici* hope to dispel the view that diversity in science and engineering education is any less important than in the humanities and liberal arts. *Amici* assert that diversity (broadly defined and including racial and ethnic diversity) is in fact absolutely essential to the advancement of science and engineering – in part for the same reasons that it is important for higher education generally, but also for a host of other reasons peculiarly related to these fields, and to their critical world role. And minorities are even more under-represented in science and engineering fields than in others.[8]

A. Many Justifications Commonly Offered For A Broadly Diverse Student Body Are No Less Applicable To Study In The Areas Of Science And Engineering

Much of what students learn in college comes from experiences studying, living, and working with other

[8] *See* NATIONAL SCIENCE FOUNDATION, 1 SCIENCE AND ENGINEERING INDICATORS 2002 3-13 (2002).

students, faculty, and administrators in an academic community that extends beyond the classroom.[9] This is true in all disciplines, including science and engineering. For that reason, in the spirit of Justice Powell's opinion in *Regents of the University of California v. Bakke*, 438 U.S. 265 (1978), many academic institutions, including Stanford and MIT, regard a diverse student body – broadly defined to include consideration of race, national origin, and gender as well as other demographic characteristics such as geographic background and socioeconomic disadvantage – to be an important aspect of the education they provide their students, and believe that such diversity greatly enhances the experience of all students.

A diverse academic community stimulates critical, reflective, and complex thinking, enhancing students' problem-solving abilities.[10] Moreover, racial and ethnic diversity in higher education significantly contributes to students' ability to live and work together, and to communicate across racial boundaries – skills of great importance in our increasingly heterogeneous world.[11] The

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[9] MIT's students pay substantial tuition for the full academic experience on campus, even though MIT has recently decided to offer the substantive content of most of its courses free of charge over the internet in its OpenCourseWare program, *available at* http://ocw.mit.edu/index.html. *See also* http://ocw.mit.edu/global/faq.html#FAQ17; WILLIAM G. BOWEN & DEREK BOK, THE SHAPE OF THE RIVER: LONG TERM CONSEQUENCES OF CONSIDERING RACE IN COLLEGE AND UNIVERSITY ADMISSIONS 24 (2d ed. 2000).

[10] *See* ANTHONY LISING ANTONIO ET AL., THE EFFECTS OF RACIAL DIVERSITY ON COGNITIVE COMPLEXITY IN COLLEGE STUDENTS (2003), *available at* http://www.stanford.edu/group/diversity (experiment with 357 college students indicated correlation between exposure to racial diversity in group discussion and more complex thought processes); T.K. BIKSON & S.A. LAW, RAND REPORT ON GLOBAL PREPAREDNESS AND HUMAN RESOURCES: COLLEGE AND CORPORATE PERSPECTIVES 15-19 (1994) (conclusion in text based on case studies of 16 corporations and 16 academic institutions).

[11] *See* Note, *An Evidentiary Framework for Diversity As a Compelling Interest in Higher Education*, 109 HARV. L. REV. 1357, 1373 (1996)

ability to work effectively and live harmoniously with diverse individuals is significantly more likely to be acquired in multi-cultural and multi-racial academic settings.[12] As one MIT graduate, Kofi A. Annan (SM 1972 (management)), put it:

> I would hope that in the education we give to the young – because we are preparing the leaders of the twenty-first century, they are our future – they will come to understand that the world today is an interdependent world, a global village. No one . . . can afford to think in purely local terms. If you do, you are going to be a loser down the line.[13]

B. In A Number Of Critical Respects, The Importance Of Diversity Is Heightened In The Fields Of Science And Engineering

(discussing ALEXANDER W. ASTIN, WHAT MATTERS IN COLLEGE?: FOUR YEARS REVISITED 429 (1993), a study of 25,000 students at 217 institutions who entered college in 1985, which concluded that racial and ethnic diversity teaches students to get along with people of different races and enriches the academic experience with a greater diversity of perspectives); SHAPE OF THE RIVER, *supra* note 9, at 267 (concluding from study of 30,000 former students of a wide range of selective colleges that both white and black respondents "felt that their undergraduate experience made a significant contribution to their ability to work with and get along well with members of other races"), *id*. at 267-68 (concluding from study of 27,000 students attending a wide range of selective colleges that racial diversity "increase[s] the mutual understanding of whites and minority students, enhancing their ability to live and work together successfully").

[12] *See* BIKSON, *supra* note 10, at 15-19; Patricia Gurin et al., *Diversity and Higher Education: Theory and Impact on Educational Outcomes*, 72 HARVARD EDUC. REV. 330, 330-36 (2002) (concluding based on data from University of Michigan and the Cooperative Institutional Research Program, which collectively surveyed 12,965 students from 185 institutions, that interaction with diverse peers significantly enhances the education of all students).

[13] CLARENCE G. WILLIAMS, TECHNOLOGY AND THE DREAM: REFLECTIONS ON THE BLACK EXPERIENCE AT MIT, 1941-1999 512 (2001).

1. Collaboration with diverse individuals is a critical part of science and engineering

The advancement of science has become an increasingly collaborative enterprise,[14] and science and engineering have increasingly become global enterprises that cannot be limited by boundaries, backgrounds, races or cultures. "There is no national science just as there is no national multiplication table."[15] "The common laws of nature cross political boundaries, and the international movement of people and knowledge made science global long before 'globalization' became a label for the increasing interconnections among the world's economies."[16]

As the United States becomes both more racially and ethnically diverse, and increasingly connected with the other nations and peoples of the world, the need for scientists and engineers to work with individuals of other races and ethnicities becomes an inescapable reality.[17] Consequently,

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[14]*See* THE EVOLVING MIT CAMPUS: STUDENT LIFE AND LEARNING, *available at* http://web.mit.edu/evolving/student. html and THE EVOLVING MIT CAMPUS: SHAPING THE FUTURE, *available at* http://web.mit.edu/evolving/shaping.html (discussing MIT's "reinvented academic village," with buildings designed solely to "inspire teamwork, communication, and collaboration at all levels of campus life"); STANFORD UNIVERSITY, SCHOOL OF ENGINEERING, 2000-2001 ANNUAL REPORT, *available at* http://soe.stanford.edu/AR00-01/letter_dean.html ("Collaboration helps us leverage our resources and fosters the atmosphere of bold thinking for which the school is world renowned.").

[15]Anton Chekhov, *quoted in* 1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 3-27.

[16]1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 3-27 to 3-29; MASSACHUSETTS INSTITUTE OF TECHNOLOGY, IN THE PUBLIC INTEREST: REPORT OF THE AD HOC FACULTY COMMITTEE ON ACCESS TO AND DISCLOSURE OF SCIENTIFIC INFORMATION 15 (2002) ("MIT REPORT OF THE AD HOC FACULTY COMMITTEE") ("competence in science and technology has grown throughout the world so that access to research and knowledge outside the United States is critical to our own progress").

[17]*See* MIT REPORT OF THE AD HOC FACULTY COMMITTEE, *supra* note 16, at i-ii, 1-6; 1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 3-27 to 3-31, 5-24 to 5-26, 5-37 to 5-38, 5-43 to 5-49; http://www.mit.

the National Science Foundation's 1997-to-2003 strategic plan requires the agency "to strive for a diverse, globally oriented workforce of scientists and engineers."[18] Collaboration, both nationally and internationally, with people of other races, cultures and ethnic backgrounds, has increased significantly[19] and is of vital importance.[20]

2. Diversity leads to increased creativity, productivity, and success in the science and engineering fields

Because science and engineering are inherently creative professions, ideas and innovations in these fields are affected by the life experiences of the people involved in their creation.[21] Diverse work teams create better and more innovative products and ideas than homogeneous teams.[22]

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edu/newsoffice/nr/2002/publicinterest.html. *See also* SHAPE OF THE RIVER, *supra* note 9, at 223.

[18] *See* NATIONAL SCIENCE FOUNDATION, WOMEN, MINORITIES AND PERSONS WITH DISABILITIES IN SCIENCE AND ENGINEERING: 2000 1 (2000).

[19] International scientific collaboration has increased significantly in the last two decades, as measured by numbers of articles co-authored across national borders, due to: (1) advances in information technology; (2) economic growth; (3) the growing scale, cost, and complexity of scientific research; (4) new political ties following the end of the cold war; and (5) the advanced education of students outside their native countries. *See* 1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 5-43 to 5-44.

[20] *See id*. at 3-27 to 3-28 (The United States "gains from new knowledge discovered abroad and from increases in foreign economic development. U.S. industry also increasingly relies on R&D performed abroad."); *id*. at 2-36 ("The United States needs to devise effective forms of collaboration and information exchange to benefit from, and link to, the expanding scientific capabilities of other countries and regions.").

[21] *See* William A. Wulf, *Diversity in Engineering*, 28 THE BRIDGE, No. 4, Winter 1998 (NAE).

[22] *See* Neal Lane, *Increasing Diversity in the Engineering Workforce*, 29 The Bridge, No. 2, Summer 1999; Charlan J. Nemeth, *Differential*

Indeed, multifaceted diversity in a company, including racial and ethnic, as well as gender[23] and other kinds of diversity, "consistently correlates to superior corporate performance."[24] As William Wulf, President of the National Academy of Engineering, noted in 1998, there is "a real economic cost" that flows from an absence of racial and cultural diversity in the field of engineering:

> [T]he range of design options considered in a team lacking diversity will be smaller. . . . [T]he constraints on the design will not be properly interpreted. . . . [T]he product that serves a broader international customer base, or a segment of this nation's melting pot, or our handicapped, may not be found. . . . [T]he most elegant solution may never be pursued. . . . [This cost] is measured in design options not considered, in needs unsatisfied and hence unfulfilled. It is measured in 'might have beens,' and those kinds of costs are very hard to measure. That doesn't change the fact that they are very real and very important.[25]

3. Diversity within science and engineering is vital to this country's economic growth

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Contributions of Majority and Minority Influence, 93 PSYCH. REV. 23, 23-32 (1986).

[23]It is worth noting in passing that the issue of gender diversity is also important in the fields of science and engineering, an issue that was the subject of a conference held at MIT on January 23, 2001. *See, e.g.*, http://www.mit.edu/newsoffice/nr/2001/gender.html; http://www.stanford.edu/dept/legal/Worddocs/mitconf.pdf.

[24]Helen Lippman, *Variety is the spice of a great workforce*, BUS. AND HEALTH ARCHIVE, May 1, 2000 (discussing 1998 American Management Association survey of 1,100 companies).

[25]Wulf, *supra* note 21. *See also* Charles O. Holliday, Jr., *DuPont Celebrates its Employees Transforming a Science Company through Diversity*, *available at* http://www.mcca.com/site/data/magazine/coverstory/DuPont1102.htm

"[T]he national and world economies, as well as our national security, increasingly are driven by science, engineering and technology."[26] These fields increase productivity and are the sources of discoveries and inventions that enhance everyone's well-being. For decades, the United States has enjoyed a leadership role in the development and implementation of cutting-edge research and technology. As a result, this country has benefited many times over by its investment in science and engineering research in industry, universities, and government laboratories. It is no exaggeration to say that "[n]ational security, the health of our nation, and the strength of our economy depend heavily on the advancement of science and technology."[27]

Only a well-educated workforce comprised of people who have learned to work productively and creatively with individuals from a multitude of races and backgrounds can maintain America's leadership and competitiveness in the increasingly diverse and interconnected world economy. The increasing racial and ethnic diversity of our population

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[26]MIT REPORT OF THE AD HOC FACULTY COMMITTEE, *supra* note 16, at 1-6. The National Science Foundation ("NSF") has found that "scientists and engineers contribute enormously to technological innovation and economic growth," far exceeding in economic impact the less than 5% of the U.S. civilian workforce that they represent. Scientists and engineers, even those with only bachelor's degrees, spend a significant portion of their time doing research and development. 1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 3-4, 3-10 to 3-11. Technology "is increasingly recognized as a key determinant of economic growth by most nations. . . ." *Id*. at 5-44. Consequently, the demand for scientists and engineers is projected to significantly exceed that of other occupations this decade. *Id*. at 3-27. The NSF thus has concluded that "[s]cience is a global enterprise [and has been so] long before 'globalization' [and that the] nation's international economic competitiveness . . . depends on the U.S. labor force's innovation and productivity." *Id*. at 3-27 to 3-28.

[27]MIT REPORT OF THE AD HOC FACULTY COMMITTEE, *supra* note 16, at 15.

magnifies the importance of educating more minority scientists and engineers.

Demographic studies make this fact undeniable. Over the next 30 years, the numbers of minorities in this country will grow from their current number (approximately one-fourth of the population) to constitute over one-third of the U.S. population, while the white population will decrease.[28] African Americans, Hispanics and Native Americans already constitute 30% of the college age population today, and by 2025, the National Science Foundation estimates that they will comprise 38% of the college age population.[29] It is anticipated that the minority population will actually surpass the non-minority population shortly after 2050.[30]

While their representation in the population is substantial and increasing, African-Americans, Hispanics, and Native Americans are currently significantly under-represented in the study and practice of science and engineering.[31] Of the approximately 18% of all bachelor's degrees that have

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[28] *See* U.S. DEPARTMENT OF COMMERCE, MINORITY BUSINESS DEVELOPMENT AGENCY, MINORITY POPULATION GROWTH: 1995 TO 2050 1 (1999); WOMEN, MINORITIES AND PERSONS WITH DISABILITIES IN SCIENCE AND ENGINEERING, *supra* note 18, at 1.

[29] *See* NATIONAL SCIENCE FOUNDATION, 2 SCIENCE AND ENGINEERING INDICATORS 2002 Table 2-2 (2002) (Appendix Tables).

[30] U.S. CENSUS BUREAU, DYNAMIC DIVERSITY: PROJECTED CHANGES IN U.S. RACE AND ETHNIC COMPOSITION 1995 TO 2050 1 (1999); U.S. DEPARTMENT OF COMMERCE, *supra* note 28, at 3. Indeed, in California – from which Stanford admits 40% of its students – under-represented minorities constituted more than 55% of the public school population in 2001-2002. *See* CALIFORNIA DEPARTMENT OF EDUCATION, EDUCATIONAL DEMOGRAPHICS UNIT, *available at* http://data1.cde.ca.gov/dataquest/Cbeds1.asp?Enroll=on&PctBlack=on&PctAm=on&PctAsian=on&PctFil=onPctHisp=on&PctPac=on&PctWhite=on&PctMult=on&Grads=on&cChoice+StatProfl&cYear=2001-02&cLevel=State&submit1=Submit.

[31] *See, e.g.*, 1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 3-15, 5-29 to 5-30; WOMEN, MINORITIES AND PERSONS WITH DISABILITIES, *supra* note 18, at 19-21.

historically been earned in the natural and physical sciences, mathematics, and engineering fields,[32] these minority groups, who make up 30% of the college population, together account for only 13%.[33] Unsurprisingly, the low representation of these groups in science and engineering academic programs has led to disproportionately low numbers of minorities in science and engineering occupations.[34] As minority representation in the population steadily increases, their underrepresentation in science and engineering fields becomes ever more consequential to the ability of American businesses to meet the demands of the marketplace.[35]

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[32]*See* WOMEN, MINORITIES AND PERSONS WITH DISABILITIES, *supra* note 18, at 19; 2 SCIENCE AND ENGINEERING INDICATORS, *supra* note 29, at Table 2-17.

[33]*See* 2 SCIENCE AND ENGINEERING INDICATORS, *supra* note 29, at Table 2-17; SLAUGHTER & CHUBIN, *supra* note 7 (noting that engineering institutions have only graduated 116,000 minority engineers since 1971 and that such institutions would need to graduate more than 250,000 minority engineers in the coming decade to reflect the ethnic and racial composition of the general population); P.B. CAMPBELL ET AL., UPPING THE NUMBERS: USING RESEARCH-BASED DECISION MAKING TO INCREASE DIVERSITY IN THE QUANTITATIVE DISCIPLINES – A REPORT COMMISSIONED BY THE GE FUND 2 (2002) (same).

[34]1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 3-15 (stating that "Blacks, Hispanics, and American Indians as a group constituted 24 percent of the U.S. population but only 7 percent of the total [science and engineering] workforce in 1999"); *see also* WOMEN, MINORITIES AND PERSONS WITH DISABILITIES, *supra* note 18, at 52 (noting that African-Americans and Hispanics were each about 3%, and Native Americans were 0.3%, of the country's scientists and engineers in 1997).

[35]*See* 1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 3-27 ("During the 2000-2010 period, employment in [science and engineering] occupations is expected to increase about three times faster than the rate for all occupations."); *see also* Bordonaro, M., *et al*., *Land of Plenty: Diversity as America's Competitive Edge in Science, Engineering, and Technology*, REPORT OF THE CONGRESSIONAL COMMISSION ON THE ADVANCEMENT OF WOMEN AND MINORITIES IN SCIENCE, ENGINEERING, AND TECHNOLOGY DEVELOPMENT, OPPORTUNITIES IN SCIENCE AND ENGINEERING (2000) (noting that, in some areas, particularly in computer

To the extent that the need for technology leadership cannot be met by American business, such leadership will shift to countries with higher "research capacity, scientific output, and innovative capacity."[36] Enrollment of students in science and engineering programs in other countries is high and growing relative to the United States.[37] The American pool of science and engineering students and researchers must be deepened by cultivating the scientific and technical talents of all its citizens, not just those groups that have traditionally worked in science, technology, and engineering fields.[38]

4. American businesses operating in the areas of science and engineering depend on institutions of higher education to produce a diverse pool of scientists and engineers

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and information technology, business leaders are warning of a critical shortage in skilled domestic workers that is threatening their ability to compete in the global marketplace); SHIRLEY ANN JACKSON, THE QUIET CRISIS: FALLING SHORT IN PRODUCING AMERICAN SCIENTIFIC AND TECHNICAL TALENT (Building Engineering and Science Talent, 2002), *available at* http://bestworkforce.org (noting that minority underrepresentation in science and engineering fields is problematic in light of demographic shift and increasing need for scientists and engineers).

[36] *See* 1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 2-36 (The current shift in science and engineering degrees earned within and without the United States "may eventually translate into a corresponding shift in research capacity, scientific output and innovative capacity.").

[37] *See* 1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 2-36 to 2-43 (discussing the proportional shift of science and engineering degrees earned from the United States to other countries – the number of such degrees earned in the U.S. has remained stable or declined in the 1990's, while the number of degrees earned in Asia and Europe has *increased*).

[38] *See* Gary S. May & Daryl E. Chubin, *A Retrospective on Undergraduate Engineering Success for Underrepresented Minority Students*, 92 J. OF ENG'G EDUC., Jan. 2003, at 1-13; *see also* 1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 2-3 ("These trends offer a challenge to the United States to educate students who have been traditionally underrepresented in [science and engineering].").

In seeking to increase the racial and ethnic diversity of their science and engineering programs, selective private universities, such as MIT and Stanford, as well as public ones, define their educational missions broadly to include service of the nation to meet the great challenges of the times. Thus, they are motivated in part by the needs of the important professions and occupations in which their students will find employment.[39] Employers of scientists and engineers seek diverse candidates, and they rely on colleges and universities to provide them with employees who possess the skills necessary to succeed in today's global and collaborative scientific and technological environment.

The business *amici* illustrate this need. DuPont and IBM believe that having a racially and ethnically diverse workforce is critical to their strength and success. "From Dupont's perspective, to continue to be globally competitive our company must have an employee base that is as diverse as the customers who buy our products, the shareholders who buy our stock, the vendors who supply us with goods and services, and the communities in which we operate."[40] Likewise, diversifying its workforce is part of IBM's "competitive strategy," which "has become more important than ever in the face of today's changing demographics and the rapid globalization of business."[41] Not only are diverse

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[39] *See, e.g.,* Derek Bok, *The Uncertain Future of Race-Sensitive Admissions* (forthcoming article) (manuscript at 3-13), *available at* http://www.nacua.org/documents/Unceratin_Future_of_Race_Sensitive_Admissions_Revised.pdf.

[40] Holliday, *supra* note 25 (article written about DuPont by its Chairman and CEO); *see also* DUPONT: DIVERSE AND GLOBAL, *available at* http://www1.dupont.com/dupontglobal/corp/careers/working_diversity.html (stating that DuPont's diverse employees "lead to new market opportunities by offering greater understanding of our customers who, themselves, represent many races, cultures, countries and experiences").

[41] IBM – DIVERSITY AS A "STRATEGIC IMPERATIVE," *available at* http://www.diversityatwork.com/articles/IBM-Diversity.htm; TOGETHER: AT IBM, DIVERSITY IS JUST GOOD BUSINESS, *available at* http://www.ibm.com/news/ls/2000/01/diversity_intro.phtml.

work teams more innovative and creative, but they actually are proven to "yield better business solutions – and better bottom-line results."[42] These companies, and countless others like them, therefore support the race-conscious admissions processes of selective private and public schools like MIT and Stanford.

II. Race-Conscious Recruiting And Selection Processes Are Essential To Achieve Racial Diversity At Selective Colleges And Universities, Especially In The Fields Of Science And Engineering

A. Selective Universities, Such As Stanford And MIT, Consider Race As One Of Many Factors In Their Admissions Processes

For many reasons, MIT, Stanford, and most other competitive universities have long concluded that neither test scores, grades, nor any other single indicator offers a simple solution to the complex question of who should be admitted from a large pool of qualified applicants. While such indicators provide some measure of ability and/or performance within a particular frame of reference, standing alone they provide a poor basis for making admissions decisions. Overwhelming empirical evidence supported by over a century of scientific research unrelated to concerns over racial diversity indicates that a university's complex educational goals and institutional mission cannot be achieved solely by relying on objective criteria such as standardized test scores.[43] This research, including studies

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[42] Holliday, *supra* note 25; *see also* Lippman, *supra* note 24 (discussing survey results indicating that diversity "consistently correlates to superior corporate performance").

[43] Indeed, such reliance would violate the educational and psychological testing professions' standards. *See* AMERICAN EDUCATION RESEARCH ASSOCIATION & AMERICAN PSYCHOLOGICAL ASSOCIATION, NATIONAL COUNCIL FOR MEASUREMENT IN EDUCATION, STANDARDS FOR EDUCATIONAL AND PSYCHOLOGICAL TESTS (1999).

by the National Research Council,[44] has revealed that the use of standardized-test scores as the sole measure of merit is scientifically indefensible and that the claim that a higher score should guarantee one student admission over another is not justifiable on empirical grounds.[45] Thus, selective private colleges and universities, as well as many public ones, generally seek to advance their objectives by employing admissions processes that take into account a multitude of individual factors.

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[44]The National Research Council's work in the area of testing began during the First World War, when the National Academy of Sciences prepared a comprehensive study of the results of the Army testing program. More recent studies include: ABILITY TESTING: USES, CONSEQUENCES, AND CONTROVERSIES (1982); ABILITY TESTING OF HANDICAPPED PEOPLE: DILEMMA FOR GOVERNMENT, SCIENCE, AND THE PUBLIC (1982); FAIRNESS IN EMPLOYMENT TESTING (1989); PERFORMANCE ASSESSMENT FOR THE WORKPLACE (1991); LEE CRONBACH, A VALEDICTORY: REFLECTIONS ON 60 YEARS IN EDUCATIONAL TESTING (1995); EDUCATING ONE AND ALL (1997); HIGH STAKES: TESTING FOR TRACKING, PROMOTION, AND GRADUATION (1999); UNCOMMON MEASURES (1999); TESTING, TEACHING, AND LEARNING (1999); EMBEDDING QUESTIONS (1999); GRADING THE NATION'S REPORT CARD (1999); KNOWING WHAT STUDENTS KNOW (2001); SCIENTIFIC RESEARCH IN EDUCATION (2002); EVALUATING AND IMPROVING UNDERGRADUATE TEACHING IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (2003).

[45]*See* NATIONAL RESEARCH COUNCIL, NATIONAL ACADEMY PRESS, MYTHS AND TRADEOFFS: THE ROLE OF TESTS IN UNDERGRADUATE ADMISSIONS 17-24, 30 (1999) ("MYTHS AND TRADEOFFS") (concluding, *inter alia*, that (i) "the claim that a higher [test] score should guarantee one student preference over another is not justifiable"; (ii) standardized tests should be used only as part of a comprehensive program of screening, selection, and admissions because they "were not designed to provide information about all of the factors that influence success in college," and were not "designed to make fine distinctions at any point on their scales"; (iii) tests "are most useful . . . for sorting an applicant pool into broad categories: those who are quite likely to succeed academically at a particular institution [and] those who are quite unlikely to do so . . ."; and (iv) "because of the gap between majority and minority students' test scores, a greater proportion of minorities are rejected despite their capacity to succeed").

While no two admissions processes are precisely identical, many institutions utilize a highly individualized and subjective process similar to those employed by MIT and Stanford. Such processes are very different from the percentage plans used by Texas, California, and Florida, which condition admission on a single criterion, and which, in any event, are utterly useless to national, selective universities. Omitting many specifics of procedure, sequence, and terminology in which they differ, MIT and Stanford have in common (with each other and many other institutions) the following elements:

Both MIT and Stanford confine in-depth consideration to candidates likely to have strong prospects for academic success at these institutions by first setting a high threshold level of intellectual ability and achievement. Both schools discern this required minimum level of qualification from a number of indicators, which include grades and test scores and do not include race. These are the students who, based on these indicators, demonstrate a high level of qualification and the ability to succeed academically.

Of the large pool of capable candidates, MIT and Stanford have the capacity to admit only a small fraction.[46] Defining qualification of this capable pool in much broader terms than just grades and test scores, and rejecting many candidates who have very high scores but lack other important qualities, MIT and Stanford employ a subjective process to consider each candidate's full range of accomplishments, experiences, and potential. Most fundamentally, in addition to academic achievement and intellectual vitality, experienced admissions officers in both schools search for indicators of a candidate's talent, creativity, problem-solving orientation, dedication, and determination. These qualities and others are evaluated in the context of a candidate's experiences, including culture,

[46] Stanford admitted approximately 13% and MIT approximately 16% of applicants for the 2002 freshman class.

advantages enjoyed, disadvantages overcome, potential realized, "distance traveled," and all other relevant information.

Race, national origin, and ethnicity, along with other considerations, are sometimes relevant in this assessment of an individual because they can provide a social and cultural context in which to understand an individual's accomplishments and life experience. They allow a candidate's achievements to be viewed through the lens of the culture and community in which they were realized.[47] Arbitrary elimination of race or national origin from the many factors that create the context in which an individual's talent and motivation can be understood would compromise the integrity of the process and would impair the ability of MIT and Stanford to identify the most promising applicants – that is those applicants who would profit most from and contribute most to an MIT or Stanford education.

Additionally, this individualized assessment of each candidate is guided by critical considerations relating to the universities' missions. First, both MIT and Stanford define their missions broadly to embrace the education of their student bodies and service to the nation, by, as Jane Stanford expressed it, "render[ing] the greatest possible service to mankind," and, as MIT Founder William Barton Rogers put it, "secur[ing] . . . great public benefits." Thus, they train future leaders for work in critical areas, including – primarily, for MIT, and importantly, for Stanford – science and engineering. Neither MIT nor Stanford makes admission decisions to compensate for past wrongs. Instead, they seek diversity in part because in order for these science

[47]Thus, to take a real life example, the design and construction of a solar-powered chili roaster by an applicant to meet the need of his community of migrant farm workers in the Texas panhandle to cook chilis for lunch in the fields, may tell as much about his creative engineering drive and motivation to be of service, as a national science medal does for another applicant.

and technology leaders to develop products and services to improve the lives of people in our diverse world, they must be trained in a heterogeneous environment and be responsive to the needs of each segment of the population. Leaders of science and engineering industry, including DuPont and IBM, confirm what is obvious from the census data – that the global competitiveness of U.S. industry, and the health of the national and world economies, depend on increasing the number of qualified minority engineers and scientists. MIT and Stanford thus believe that in order to most effectively advance their broader educational purposes, it is essential to be cognizant of many of an applicant's personal factors, including race and national origin.

Second, MIT and Stanford also pay attention to diversity read broadly, in the make-up of the academic community because such diversity provides important educational benefits. Both universities recognize that much learning goes on between and among students, faculty, and administrators, often outside the classroom, and that the learning experience for all students is enhanced by the presence of students offering different cultures, life experiences, and areas of accomplishment. We must not pretend that racial discrimination against minorities is no longer an issue in the United States. Although one's race does not dictate one's views – and this is part of what diversity on campus teaches – race, ethnicity, and national origin do contribute to one's experiences and opportunities in life, adding relevant perspectives.[48]

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[48] A university's determination and pursuit of its educational mission has significant First Amendment implications. *Bakke*, 438 U.S. at 312 ("Academic freedom, though not a specifically enumerated constitutional right, long has been viewed as a special concern of the First Amendment."); *see also Regents of the Univ. of Mich. v. Ewing*, 474 U.S. 214, 226 (1985) (expressing the Court's "reluctance to trench on the prerogatives of state and local educational institutions and [its] responsibility to safeguard their academic freedom"); *Keyishian v. Bd. of*

B. Minorities Would Be Even More Under-Represented In The Fields Of Science And Engineering If Race And National Origin Were Not Considered In The Admissions Process

In the selection process used by MIT and Stanford, which first identifies a group of well-qualified and highly capable applicants and then admits a much smaller number from among them, based on broad evaluation of each individual, consideration of race along with many other factors in making the final decisions is both necessary and entirely appropriate.[49] To require otherwise would both impair their ability to identify the most promising candidates and produce a less diverse educational environment.

Science and engineering are demanding fields that require a significant measure of pre-college preparation in science

Regents, 385 U.S. 589, 603 (1967) ("The vigilant protection of constitutional freedoms is nowhere more vital than in the community of American schools.") (quoting *Shelton v. Tucker*, 364 U.S. 479, 487 (1960)). And "[t]he freedom of a university to make its own judgments as to education includes the selection of its student body." *Bakke*, 438 U.S. at 312. *See also Sweezy v. New Hampshire*, 354 U.S. 234, 263 (1957) (Frankfurter, J., concurring) (noting "the four essential freedoms of a university -- to determine for itself on academic grounds who may teach, what may be taught, how it shall be taught, and who may be admitted to study"); *Ewing*, 474 U.S. at 226 n.12 (counting "[d]iscretion to determine, on academic grounds, who may be admitted to study" among the essential freedoms of a university) (quoting *Bakke*).

[49]The suggestion of some that the concern for diversity would be better or more justly served by focusing instead on economic diversity, or disadvantage, is unsupportable on two levels. First, economic position does not offer any sort of a useful proxy for race or ethnic origin, and thus does not offer a racially neutral means of achieving the goal of racial or cultural diversity. Simply put, in the population of students from low socio-economic groups who also have high enough test scores to qualify for consideration by highly selective schools, white students outnumber African-American students six-to-one. *See* SHAPE OF THE RIVER, *supra* note 9, at 51. Second, the great majority of successful minority candidates come from middle and upper middle class backgrounds. *See, e.g., id.* at 271.

and mathematics, and an atmosphere that nurtures such professional aspirations. It is a shameful but true fact that minorities tend disproportionately to attend lower quality schools, where both the encouragement and the opportunity to prepare oneself for these areas of study are less accessible.[50] Also, the current, predominantly non-minority make-up of the science and engineering professions means that minorities have few role models and mentors to help guide them to study and pursue careers in these fields.[51] In addition, nationally, African-Americans have a 50% lower likelihood than Caucasians of graduating in the top 10% of their high school class, and have a 40% lower likelihood of having an A average.[52] And, according to the College Board, on the SAT test, minorities not only score on average roughly 10% below the mean of all test takers,[53] but they also constitute a disproportionately small segment of those scoring in the top quartile on those tests. Among all test takers in 2002, scores of 700 or higher were achieved by roughly 5% of those taking the verbal, and 6% of those taking the math portion of the test; for minorities, those

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[50] *See* 1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 1-22 to 1-30.

[51] *See id.* at 5-29 to 5-30 (noting "the importance of role models and mentoring to student success in mathematics, science, and engineering, especially for women and minorities" but stating that these groups are under-represented on college campuses, in science and engineering Ph.D programs, and the science and engineering labor market); WILLIAMS, *supra* note 13, at 774-75 (discussing study at MIT noting need for minority faculty due to harmful effects of lack of minority faculty and mentors in guiding minority students).

[52] SHAPE OF THE RIVER, *supra* note 9, at 272 (citing STEPHEN THERNSTROM & ABIGAIL THERNSTROM, AMERICAN IN BLACK AND WHITE: ONE NATION INDIVISIBLE 402 (1997)).

[53] For the more than 1.2 million SAT test takers in 2002, the average scores were 505 verbal and 513 math; for the more than 218,000 minorities (including African-Americans and Hispanics) who took the test, the averages were 439 verbal and 440 math. Statistics provided by The College Board, 2002 Staff Data Research Software.

respective percentages are around one percent – or fewer than 750 African Americans and 1500 Hispanics nationwide. Scores above 600 were achieved by 21% of those taking the verbal, and 24% of those taking the math; for African Americans the corresponding percentage is just over 5% on both tests, and for Hispanics, it is about 9% on the verbal and almost 10% on the math.[54] For these reasons, the pool of minority students who have high enough scores and grades to be seriously considered on a more individualized basis for admission to selective science and engineering programs is disproportionately small.

MIT's and Stanford's ultimate selection of students for admission, from the large group of applicants initially determined to be well qualified and highly capable, is not based only on grades and test scores. If it were, minorities would be even more significantly under-represented than they already are in the fields of science and engineering.[55] And this would be profoundly unfair to the individuals

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[54]*Id.* There is good evidence that the "stereotype effect" – the fear of doing something that would confirm a negative stereotype – is at least one reason for the lower SAT test scores for non-Asian minorities. *See* Claude M. Steele, *A Threat in the Air: How Stereotypes Shape Intellectual Identity and Performance,* 52 AM. PSYCHOLOGIST 613, 613-19 (1997); Claude M. Steele & J. Aronson, *Stereotype Threat and the Intellectual Test Performance of African Americans*, 69 J. OF PERSONALITY & SOCIAL PSYCHOL. 797, 797-811 (1995).

[55]Bowen and Bok report that, regardless of field of study, the overall numbers of black students on campus at highly selective colleges and professional schools would drop to less than 2% of all matriculants under a race-neutral standard, and would decrease further to less than 1% at the most selective schools of law and medicine. *See* SHAPE OF THE RIVER, *supra* note 9, at 281, 282. Given the highly selective nature of science and engineering admissions programs and the already low application and participation rates, these paltry numbers would be similar in those fields. *See also* William G. Bowen & Neil L. Rudenstine, *Race-Sensitive Admissions: Back to Basics*, THE CHRON. OF HIGHER EDUC., Feb. 7, 2003, at B7 (noting that both public and private universities would become significantly less diverse if they could not take race into account in admissions decisions, in part because every alternative category includes large numbers of competitive non-minorities).

affected and deprive the nation of talented graduates who reflect the diversity of America.[56]

C. The Use Of Race As One Of Many Factors In The Admissions Process Has Been Successful At Increasing The Diversity In Science And Engineering Academic Programs

By considering race as one of many factors in the admissions process,[57] MIT has been able to increase minority undergraduate enrollment in a gradual but steady manner – from less than 1% in 1968 to 8% in 1980, 15% in 1990, and 19% in 2000.[58] At Stanford, while diversity in the overall undergraduate student body has increased significantly during this period, undergraduate degrees from the School of Engineering for traditionally underrepresented minorities have increased only slightly. As Glenn C. Loury wrote in his forward to *Shape of the River*, race-conscious admissions "must continue if the gains are to be maintained, and . . . administrators at selective colleges and universities, acting as

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[56] Some contend that considering race in admissions must mean that a student whose admission was influenced by his or her race was less qualified than others in the pool. But that contention ignores the fact that these institutions make all admissions from the pool of candidates who are first determined to be well-qualified and highly capable. Once the first measure of qualification is met, the meaning of "qualified" expands to include consideration of the many attributes of each individual (such as athletic ability, musical talent, race, and others), in the context of the university's broader goals to train future leaders in an academic setting bringing together varied experiences and backgrounds.

[57] In addition to their consideration of race as a factor in their admissions processes, MIT and Stanford have undertaken outreach and bridging programs to enhance the prospects of enrolling a diverse group of students able to effectively pursue the demanding science and engineering curricula. These programs have the effect of identifying and expanding the talent-pool of those interested in and capable of pursuing and succeeding in demanding science and engineering undergraduate programs – including under-represented minorities.

[58] While African Americans comprised less than 1% of MIT's class of 1967-68, *see* WILLIAMS, *supra* note 13, at 16, the class of 2001-02 consisted of 6% African Americans.

just and responsible stewards, can do no less than stay the course."[59] Although progress has been made, the national demographics and limited pool of qualified minority candidates available to MIT and Stanford indicate that more, not less, is needed.

Moreover, the weight of the evidence and the experience of MIT and Stanford demonstrate that attendance at selective universities provides substantial benefits to all students.[60] Students from selective schools have many opportunities after graduation.[61] Graduation rates for both minority and majority students from MIT and Stanford, and from highly selective schools generally, are very high when compared with national averages and with minority graduation rates at less selective schools.[62] And most science and engineering graduates, including minority graduates, are finding jobs in their fields.[63] It has been the experience of MIT and

[59] Glenn C. Loury, *Foreword* to SHAPE OF THE RIVER, at xxi.

[60] *See* SHAPE OF THE RIVER, *supra* note 9, at 129-31.

[61] *See* SHAPE OF THE RIVER, *supra* note 9, at 129-31; Bowen & Rudenstine, *supra* note 55, at B7.

[62]

Six-Year Graduation Rates*

Race	MIT	Stanford	Highly Selective	Selective	Moderately Selective	Less Selective	All Institutions
Black	80.3%	89.8%	55.2%	38.6%	34.4%	29.9%	39.0%
Hispanic (Stanford/ Mexican American)	76.2%	88.5%	61.5%	41.8%	35.2%	29.4%	42.7%
Asian	95.3%	96.4%	73.2%	49.5%	41.3%	38.7%	60.2%
Native American	80.0%	79.3%	50.7%	28.1%	27.4%	27.1%	34.3%
White	94.5%	94.1%	68.5%	57.6%	45.3%	38.1%	57.0%

* The national data was collected by The Consortium for Student Retention Data Exchange ("CSRDE"). CSRDE was established in 1994 and has a current membership of 420 public and private colleges and universities from the USA, Canada and Ireland.

[63] *See* 1 SCIENCE AND ENGINEERING INDICATORS, *supra* note 8, at 3-6 (noting that science and engineering jobs increased by 159% between

Stanford, borne out by yield data, that candidates – both minority and non-minority – when given the choice between attending a highly selective school and a less selective one, overwhelmingly choose the more selective alternative.

Respectfully submitted,

1980 and 2000, representing 4.9% annual growth compared to 1.1% annual growth for the entire labor force).

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