

No. 11-345

**In The
Supreme Court of the United States**

ABIGAIL NOEL FISHER,
Petitioner,

v.

UNIVERSITY OF TEXAS AT AUSTIN ET AL.,
Respondent.

On Writ of Certiorari to the
United States Court of Appeals for the Fifth Circuit

**BRIEF OF THE AMERICAN EDUCATIONAL
RESEARCH ASSOCIATION ET AL.
AS *AMICI CURIAE*
IN SUPPORT OF RESPONDENTS**

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INTEREST OF *AMICI CURIAE*

Pursuant to Supreme Court Rule 37, the American Educational Research Association (AERA) et al. submit this brief as *amici curiae* in support of Respondents.¹ *Amici curiae* comprise several of the nation's leading research associations: the American Educational Research Association, the American Association for the Advancement of Science, the American Sociological Association, the American Statistical Association, the Association for the Study of Higher Education, the Law and Society Association, the Linguistic Society of America, and the National Academy of Engineering. Individual statements of interest are contained in Appendix A.

Amici curiae have a longstanding interest in the accurate presentation of research relevant to the important questions of law raised by this case. *Amici curiae* are also particularly concerned about the possible misapplication of research findings in this case and with the possibility that the Court might be influenced by the presentation of flawed research and unreliable findings, including potentially misleading analyses offered by Petitioner and her *amici curiae*.²

¹ All parties have filed with the Court their written consent to the filing of all *amicus curiae* briefs in this case. Pursuant to Supreme Court Rule 37.6, counsel for *amici curiae* certifies that this brief was not written in whole or in part by counsel for any party, and that no person or entity other than *amici curiae*, their members, or their counsel has made a monetary contribution to the preparation or submission of this brief.

² *Amicus curiae* briefs submitted on behalf of the Petitioner assert that student body diversity offers minimal positive effects and even causes harms. While unanimity may be rare in some bodies of scientific research, there is substantial agreement that the best available evidence, which is composed of studies em-

It is a well-accepted principle in science that the integrity of research relies not only on the validity and reliability of research but also on intellectual honesty in proposing, performing, and reporting research, and it is critical for the Court to have access to information that represents the best knowledge available at the time.

Accordingly, this brief provides summaries and citations to pertinent studies to assist the Court's understanding of the research evidence. (Copies and links to the cited articles and reports are available at <http://www.aera.net>.) This brief does not, however, attempt to provide a comprehensive review of the literature. Its focus is largely on the compelling interest prong of strict scrutiny. This brief should be read in conjunction with other *amicus curiae* briefs that summarize research findings addressing narrow tailoring and that support the constitutionality of the University of Texas at Austin's admissions policy.

SUMMARY OF ARGUMENT

Research on student body diversity has expanded since the Court's 2003 ruling in *Grutter v. Bollinger*. Building on a well-established body of literature, the new research underscores the University's compelling interest in diversity. First, research continues to show that student body diversity leads to important

ploying sound and reliable methodologies, solidly supports the University in this case. Appropriate sections and footnotes of this brief address weaknesses in the arguments of Petitioners' *amici*, which include incomplete analyses of the literature; critiques of well-established scientific methodologies; and reliance on studies that are outdated, inconsistent with more recent research, or unpublished (and not subject to rigorous peer review).

educational benefits. Among these benefits are improvements in intergroup contact and increased cross-racial interaction among students; reductions in prejudice; improvements in cognitive abilities, critical thinking skills, and self-confidence; greater civic engagement; and the enhancement of skills needed for professional development and leadership.

Second, research studies examining the harms associated with racial isolation and tokenism reinforce the University's interest in obtaining a diverse student body. Among the harms ameliorated by increased diversity are stereotyping, stereotype threat that compromises student achievement, microaggressions, and overt discrimination against minority students.

Third, research demonstrates that the purported harms to minority students associated with race-conscious admissions are inconsistent with the findings of sound research and lack a solid empirical basis. The claim that stigma increases under affirmative action programs and the claim that students suffer academic harms when their admissions credentials do not "match" their institutions find almost no support in the scientific literature. These claims are unsupported suppositions that numerous researchers have called into question, even though Petitioner and her *amici curiae* claim them to be fact.

Research also supports the conclusion that the University's race-conscious admissions policy is narrowly tailored to its diversity interest. As the *Grutter* Court made clear, critical mass is defined in relation to the educational benefits of diversity and not by a rigid numerical figure; consistent with the Court's prohibition on racial balancing, the research litera-

ture has not identified a fixed number or percentage to define critical mass. Race-conscious admissions remain essential because alternatives to holistic review, while helpful, do not provide adequate numbers of minority students necessary to attain a sufficiently diverse student body that can yield the educational benefits documented in the research literature.

ARGUMENT

I. EDUCATION RESEARCH REINFORCES THE COMPELLING GOVERNMENTAL INTEREST IN STUDENT BODY DIVERSITY

In *Grutter v. Bollinger*, this Court concluded that student body diversity is a compelling governmental interest that can justify the use of race-conscious admissions in higher education. 539 U.S. 306, 327-33 (2003). Recognizing that an institution’s diversity interest exists “not simply ‘to assure within its student body some specified percentage of a particular group,’” but “by reference to the educational benefits that diversity is designed to produce,” the *Grutter* Court relied on research findings demonstrating the substantial benefits of diversity. *Id.* at 329-30. Post-*Grutter* studies across a variety of disciplines and methodologies—including many that rely on recent advances in mathematical and statistical techniques—reinforce prior findings and have expanded scientific understanding of the mechanisms underlying diversity’s multiple benefits. Student body diversity, which is also known in the literature as “structural diversity” or “compositional diversity,” has been identified as the key to improving campus racial climates and to advancing the types of positive

cross-racial interactions that lead to reduced prejudice and improved academic learning.

The literature on student body diversity underscores the University's compelling interest in three ways: First, research findings continue to demonstrate that student body diversity has important educational benefits, and these benefits are "not theoretical but real." *Id.* at 330. Second, research studies examining the harms associated with racial isolation and tokenism reinforce the University's interest in obtaining a diverse student body in order to prevent these harms. Third, recent research demonstrates that the purported harms associated with diversity suggested by Petitioner and her *amici curiae* lack empirical support and do not undermine the University's compelling interest in diversity.

A. Research Studies Demonstrate That Student Body Diversity Leads to Significant Educational Benefits

Nearly a decade ago, the *Grutter* Court recognized a growing body of scientific research on diversity, concluding that "numerous studies show that student body diversity promotes learning outcomes, and 'better prepares students for an increasingly diverse workforce and society, and better prepares them as professionals.'" *Id.* (quoting Brief for American Educational Research Association et al. as *Amici Curiae*, at 3). The literature has expanded considerably since *Grutter*, and many of these studies not only find positive effects among all groups of students as a result of diversity, they find positive effects on white students that are particularly strong or far-reaching.

1. Student Body Diversity Promotes Cross-Racial Understanding and Reduces Prejudice

The *Grutter* Court recognized that student body diversity “promotes ‘cross-racial understanding,’ helps to break down racial stereotypes, and ‘enables [students] to better understand persons of different races.’” 539 U.S. at 330. Research continues to show that racially diverse educational settings are effective in reducing prejudice by promoting greater intergroup contact—both informally and in classroom settings—and encouraging friendships across group lines. See, e.g., Mitchell J. Chang, Alexander W. Astin & Dongbin Kim, *Cross-Racial Interaction Among Undergraduates: Some Consequences, Causes, and Patterns*, 45 Res. Higher Educ. 529 (2004); Gretchen E. Lopez, *Interethnic Contact, Curriculum, and Attitudes in the First Year of College*, 60 J. Soc. Issues 75 (2004); Victor B. Saenz, Hoi Ning Ngai & Sylvia Hurtado, *Factors Influencing Positive Interactions Across Race for African American, Asian American, Latino, and White College Students*, 48 Res. Higher Educ. 1 (2007).

For instance, a 2009 study by Denson and Chang found that cross-racial interactions had strong positive effects on racial and cultural engagement; thus students who attended institutions where students on the whole were more engaged with diversity from cross-racial interactions showed greater improvement in their knowledge of people of different races or cultures, as well as in their ability to get along with people of different races or cultures. Nida Denson & Mitchell J. Chang, *Racial Diversity Matters: The Impact of Diversity-Related Student*

Engagement and Institutional Context, 46 Am. Educ. Res. J. 322, 336 (2009).

The scientific literature in the area of intergroup contact and cross-racial interaction has become sufficiently extensive that “meta-analyses”—statistical analyses that synthesize relevant research from many separate studies and that draw overall conclusions based on the cumulative data and findings—are commonplace.³ A leading meta-analysis published in 2006 by Pettigrew and Tropp analyzed over 500 studies from a variety of educational, workplace, and informal settings, including college campuses, and reached the overarching conclusion that positive

³ Contrary to suggestions by Petitioner and her *amici curiae*, the positive effects of intergroup contact are widely accepted in the research community. Several *amici curiae* erroneously conclude that the intergroup contact hypothesis is “no longer accepted by any reputable social scientist,” and instead argue that intergroup contact increases stigma, conflict, and self-segregation on campuses. Brief of Abigail Thernstrom et al. as *Amici Curiae* in Support of Petitioner, at 10, 18-32. *Amici curiae* ignore the large body of literature inconsistent with their arguments and selectively cite findings—a number of which are outdated or isolated—or misinterpret other findings to reach unfounded conclusions. For instance, Thernstrom et al. rely heavily on a single essay, Robert D. Putnam, *E Pluribus Unum, Diversity and Community in the Twenty-first Century The 2006 Johan Skytte Prize Lecture*, 30 Scandinavian Pol. Stud. 144 (2007), in their attempt to contradict the large body of literature supporting intergroup contact theory. They stress Putnam’s findings that residential diversity in many local communities, fueled by immigration, can lead to short-term problems of social mistrust, but they ignore methodological limits to the study (such as omitting variables dealing with intergroup contact and with racial segregation), and fail to mention that none of the data are drawn from higher education settings. See Thomas F. Pettigrew & Linda R. Tropp, *When Groups Meet: The Dynamics of Intergroup Contact*, ch. 11 (2011).

intergroup contact reduces prejudice and that greater intergroup contact is associated with lower levels of prejudice. Thomas F. Pettigrew & Linda R. Tropp, *A Meta-Analytic Test of Intergroup Contact Theory*, 90 *J. Personality & Soc. Psychol.* 751, 766 (2006).

Pettigrew and Tropp's analysis also confirmed that the prejudice reduction associated with intergroup contact is further enhanced when one or more of Allport's optimal conditions for intergroup contact exist (equal status between groups in the situation, common goals, intergroup cooperation, and the support of authorities, law, or custom). *Id.* (citing conditions proposed in Gordon Allport, *The Nature of Prejudice* (1954), but also noting that Allport's optimal conditions are not required to produce reductions in prejudice). Pettigrew and Tropp also concluded that institutional support is "an especially important condition for facilitating positive contact effects"; the lesson here for colleges and universities is that they do more to reduce prejudice when they actively promote diversity and intergroup contact efforts in ways that are facilitated by race-conscious admissions. *Id.*; see also Thomas F. Pettigrew & Linda R. Tropp, *How Does Intergroup Contact Reduce Prejudice? Meta-analytic Test of Three Mediators*, 38 *Eur. J. Soc. Psychol.* 922 (2008) (subsequent meta-analyses showing that intergroup contact is especially effective in reducing prejudice because it diminishes anxiety and enhances empathy between groups).

Studies and meta-analyses focusing on friendships developed in diverse settings also reveal positive effects resulting from cross-racial inter-

action. In a 2008 study by Fischer examining how student body diversity fosters meaningful interactions and the development of relationships across racial lines, the data revealed that exposure to greater diversity results in more cross-group friendships by the end of the first year of college. Mary J. Fischer, *Does Campus Diversity Promote Friendship Diversity? A Look at Interracial Friendships in College*, 89 *Soc. Sci. Q.* 631 (2008). Moreover, the data suggest that campuses which create and maintain a high level of racial diversity in their student bodies will see an increased diversity of friendship networks for students from all racial backgrounds, with a particularly strong impact on the friendship networks of white students.

Similarly, a multi-year study with data from over 2,000 college students conducted by Levin et al. showed that greater cross-ethnic friendships early in college predicted lower intergroup anxiety and more positive interethnic attitudes by the end of college. Shana Levin, Colette van Laar & Jim Sidanius, *The Effects of Ingroup and Outgroup Friendship on Ethnic Attitudes in College: A Longitudinal Study*, 6 *Group Processes & Intergroup Rel.* 76 (2003). A subsequent meta-analysis by Davies et al. examined studies of friendships across groups and showed that cross-group friendships promote positive intergroup attitudes, and that time spent together and self-disclosure to individuals from other groups were strongly associated with improved attitudes. Kristin Davies, Linda R. Tropp, Arthur Aron, Thomas F. Pettigrew & Stephen C. Wright, *Cross-Group Friendships and Intergroup Attitudes: A Meta-Analytic Review*, 15 *Personality & Soc. Psychol. Rev.* 332 (2011). Accordingly, the authors recognized the

strength of institutional strategies which “foster meaningful interactions with outgroup members over time . . . to nurture greater empathy and closeness between members of different groups.” *Id.* at 342.

Cross-racial interaction also affects curricular and co-curricular diversity activities that lead to prejudice reduction. A 2009 meta-analysis testing whether participation in diversity-related activities during college reduces racial bias among undergraduate students found that they did, and that specific types of activities such as participating in a prejudice reduction workshop were even more effective when they also incorporated a cross-racial interaction component. Nida Denson, *Do Curricular and Cocurricular Diversity Activities Influence Racial Bias? A Meta-Analysis*, 79 *Rev. Educ. Res.* 805 (2009). Moreover, while diversity activities are effective in reducing racial bias for all groups of students, the study confirmed that white students benefit even more from diversity-related interventions. *Id.* at 824.

2. Student Body Diversity Leads to Educational Benefits such as Improvements in Cognitive Abilities, Critical Thinking, and Self-Confidence

As the *Grutter* Court recognized, a central benefit of student body diversity is that it “promotes learning outcomes.” 539 U.S. at 330. Research continues to document that learning is enhanced by diversity on campus and in the classroom. “Because of the persistent power of race to shape life experiences, racial and ethnic compositional diversity can create a rich and complex social and learning environment that can subsequently be applied as an educational tool to promote students’ learning and dev-

elopment.” Mitchell J. Chang, Nida Denson, Victor Saenz & Kimberly Misa, *The Educational Benefits of Sustaining Cross-Racial Interaction Among Undergraduates*, 77 J. Higher Educ. 430, 432 (2006).

A number of recent studies have shown that student body diversity fosters improvements in students’ cognitive skills—such as critical thinking and problem-solving—because students’ exposure to individuals different from themselves, as well as to the novel ideas and situations that such exposure brings, challenges their thinking and leads to cognitive growth. See, e.g., Anthony Lising Antonio, Mitchell J. Chang, Kenji Hakuta, David A. Kenny, Shana Levin & Jeffrey F. Milem, *Effects of Racial Diversity on Complex Thinking in College Students*, 15 Psychol. Sci. 507 (2004); Chang, Denson, Saenz & Misa, *supra*; Jiali Luo & David Jamieson-Drake, *A Retrospective Assessment of the Educational Benefits of Interaction Across Racial Boundaries*, 50 J.C. Student Dev. 67 (2009).

For example, a 2005 longitudinal study reported by Hurtado analyzed data from over 4,400 students at nine public universities and concluded that student interaction with diverse peers contributed in positive ways to student education by a student’s second year of college. Sylvia Hurtado, *The Next Generation of Diversity and Intergroup Relations Research*, 61 J. Soc. Issues 595 (2005). Among the positive effects were improvements in cognitive abilities (e.g., analytical problem-solving skills and complex thinking skills), socio-cognitive skills (e.g., cultural awareness and leadership), and democratic sensibilities (e.g., pluralistic orientation and the importance of civic contribution). *Id.* at 600-06. The study

specifically found that analytical problem-solving skills were positively related to the quality of the informal interactions with diverse peers, as were gains in students' "attributional complexity" (complex thinking skills). *Id.* Similarly, a 2005 study by Nelson Laird indicated that students with greater exposure to diversity are more likely to score higher on academic self-confidence, social agency (the belief in taking personal action to improve society), and dispositions toward critical thinking. Thomas F. Nelson Laird, *College Students' Experiences with Diversity and Their Effects on Academic Self-Confidence, Social Agency, and Disposition Toward Critical Thinking*, 46 Res. Higher Educ. 365 (2005).

These and similar findings are reinforced by a 2010 meta-analysis conducted by Bowman that analyzed twenty-three higher education studies focusing on diversity and cognitive skills, and concluded from this array of empirical evidence that college diversity experiences are significantly and positively related to cognitive development. Nicholas A. Bowman, *College Diversity Experiences and Cognitive Development: A Meta-Analysis*, 80 Rev. Educ. Res. 4, 20 (2010). Bowman's analysis concluded that interactions with racial diversity are more strongly linked with cognitive growth than are interactions with non-racial diversity, thus reinforcing the importance of fostering a student body that is racially diverse. *Id.* at 22.

3. Student Body Diversity Promotes Civic Engagement and Skills Needed for Professional Development and Leadership

This Court has "repeatedly acknowledged the overriding importance of preparing students for work and citizenship." 539 U.S. at 331. The University

shares this perspective, and central elements of its undergraduate educational mission are to prepare its students to be “leaders of the State of Texas” and to enable those students “to lead a multicultural workforce and to communicate policy to a diverse electorate.” Supp. Joint App. at SJA24a (University’s Proposal to Consider Race and Ethnicity in Admissions, June 25, 2004). Several post-*Grutter* studies have documented the positive relationships between diversity and a range of benefits that have long-term implications for civic engagement, professional growth, and the preparation of leaders for an increasingly diverse society. See, e.g., Hurtado, *supra*; Mark E. Engberg, *Educating the Workforce for the 21st Century: A Cross-Disciplinary Analysis of the Impact of the Undergraduate Experience on Students’ Development of a Pluralistic Orientation*, 48 Res. Higher Educ. 283 (2007); Patricia Gurin, Biren (Ratnesh) A. Nagda & Gretchen E. Lopez, *The Benefits of Diversity in Education for Democratic Citizenship*, 60 J. Soc. Issues 17 (2004).

Improvements in measures of civic engagement, including (1) civic attitudes toward democratic participation, (2) civic behaviors such as participating in community activities, and (3) intentions to participate in civic activities, have been documented in multiple studies. A 2011 meta-analysis by Bowman synthesized twenty-seven studies examining the effects of diversity on civic engagement and reached the conclusion that college diversity experiences are positively related to increased civic engagement and that “this relationship is significant for several types of civic outcomes (attitudes or skills, behaviors, and behavioral intentions) and several types of diversity experiences.” Nicholas A. Bowman, *Promoting Parti-*

icipation in a Diverse Democracy: A Meta-Analysis of College Diversity Experiences and Civic Engagement, 81 Rev. Educ. Res. 29, 46 (2011). Bowman’s analysis specifically found that racially diverse interpersonal interactions are even more effective at promoting civic engagement than structured diversity experiences such as course work and intergroup dialogues; consequently, the study concluded that “the civic benefits of racial diversity cannot be replaced by teaching about diversity abstractly in courses or workshops,” and highlighted the ongoing need for institutions to attain racially diverse student bodies and to facilitate meaningful interactions among students of different backgrounds. *Id.* at 49.

Among the other documented benefits of diversity are gains in “pluralistic orientation,” a measurement that has been tied to capacities for the types of thinking and social interaction that enable students to “engage in cooperative behaviors, manage controversial issues, and develop a high regard for others’ perspectives, beliefs, and backgrounds.” Mark E. Engberg & Sylvia Hurtado, *Developing Pluralistic Skills and Dispositions in College: Examining Racial/Ethnic Group Differences*, 82 J. Higher Educ. 416, 417 (2011). Building on earlier research, Engberg and Hurtado’s 2011 study confirmed across multiple racial and ethnic groups that students’ positive interactions with individuals of other races were associated with positive effects on their pluralistic orientation. *Id.* at 429. The authors also found that for white students in particular, higher levels of racial diversity in the student population led to increased interactions across race and ultimately to gains in pluralistic orientation. *Id.* at 435-36.

In addition to pluralistic orientation, leadership skills have long been recognized as key competencies for effective participation in a diverse workforce. For instance, a 2008 study by Jayakumar analyzed the relationship between white individuals' exposure to racial diversity during college and their post-college cross-cultural workforce competencies, including pluralistic orientation and leadership skills (as measured by leadership ability, public speaking, social self-confidence, and ability to discuss and negotiate controversial issues). Uma M. Jayakumar, *Can Higher Education Meet the Needs of an Increasingly Diverse and Global Society: Campus Diversity and Cross-Cultural Workforce Competencies*, 78 Harv. Educ. Rev. 615 (2008). The study concluded that for white students from both segregated and diverse pre-college neighborhoods, post-college leadership skills and the level of pluralistic orientation are significantly related to the degree of student body diversity and to the racial climate of institutions, as well as to the level of cross-racial interaction during college. *Id.* at 636-41. The study thus highlights the centrality of college exposure to diversity, suggesting that it can be more important than pre-college or post-college exposure in developing workplace competencies. Moreover, the results imply that positive cross-racial interaction in college has broad effects, since it stimulated positive outcomes for all white students, not only those from racially segregated neighborhoods. *Id.* at 641-42.

The long-term advantages of these types of benefits are underscored by recent literature showing that many of the benefits extend well beyond a student's undergraduate years. For instance, a 2011 study by Bowman et al. tracked students during col-

lege and for thirteen years after their graduation, and found that diversity experiences were positively related to personal growth, purpose in life, recognition of racism, and volunteering behavior among college graduates in their mid-30s. Nicholas A. Bowman, Jay W. Brandenberger, Patrick L. Hill & Daniel K. Lapsley, *The Long-Term Effects of College Diversity Experiences: Well-Being and Social Concerns 13 Years After Graduation*, 52 J.C. Student Dev. 729, 737 (2011).

4. Student Body Diversity Leads to Improved Classroom Environments

In addition to the educational benefits that accrue to students enrolled in colleges and universities with diverse student bodies, institutional benefits affecting the breadth of classroom discussions have been recognized by the Court and documented in post-*Grutter* research. *See Grutter*, 539 U.S. at 330 (“classroom discussion is livelier, more spirited, and simply more enlightening and interesting’ when the students have ‘the greatest possible variety of backgrounds”). These findings align with the University’s mission-driven goal that student experiences “must include *classroom* contact with peers of differing racial, ethnic, and cultural backgrounds.” Supp. Joint App. at SJA24a (University’s Proposal to Consider Race and Ethnicity in Admissions, June 25, 2004 (emphasis in original)).

For instance, a 2011 analysis of survey and focus group data from over 500 respondents at the University of Michigan documented how interactions among students in general—and in the classroom specifically—have contributed to the expected benefits of diversity in improving the overall educational

experience. Meera E. Deo, *The Promise of Grutter: Diverse Interactions at the University of Michigan Law School*, 17 Mich. J. Race & L. 63 (2011). The Deo study found that most respondents were engaged in positive interactions with students from different racial backgrounds, and that the data revealed three central themes: “a) greater structural diversity [i.e., diversity in the student body] leads to increased classroom diversity and improved learning; b) classroom diversity results in open minds and engaging classroom conversations; and c) more structural diversity leads to greater participation [by minority students] and less tokenism.” *Id.* at 97. The study concluded that more lively and engaging conversations occur when diversity discussions are included in the classroom, and improved learning occurs because abstract concepts are tied directly to concrete examples drawn from personal experience. *Id.* at 110-11; see also Richard Pitt & Josh Packard, *Activating Diversity: The Impact of Student Race on Contributions to Course Discussions*, 53 Soc. Q. 295, 312-13 (2012) (finding improved discussions and learning outcomes resulting from classroom diversity, where African American and white students added different personal experiences to discussion).⁴

⁴ Changes in the curriculum that are traceable directly to the student body diversity—and not simply to policies designed to fulfill institutional missions or goals—have also been documented in recent research. A 2012 study focusing on medical school education found that faculty, staff, and students at two state medical schools perceived that the individuals “driving the majority of the diversity discussion on campus are students themselves.” Jeffrey F. Milem et al., Arizona Medical Education Research Institute, *The Important Role that Diverse Students Play in Shaping the Medical School Curriculum* 3 (2012),

B. Research Studies Demonstrate the Harms Associated with Tokenism, Racial Isolation, and Stereotyping

The University's compelling interest in student body diversity is grounded not only in the educational value of attaining the positive effects of diversity but also in avoiding the negative effects of racial isolation and tokenism, since "diminishing the force of . . . stereotypes is both a crucial part of [an institution's] mission, and one that it cannot accomplish with only token numbers of minority students." *Grutter*, 539 U.S. at 333. The University has a clearly articulated interest "not to have large numbers of classes in which there are no students—or only a single student—of a given underrepresented race or ethnicity." Supp. Joint App. at SJA25a (University's Proposal to Consider Race and Ethnicity in Admissions, June 25, 2004). The University's holistic admissions policy was enacted in 2004 to address weaknesses in its race-neutral admissions policies, which had not alleviated the large number of classes and programs with only token numbers of minority students when race-conscious admissions were prohibited. Thus in 2002, when the University could not supplement its race-neutral admissions policy with race-conscious admissions, 90% of the small undergraduate classes (5 to 24 students) designed to encourage student participation contained either zero

available at <http://www.coe.arizona.edu/ameri>. The study further found that student-led learning opportunities, which typically took the form of optional lectures or roundtable discussions, addressed weaknesses in the curriculum and highlighted the need to incorporate diversity discussions into the formal curriculum. *Id.* at 3-4.

or one African American student, while 43% had zero or one Latino student. *Id.* at SJA25a-SJA26a. Moreover, among its graduate programs outside of Law, 77% of the University's 127 programs had zero or one African American student in 2002, while 45% had zero or one Latino student. *Id.* at SJA12a. The research literature continues to demonstrate that minority students in racially isolated educational settings are at risk of significant harms, including negative stereotyping, discrimination, and "stereotype threat" that can undermine their academic achievement. Thus the University's interest in securing student diversity is compelling at multiple levels—within the overall student body, within schools and majors, and within classrooms.

Isolation, subordination, and negative stereotyping are common problems that arise in a wide range of settings when minority numbers are especially low and the norms and behaviors of majority groups dominate. See Mischa Thompson & Denise Sekaquaptewa, *When Being Different is Detrimental: Solo Status and the Performance of Women and Racial Minorities*, 2 *Analyses Soc. Issues & Pub. Pol'y* 183 (2002); Rosabeth Moss Kanter, *Men and Women of the Corporation* (1977) (describing tokenism effects when the proportion of minorities is very low within an institution). Recent research "consistently calls attention to the isolation, alienation, and stereotyping with which [minority] students are often forced to contend." Shaun R. Harper & Sylvia Hurtado, *Nine Themes in Campus Racial Climates and Implications for Institutional Transformation*, *New Directions for Student Services*, Winter 2007, at 7, 12.

Problems of stereotyping that arise from race- and gender-based isolation pose serious problems, including fostering “stereotype threat,” a well-documented harm that occurs when individuals feel pressured because of the fear that their performance on a test or other task could confirm a negative stereotype about their group. The pressure manifests itself in anxiety and distraction that interfere with intellectual functioning. *See generally* Claude M. Steele, *Whistling Vivaldi: And Other Clues to How Stereotypes Affect Us* (2010). Numerous post-Grutter studies have documented how stereotype threat contributes to diminished academic performance among racial and ethnic minorities, as well as women in mathematics and science fields. *See, e.g.*, Christine R. Logel et al., *Unleashing Latent Ability: Implications of Stereotype Threat for College Admissions*, 47 *Educ. Psychol.* 42 (2012) (summarizing stereotype threat literature); Gregory M. Walton & Steven J. Spencer, *Latent Ability: Grades and Test Scores Systematically Underestimate the Intellectual Ability of Negatively Stereotyped Students*, 20 *Psychol. Sci.* 1132 (2009) (meta-analyses of recent studies). *See generally* Brief of Experimental Psychologists as *Amici Curiae* in Support of Respondents (summarizing literature and its relationship to admissions policies).

Research on minority students in racially isolated settings has also identified problems of overt discrimination and multiple forms of “microaggression,” including “the brief and commonplace daily verbal, behavioral, and environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative . . . slights and insults to the target person or group.” Derald Wing Sue, *Micro-*

aggressions in Everyday Life: Race, Gender, and Sexual Orientation 5 (2010); see, e.g., Janice McCabe, *Racial and Gender Microaggressions on a Predominantly-White Campus: Experiences of Black, Latina/o and White Undergraduates*, 16 *Race, Gender & Class* 133 (2009); William A. Smith, Man Hung & Jeremy D. Franklin, *Racial Battle Fatigue and the MisEducation of Black Men: Racial Microaggressions, Societal Problems, and Environmental Stress*, 80 *J. Negro Educ.* 63 (2011). For example, in a 2009 study drawing data from a large public university in the Midwest containing low percentages of minority students in the student body, McCabe found a variety of microaggressions in campus and classroom settings. African American men encountered stereotypes characterizing them as aggressive, threatening, and criminal, and they reported more frequent interactions with campus and local police compared to other students. McCabe, *supra*, at 139. African American women frequently reported problems within classroom settings, such as not being taken seriously in discussions or always being expected to represent their race, *id.* at 142-43, while Latino women commonly encountered stereotypes of foreignness and exoticism, often of a sexual nature, *id.* at 140-41. As a result, minority students consistently reported feeling isolated and not belonging to their campus community.

Recent data drawn from nearly 28,000 respondents at thirty-two higher education institutions from across the country, including Texas, show that, when campus diversity is low, the isolation of African American and Latino students exacerbates feelings of exclusion and reinforces stereotypes, microaggressions, and discrimination. Sylvia Hurtado &

Adriana Ruiz, UCLA Higher Educ. Research Inst., *The Climate for Underrepresented Groups and Diversity on Campus* (June 2012), available at <http://heri.ucla.edu/briefs/urmbrief.php>. Hurtado and Ruiz found that feelings of exclusion from campus events and activities, as well as offensive verbal comments and visual images, are more prevalent in low-diversity institutions among underrepresented minority students, with significant declines as the campus minority student enrollment increases. *Id.* at 2. For example, 55.4% of African American students in low-diversity institutions reported some level of exclusion from campus events and activities, while only 20.3% of African American students in high-diversity institutions reported feelings of exclusion. *Id.* at 2-3. Similarly, 67.2% of African American students in low-diversity institutions reported being the target of discriminatory verbal comments, compared to 37.5% in high-diversity institutions; 40.2% of African American students in low-diversity institutions had experiences with offensive visual images, compared to 16.4% in high-diversity institutions. *Id.*

Problems of tokenism, stereotyping, and micro-aggression have been shown to be commonplace in programs and fields that have low numbers of minorities or women (particularly women of color), especially in science, technology, engineering, and mathematics (STEM). *See, e.g.*, Mitchell J. Chang, M. Kevin Eagan, Monica H. Lin & Sylvia Hurtado, *Considering the Impact of Racial Stigmas and Science Identity: Persistence Among Biomedical and Behavioral Science Aspirants*, 82 *J. Higher Educ.* 564 (2011); Mitchell J. Chang, Oscar Cerna, June Han & Victor Saenz, *The Contradictory Roles of Institutional Status in Retaining Underrepresented Minori-*

ties in Biomedical and Behavioral Science Majors, 31 *Rev. Higher Educ.* 433 (2008); Sylvia Hurtado et al., *Predicting Transition and Adjustment to College: Biomedical and Behavioral Science Aspirants' and Minority Students' First Year Of College*, 48 *Res. Higher Educ.* 841 (2007).

Thus in a 2011 review of over 400 studies on racial and ethnic minorities in STEM fields, Museus et al. reported that researchers examining the role of campus climate in the experiences of minority students in STEM consistently found that those students report “chilly and hostile climates at both two- and four-year institutions and that those environments can be associated with feelings of discouragement.” Samuel D. Museus, Robert T. Palmer, Ryan J. Davis & Dina C. Maramba, *Racial and Ethnic Minority Students' Success in STEM Education*, 36 *ASHE Higher Educ. Rep.*, No. 6, at 1, 67 (2011). Moreover, several studies show that less supportive educational environments are tied to minority students' departure from STEM fields, *see id.*, while positive factors such as the racial and gender diversity of graduate students in STEM have been linked to persistence among women and minority students in STEM majors, *see* Amanda L. Griffith, *Persistence of Women and Minorities in STEM Field Majors: Is It School that Matters?*, 29 *Econ. Educ. Rev.* 911 (2010).

In a review of recent literature specifically focusing on minority women in the STEM fields, Ong et al. noted that many studies described the climate of undergraduate STEM programs as “chilly” to women of color and several studies “specifically demonstrated the gender *and* racial/ethnic bias that women of

color experience on a day-to-day basis as STEM majors,” placing them in a unique position of confronting multiple systems that they find oppressive. Maria Ong, Carol Wright, Lorelle L. Espinosa & Gary Orfield, *Inside the Double Bind: A Synthesis of Empirical Research on Undergraduate and Graduate Women of Color in Science, Technology, Engineering, and Mathematics*, 81 Harv. Educ. Rev. 172, 182 (2011) (emphasis in original). Numerous studies chronicle the problems of tokenism when a student is the lone woman of color in a science classroom or a laboratory, heightened by unwelcoming environments, *id.* at 183, and many of the problems become even more acute when students have entered graduate-level STEM programs that are even more isolating, *id.* at 192-93.

C. Claims that Minority Students are Harmed by Race-Conscious Admissions are Without a Strong Empirical Foundation

The University’s interest in student body diversity remains compelling, notwithstanding the contentions of Petitioner and her *amici curiae* that race-conscious admissions policies harm minority students and engender such high costs that they cannot be constitutionally justified. *See* Pet’s Br. at 41-42. These arguments receive the support of few researchers, and the bulk of the scant research supporting these claims has been published without peer review, has been widely criticized by peer scientists, and has been contradicted by better-designed and more recent research. Multiple studies confirm that purported problems of stigma due to race-conscious admissions and the educational harms resulting from the so-called “mismatch” of minority students

at selective institutions have not been established by the studies said to prove them and indeed are regularly contradicted by sounder and more widely accepted research.

Recent studies undercut the largely speculative arguments contending that minority students feel more stigmatized because of race-conscious admissions policies. A 2010 study by Bowen compared students enrolled in universities with race-conscious admissions policies with students enrolled in universities in states that had barred race-conscious admissions, and posed several questions focusing on both “internal stigma” (minority students’ own feelings of doubt or inferiority) and “external stigma” (non-minority students questioning of minority students’ abilities and qualifications). Deirdre M. Bowen, *Brilliant Disguise: An Empirical Analysis of a Social Experiment Banning Affirmative Action*, 85 Ind. L.J. 1197 (2010). Bowen found that approximately three-fourths of students in states that bar race-conscious admissions felt pressure to prove themselves because of their race, compared to fewer than half of the students who were in schools with race-conscious admissions; these results indicate that internal stigma was *lower* among students in schools with race-conscious admissions. *Id.* at 1223-24. Similarly, Bowen found that only about one-quarter of the students at schools with race-conscious admissions reported that non-minority students had questioned their qualifications, compared to nearly one-half of the students who were enrolled in states with bans. *Id.* at 1224-25. These findings indicate that external stigma, like internal stigma, was lower among those students in schools with race-conscious admissions.

Enhanced stigma also appears absent at the professional school level. A 2008 study focusing on elite law schools was conducted by Onwuachi-Willig, Houh, and Campbell, who examined stigma among students at seven public law schools, four of which employed race-conscious admissions and three of which did not. Angela Onwuachi-Willig, Emily Houh & Mary Campbell, *Cracking the Egg: Which Came First—Stigma or Affirmative Action?*, 96 Calif. L. Rev. 1299 (2008). The study found low levels of the “stigma of dependence” (internal stigma), and the little stigma that was reported was no more common in the four schools with race-conscious admissions than in the three schools without race-conscious admissions. *Id.* at 1332. Most students also reported no negative effects of external stigma, and there was no significant difference between student responses at the two groups of law schools. *Id.* at 1332-33.

Recent research also undermines the so-called mismatch hypothesis proposed by opponents of race-conscious admissions. This hypothesis predicts lower graduation rates for minority students who attend selective institutions because some of their admissions credentials, particularly standardized test scores, do not match their institution’s average. The claim is that these students will underperform academically and will have lower educational outcomes than they would have had in less selective institutions. Notwithstanding these assertions, many studies not only show that the mismatch hypothesis lacks sufficient support, they reveal effects that run in the opposite direction of the effects predicted by the mismatch hypothesis.

For instance, in a 2005 study of undergraduates that relied on multiple data sets (including two national longitudinal surveys) and several analytical methods, Alon and Tienda found that Latino and black students' probabilities of graduation were higher, rather than lower, at selective institutions compared to non-selective ones, a finding that controverts the mismatch hypothesis. Sigal Alon & Marta Tienda, *Assessing the "Mismatch" Hypothesis: Differences in College Graduation Rates by Institutional Selectivity*, 78 Soc. Educ. 294, 309 (2005).

A 2009 study conducted by Bowen et al. focusing on minority students who entered selective public institutions in 1999 yielded similar results, finding that "black male students who went to more selective institutions graduated at *higher*, not lower rates than black students in the same GPA interval who went to less selective institutions." William G. Bowen, Matthew W. Chingos & Michael S. McPherson, *Crossing the Finish Line: Completing College at America's Public Universities* 209 (2009) (emphasis in original). Bowen et al. obtained comparable results for Latino students: they found no evidence of mismatch and concluded that the positive relationship between graduation rates and institutional selectivity was even stronger for Latinos than for blacks. *Id.* at 214.

Similarly, a 2007 study by Fischer and Massey examining the educational outcomes of a 1999 cohort of college freshman attending twenty-eight selective colleges and universities found no evidence supporting the mismatch hypothesis with respect to first-year grades or dropout rates. Mary J. Fischer & Douglas S. Massey, *The Effects of Affirmative Action*

in *Higher Education*, 36 Soc. Sci. Res. 531 (2007). Instead, the study found that the effect of diversity-based admissions on first-semester grades “was *positive*, precisely opposite the direction predicted by the mismatch hypothesis” *id.* at 539 (emphasis in original), and there were no effects linking race-conscious admissions to higher dropout rates, finding instead that “the degree of an individual’s likely benefit from affirmative action is *negatively* related to the likelihood of leaving school,” *id.* at 541 (emphasis in original).

A Texas-specific study focusing on racial and ethnic minority students enrolled in various public universities underscores the earlier findings that are based on national data. The 2010 study by Cortes compared undergraduate graduation rates at Texas universities that were expected to be “better matched” for minority students and found that minority graduation rates at these institutions were lower than the graduation rates at institutions where students supposedly would be poorly matched and expected to underperform, thus contradicting the predicted effects of the mismatch hypothesis. Kalena E. Cortes, *Do Bans on Affirmative Action Hurt Minority Students? Evidence from the Texas Top 10% Plan*, 29 Econ. Educ. Rev. 1110 (2010).

Studies of purported mismatch in professional school settings also lack a solid empirical foundation. *Amici curiae* Sander and Taylor, relying largely on Sander’s work on law school education and recent unpublished work,⁵ have proposed that race-con-

⁵ *Amici curiae* Sander and Taylor cite Richard H. Sander, *A Systemic Analysis of Affirmative Action in American Law Schools*, 57 Stan. L. Rev. 367 (2004), subsequent replies by

scious admissions have harmed the academic performance of African American law students and have contributed to lower graduation rates and lower passage rates on bar examinations. See Brief Amici Curiae for Richard Sander and Stuart Taylor, Jr. in Support of Neither Party, at 8-10. Contemporaneous studies critiquing Professor Sander's 2004 article on law school mismatch, along with more recent analyses of the mismatch hypothesis, undermine these claims. See, e.g., Ian Ayres & Richard Brooks, *Does Affirmative Action Reduce the Number of Black Lawyers?*, 57 Stan. L. Rev. 1807 (2005); David L. Chambers, Timothy T. Clydesdale, William C. Kidder & Richard O. Lempert, *The Real Impact of Eliminating Affirmative Action in American Law Schools: An Empirical Critique of Richard Sander's Study*, 57 Stan. L. Rev. 1855 (2005); Daniel E. Ho, *Affirmative Action's Affirmative Actions: A Reply to Sander*, 114 Yale L.J. 2011 (2005); Jesse Rothstein & Albert H. Yoon, *Affirmative Action in Law School Admissions: What Do Racial Preferences Do?* 75 U. Chi. L. Rev. 649 (2008); see also Katherine Y. Barnes, *Is Affirmative Action Responsible for the Achievement Gap Between Black and White Law Students?: A Correction, A Lesson, and an Update*, 105 Nw. U. L. Rev. 791 (2011) (use of corrected data from author's 2007 critique of Sander do not alter the lack of support for the mismatch hypothesis, contrary to the claim in the Sander & Taylor *amicus* brief)).

Sander's statistical analyses and his prediction in 2004 that the elimination of race-conscious admissions would have resulted in a 7.9% increase in

Sander to critiques of his article, and several unpublished working papers.

the number of new African American lawyers have been subject to extensive methodological criticism. Among the problems identified in Sander's work are his reliance on old data that do not reflect recent trends; overestimation of African American application, admission, and enrollment numbers; serious weaknesses in his statistical methods and inferences; unsupported assumptions that favor the results he seeks to find; and flaws in his analysis of graduation rates and bar passage. *See* Chambers et al., *supra*, at 1859-91. Analyses of Sander's data have instead projected major declines, not increases, in the number of new African American lawyers resulting from the hypothetical elimination of race-conscious admissions, *see id.* at 1857 (estimating declines as high as between 30-40%), while other analyses employing different methods found neither predicted mismatch effects nor compelling evidence that affirmative action reduced the number of African American lawyers, *see* Ayres & Brooks, *supra*.

A 2011 analysis by Camilli and Welner of the law school mismatch literature (as well as K-12 and undergraduate literature) concludes that the base of research on law schools "fails to document a consistent and substantial negative mismatch effect." Gregory Camilli & Kevin G. Welner, *Is There a Mismatch Effect in Law School, Why Might It Arise, and What Would It Mean?*, 37 J.C. & U.L. 491, 521 (2011). Research from K-12 and undergraduate education suggests instead that "any negative match effects observed in law school are more likely due to the practices of law schools or unobserved (unmeasured) characteristics of students rather than the [mismatched] credentials." *Id.*

The stigma and mismatch arguments offered by Petitioner and her *amici curiae* ignore the wealth of data showing that minority students gain significant educational and economic benefits through their attendance at selective institutions—including higher graduation rates and increased earnings and labor force participation following graduation. The Court recognized these basic findings nearly ten years ago, *see Grutter*, 539 U.S. at 330 (citing William G. Bowen & Derek Bok, *The Shape of the River* (2000)), and findings from education and economic research continue to support this point. *See, e.g.*, Bowen et al., *Crossing the River, supra*, at 209-15 (African American and Latino students who attend public flagship universities are more likely to graduate than comparable students who attend less selective institutions); Tatiana Melguizo, *Quality Matters: Assessing the Impact of Attending More Selective Institutions on College Completion Rates of Minorities*, 49 Res. Higher Educ. 214 (2008) (selectivity of an institution attended has a positive and significant impact on college completion rates of minorities); Mario L. Small & Christopher Winship, *Black Students' Graduation from Elite Colleges: Institutional Characteristics and Between-Institution Differences*, 36 Soc. Sci. Res. 1257 (2007) (selectivity increases the probability of black students' graduation and helps black students more relative to white students); Mark C. Long, *Changes in the Returns to Education and College Quality*, 29 Econ. Educ. Rev. 338 (2010) (educational attainment and college quality raise earnings; larger increases in the effects of education on earnings and labor force participation for men, blacks, and Latinos); *see also* Richard O. Lempert, David L. Chambers & Terry K. Adams, *Michigan's Minority*

Graduates in Practice: The River Runs Through Law School, 25 Law & Soc. Inquiry 395 (2000) (finding rates of bar passage and of career success for minority graduates to be close to or indistinguishable from those of white graduates). These findings underscore the Court's prior determination that "universities . . . represent the training ground for a large number of our Nation's leaders," as well as the importance of the University's ensuring that "the path to leadership be visibly open to talented and qualified individuals of every race and ethnicity." *Grutter*, 539 U.S. at 332.

II. RESEARCH SUPPORTS UPHOLDING THE UNIVERSITY'S ADMISSIONS POLICY AS NARROWLY TAILORED

Education research further supports the University's argument that its holistic admissions policy is narrowly tailored to the compelling interest in student body diversity. Empirical findings addressing the narrow tailoring requirement are discussed in greater depth in other *amicus curiae* briefs, *see, e.g.*, Brief of American Social Science Researchers as *Amici Curiae* in Support of Respondents. In this brief the AERA et al. address only a few points of law and highlight just some of the relevant research, primarily in response to claims raised by Petitioner and her *amicus curiae*. The literature cited here indicates that the University's admissions policy is essential to help achieve its diversity interest, since race-neutral alternatives such as the University's top-ten-percent admissions policy are insufficient to attain the critical mass of minority students necessary to fully realize the benefits of diversity.

A. “Critical Mass” is Not a Fixed Number or Percentage and Must Be Assessed by the University in Evaluating the Educational Benefits of Diversity

Petitioner and her *amici curiae* criticize the University’s use of “critical mass” to justify its race-conscious admissions policy. As the *Grutter* Court made clear, critical mass does not correspond to a rigid numerical figure, but is “defined by reference to the educational benefits that diversity is designed to produce.” 539 U.S. at 330. Consistent with the Court’s prohibition on quotas and racial balancing, the research literature has not identified a fixed number or percentage to define critical mass, nor does the Court need such a figure in order to assess the constitutionality of the University’s policy. The determination of critical mass ultimately must take into account the University’s evaluation of the educational benefits that it seeks to achieve—consistent with an overall mission that includes training its graduates to be leaders of Texas’s diverse population—as well as the context in which the benefits are sought. The research literature has provided insights into some of the optimal conditions under which cross-racial interaction and diversity-related activities can lead to the benefits of diversity, *see supra* Part I.A, but the University has made an assessment of the educational benefits it has so far achieved and has determined that it has fallen short of attaining critical mass. Indeed, in many classes and other settings, the University’s minority numbers remain at token—or zero—levels.

Petitioner’s *amici curiae* Scholars of Economics and Statistics attempt to undermine the critical

mass concept by relying heavily on a single study, John R. Lott, J. Mark Ramseyer & Jeffrey Standen, *Peer Effects in Affirmative Action: Evidence from Law Student Performance*, 31 Int'l Rev. L. & Econ. 1 (2011). *Amici curiae* assert that increases in minority student numbers do not produce higher academic achievement by minority students. In addition to testing only a single, narrow educational outcome—law student grades—the reliability of the study's data and the representativeness of its samples are questionable. The Lott et al. study examines only two schools, both of which have atypically low African American and Latino enrollments, and their models do not incorporate other potential explanatory variables that could affect grades, such as the imposition of a mandatory grade curve or the skills tested on examinations. Remarkably, the authors attempt to draw conclusions on the effects of critical mass based on data from schools that lacked a critical mass of minority students and in which many classes had only token numbers of minority students. Notwithstanding these issues, *amici curiae* neglect to highlight the study's finding that increases at one school in the number of Asian Americans, who constituted a notably higher percentage of the population at the school (7% compared to 2% African American and 2% Latino), are associated with improvements in their grades. In any case, the study's findings do not negate the extensive body of evidence documenting the benefits that accrue as student bodies become more diverse.

B. Race-Conscious Admissions are Necessary to Complement the University's Percentage-Based Admissions Plan

Petitioner contends that the University's holistic admissions policy is unnecessary because sufficient minority student enrollments can be achieved through a race-neutral alternative: Texas's plan that guarantees admission to a state university to students finishing in the top ten percent of their high school graduating classes. This Court has already recognized several of the major limitations of percentage plans, having noted their inapplicability to graduate and professional school admissions and recognizing the barriers they impose to "conducting the individualized assessments necessary to assemble a student body that is not just racially diverse, but diverse along all the qualities valued by the university." *Grutter*, 539 U.S. at 340.

Recent research has also identified problems with percentage-based plans, which in Texas must rely on the state's demographic mix, including patterns of residential segregation in many areas of the state and their effects on secondary school enrollments.⁶ The empirical evidence shows that the percent plan has yielded sizable but not sufficient num-

⁶ Research studies have also demonstrated the limits of other forms of race-neutral alternatives, such as relying on socioeconomic status or parental income to admit students, which are not as effective as race-conscious admissions and could lead to reductions in the numbers of minority students in selective colleges and universities. See, e.g., Harry J. Holzer & David Neumark, *Affirmative Action: What Do We Know?*, 25 J. Pol'y Analysis & Mgmt. 463 (2006); Alan Krueger et al., *Race, Income and College in 25 Years: Evaluating Justice O'Connor's Conjecture*, 8 Am. L. & Econ. Rev. 282 (2006).

bers of racial and ethnic minority students. For example, a 2008 study by Long and Tienda examined administrative data to assess changes in admission and enrollment probabilities at state institutions and concluded that the percent plan is an ineffective proxy for race-conscious admissions. Mark C. Long & Marta Tienda, *Winners and Losers: Changes in Texas University Admissions Post-Hopwood*, 30 *Educ. Eval. & Pol'y Analysis* 255 (2008).

Similarly, a 2010 study analyzing both changes in the size of high school graduation cohorts and institutional carrying capacity showed that the ten-percent plan did not restore Latino and African American representation at the University of Texas at Austin or at Texas A&M University, even after four years. Angel Harris & Marta Tienda, *Minority Higher Education Pipeline: Consequences of Changes in College Admissions Policy in Texas*, 627 *Annals Am. Acad. Pol. & Soc. Sci.* 60 (2010). Harris and Tienda also found that black and Latino application rates to the University and to Texas A&M declined after race-conscious admissions were banned; although rates rebounded after the percent plan went into effect, they still fell below levels that existed prior to the ban. *Id.* at 65; *see also* Jessica S. Howell, *Assessing the Impact of Eliminating Affirmative Action in Higher Education*, 28 *J. Labor Econ.* 113, 116 (2010) (predictive models show declines in minority enrollments if percentage-based admissions were to be applied nationwide).

Nonetheless, the state has chosen to retain the top-ten-percent plan, and the University has chosen to implement its holistic admissions policy in tandem with the percent plan. The efficacy of University's

race-conscious policy is borne out by the numbers, which are fully documented in the record. Since its implementation, the University's race-conscious plan, in conjunction with the percentage plan, has yielded increases in minority admissions and enrollments that significantly exceed the numbers attainable under the percentage plan alone.

CONCLUSION

For the foregoing reasons, the judgment of the Court of Appeals upholding the constitutionality of the University of Texas at Austin's race-conscious admissions policy should be affirmed.

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APPENDIX

APPENDIX A

STATEMENTS OF INTEREST AND
ORGANIZATIONAL DESCRIPTIONS
OF *AMICI CURIAE*

Founded in 1916, the **American Educational Research Association (AERA)** is the national scientific association for more than 25,000 members engaged in research on education. AERA aims to advance knowledge about education, encourage scholarly inquiry related to education, and promote the use of research to improve education and serve the public good. The scientists and scholars in this interdisciplinary field consider fundamental problems that relate to education across the life span and contexts of learning. Researchers consider all aspects of education from the processes of teaching and learning, curriculum development, and the social organization of schools and educational institutions to the effects of education on cognitive and social capacity, human development, workforce preparedness, and health and at-risk behaviors. AERA embraces the role of improving the nation's education research capacity by promoting application of scientific standards, and by providing training programs, research and mentoring fellowships, and seminars on advanced methodological and statistical techniques. AERA publishes six highly ranked, peer reviewed journals, issues Standards for Reporting on Empirical Social Science Research in AERA Publications, promotes the highest standards for research integrity through its Code of Ethics, and produces (in collaboration with the American Psychological Association and the National Council on Measurement in

Education) the *Standards for Educational and Psychological Testing*. AERA has 12 research divisions, including in Postsecondary Education and Measurement and Research Methodology.

The **American Association for the Advancement of Science (AAAS)**, founded in 1848, is the world's largest general scientific society, representing 261 affiliated societies and academies of science, and serving 10 million individuals. AAAS fulfills its mission to "advance science and serve society" through initiatives in science policy; international programs; science education; and publication of the journal *Science*. AAAS is committed to promoting the highest quality standards for the conduct of science and engineering. AAAS supports accurately presenting valid and reliable science in all matters (see our amicus brief in *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993)). Consonant with core scientific principles, AAAS maintains that any scientific claim should be regarded skeptically until it has been subject to rigorous peer scrutiny. AAAS also expects scientific studies to reflect intellectual honesty in reporting research. Furthermore, AAAS is strongly committed to broadening participation in science, technology, engineering, and mathematics (STEM); a board-appointed committee advises AAAS in working toward this goal.

The **American Sociological Association (ASA)** is the national professional and scholarly association of sociologists in the United States. Founded in 1905, the Association is dedicated to advancing sociology as a scientific discipline and profession serving the public good. With over 14,000 members, ASA encompasses sociologists who are

faculty members at colleges and universities, researchers, practitioners, and students. Most sociologists holding doctoral degrees from accredited universities are ASA members. About 20 percent of ASA members pursue scientific careers in government, business, or non-profit organizations. ASA publishes nine leading peer-reviewed journals covering research in the discipline, including the *American Sociological Review*, *Sociology of Education*, and *Sociological Methodology*. Since 1967, ASA has had a dedicated scholarly section on sociology of education. In addition, since 1969, the Association has had a Code of Ethics adopted by the membership that specifies standards of scientific responsibility and integrity.

Headquartered in Alexandria, Virginia, the **American Statistical Association (ASA)** is the world's largest community of statisticians and the second oldest continuously operating professional society in the United States. For more than 170 years, the ASA has supported excellence in the development, application, and dissemination of statistical science through meetings, publications, membership services, education, accreditation, and advocacy. Its members serve in industry, government, and academia in more than 90 countries, advancing research and promoting sound statistical practice to inform public policy and improve human welfare.

Founded in 1976, the **Association for the Study of Higher Education (ASHE)** fosters scholarly inquiry of the highest standards of excellence for the purpose of increasing knowledge about and understanding of higher education. ASHE works to advance research and scholarly inquiry on all aspects of

higher education, including teaching and learning, curriculum, students, faculty, organization, policy and social analysis, and finance. The Association's more than 2000 members include faculty actively involved in research and teaching; policymakers and institutional leaders who contribute to framing, dissemination, and use of research; and researchers in training. The Association promotes the development of the next generation of higher education scholars, policymakers, and leaders committed to excellence, relevance, and impact in research, teaching, educational programming, and provision of equity in opportunities to learn. Through its annual conference and its peer-reviewed journals and report series, the Association advances research into key higher education issues.

Founded in 1964, the **Law and Society Association (LSA)** is dedicated to advancing knowledge about law, legal processes, and the interrelationship of law and social, political, economic, and cultural life. The Association promotes rigorous interdisciplinary social scientific research regarding how legal policy and practice affect individuals and institutions as well as how social and political forces shape law. LSA also encourages humanistic inquiry so important for shaping research questions and for interpreting the significance of empirical findings. Committed to scholarship of the highest standards, since 1966, the Association has published the *Law & Society Review*—a peer reviewed journal highly ranked both among social science and law journals. LSA currently includes approximately 1,400 members with training in law, sociology, political science, psychology, anthropology, economics, history, linguistics, literature, communication, and related

fields; many members have dual J.D. and Ph.D. degrees. Nearly all members are employed in university and research institute settings.

Founded in 1924, the **Linguistic Society of America (LSA)** is the major professional society in the U.S. that is exclusively dedicated to the advancement of the scientific study of language. Language is a defining characteristic of the human species and impacts virtually all aspects of human experience. For this reason, linguists seek not only to discover properties of language in general and of languages in particular, but also strive to understand the interface of the phenomenon of language with culture, cognition, history, literature, and other fields of scholarship. The LSA plays a critical role in supporting and disseminating linguistic scholarship, as well as facilitating the application of current research to scientific, educational, and social issues concerning language. With over 4,000 members, the LSA speaks on behalf of the field of linguistics and also serves as an advocate for sound educational and public policies that affect all segments of society.

The **National Academy of Engineering (NAE)** is a non-profit, private organization that was created in 1964 under the Congressional charter of the National Academy of Sciences. NAE has over 2,000 peer-elected members and foreign associates; election to membership is considered one of the highest professional honors that an engineer can achieve. The members of NAE are leaders in business, academia, and government. 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. The NAE has influenced the nature and content of engineering education through its Center for the Advancement of Scholarship on Engineering Education, its Frontiers of Engineering Education programs, and major reports, including *The Engineer of 2020*. The NAE believes that encouraging and sustaining a diverse population of engineers is one of the major challenges facing the profession and the nation today, and that the scientific evidence supports the conclusion that diversity in higher education is critical to creating and maintaining a diverse engineering workforce and leadership