

## FROM ACCESS TO SUCCESS: AFFIRMATIVE ACTION OUTCOMES IN A CLASS-BASED SYSTEM

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*Scholarly discussion about affirmative action policy has been dominated in the past ten years by debates over “mismatch theory”—the claim that race-conscious affirmative action harms those it is intended to help by placing students who receive preferences among academically superior peers in environments where they will be overmatched and unable to compete. Despite serious empirical and theoretical challenges to this claim in academic circles, mismatch has become widely accepted outside those circles, so much so that the theory played prominently in Justice Clarence Thomas’s concurring opinion in Fisher v. University of Texas. This Article explores whether mismatch occurs in the context of a class-conscious affirmative action approach. By moving away from race—which has no logical relationship to mismatch theory—we are able to examine mismatch through a more grounded, less politically laden empirical lens. Our research builds on a previous Article that detailed a class-based*

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*affirmative action system implemented at the University of Colorado in Boulder. We examine college outcomes for the beneficiaries of this affirmative action policy, and find that although grades and graduation rates for disadvantaged students lag behind those of their more advantaged peers, the gaps do not widen over time as mismatch theory suggests that they will. Indeed, more often than not, beneficiaries of this policy earn a bachelor's degree. Moreover, Colorado's class-based indices identify some students who perform quite well in college—better than the typical undergraduate—and who would not have been admitted to college without admissions preferences based on class. The Article concludes with implications for affirmative action policy, along with recommendations for supporting academic success for disadvantaged students who have long faced social, economic, and institutional barriers to college access.*

INTRODUCTION.....	433
I. THE DEVELOPMENT OF CLASS-BASED AFFIRMATIVE ACTION AT CU AND ITS IMPACT ON ADMISSIONS .....	438
II. DO CLASS-BASED ADMITS SUCCEED IN COLLEGE? .....	444
A. <i>Defining Class-Based Admits</i> .....	444
B. <i>Finding Current Class-Based Admits and Historical Surrogates via Coarsened Exact Matching</i> .....	446
1. Identifying Current Class-Based Admits.....	447
2. Identifying Historical Surrogates.....	452
3. Evaluating the Matching Procedure .....	453
C. <i>Findings</i> .....	456
1. Current Class-Based Admits .....	457
2. Historical Surrogates .....	459
3. From Statistics to Stories .....	461
III. IMPLICATIONS FOR AFFIRMATIVE ACTION AND COLLEGE SUCCESS.....	466
A. <i>An Empirical Challenge to Mismatch Theory</i> .....	466
B. <i>Identifying Strivers</i> .....	470
C. <i>Supporting Success</i> .....	471
CONCLUSION .....	474

## INTRODUCTION

Every class will have a bottom and, at any given time, half the students will be performing below average academically. Having accepted students' tuition dollars, colleges and universities have an ethical and professional responsibility to ensure that lower-performing students still achieve some measure of success. That responsibility is unrelated to the race or socioeconomic status of the students, but it is generally the case that low-income students and underrepresented minorities are overrepresented at the bottom of the academic performance distribution.<sup>1</sup>

The question of how best to anticipate and address these achievement gaps in law schools or undergraduate institutions has been largely ignored by legal scholars. Instead, the discussion about achievement gaps in legal scholarship has been hijacked by a heated and highly politicized debate about the relationship between affirmative action and law school success. That debate has focused substantially around a claim, put forward by UCLA Law Professor Richard Sander, that affirmative action actually harms minority students and decreases the number of black lawyers.<sup>2</sup> Sander, and other proponents of "mismatch theory," argue that affirmative action leads black law students to progressively increasing underperformance in law school and ultimately to higher rates of bar exam failure.<sup>3</sup> While his theory began as an argument about law school success, Sander has since recently expanded his claim, asserting that mismatch occurs at every level of higher education.<sup>4</sup> According to Sander, African-American students would be better off at less selective colleges and universities because those less selective institutions are better

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1. See, e.g., RICHARD ROTHSTEIN, CLASS AND SCHOOLS: USING SOCIAL, ECONOMIC, AND EDUCATIONAL REFORM TO CLOSE THE BLACK-WHITE ACHIEVEMENT GAP 17–19 (Econ. Policy Inst. ed., 2004); Ian Ayres & Richard Brooks, *Does Affirmative Action Reduce the Number of Black Lawyers?*, 57 STAN. L. REV. 1807, 1808 (2005).

2. Richard H. Sander, *A Systemic Analysis of Affirmative Action in American Law Schools*, 57 STAN. L. REV. 367, 371–72 (2004).

3. See, e.g., *id.*; RICHARD SANDER & STUART TAYLOR JR., MISMATCH: HOW AFFIRMATIVE ACTION HURTS STUDENTS IT'S INTENDED TO HELP, AND WHY UNIVERSITIES WON'T ADMIT IT 58–60 (2012); Gail Heriot, *The Sad Irony of Affirmative Action*, 14 NAT'L AFF. 78, 80 (2013).

4. See SANDER & TAYLOR, *supra* note 3, at 4–7.

suiting to their academic credentials.<sup>5</sup>

This idea has generated passionate response, and has dominated recent discussion about affirmative action as a policy choice.<sup>6</sup> The varied academic responses to the mismatch claim have identified many serious empirical and theoretical flaws, and the theory has not garnered many academic supporters.<sup>7</sup> And yet, the idea of mismatch has become widely accepted outside of academic circles. Most notably, mismatch played a central role in Justice Clarence Thomas's concurring opinion in *Fisher v. University of Texas*<sup>8</sup> and media coverage of that decision.<sup>9</sup>

Mismatch and the politics of race-conscious affirmative

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5. See *id.*; see also Richard Sander & Aaron Danielson, *Thinking Hard about "Race-Neutral" Admissions*, 47 U. MICH. J.L. REFORM 967, 987–88 (2014).

6. See, e.g., WILLIAM BOWEN & DEREK BOK, *THE SHAPE OF THE RIVER: LONG-TERM CONSEQUENCES OF CONSIDERING RACE IN COLLEGE AND UNIVERSITY ADMISSION* (1998); WILLIAM BOWEN, MICHAEL M. CHINGOS & MATTHEW S. MCPHERSON, *CROSSING THE FINISH LINE: COMPLETING COLLEGE AT AMERICA'S PUBLIC UNIVERSITIES* (2009); THOMAS J. ESPENSHADE & ALEXANDRA W. RADFORD, *NO LONGER SEPARATE, NOT YET EQUAL: RACE AND CLASS IN ELITE COLLEGE ADMISSIONS AND CAMPUS LIFE* (2009); Ayres & Brooks, *supra* note 1; Katherine Y. Barnes, *Is Affirmative Action Responsible for the Achievement Gap Between Black and White Law Students?*, 101 NW. U. L. REV. 1759 (2007); Deirdre M. Bowen, *Meeting Across the River: Why Affirmative Action Needs Race & Class Diversity*, 88 DENV. U. L. REV. 751 (2011); 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 (2014); David L. Chambers et al., *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); Kevin R. Johnson & Angela Onwuachi-Willig, *Cry Me a River: The Limits of "A Systemic Analysis of Affirmative Action in American Law Schools,"* 7 AFR.-AM. L. & POL'Y REP. 1 (2005); Angela Onwuachi-Willig & Amber Fricke, *Class, Classes, and Classic Race-Baiting: What's in a Definition?*, 88 DENV. U. L. REV. 807 (2011); Richard H. Sander, *Experimenting with Class-Based Affirmative Action*, 47 J. LEGAL EDUC. 472, 485 (1997); David B. Wilkins, *A Systematic Response to Systematic Disadvantage: A Response to Sander*, 57 STAN. L. REV. 1915 (2005).

7. See, e.g., Chambers et al., *supra* note 6, at 1859–91 (identifying flaws in the empirical evidence that Sander uses to support his arguments); Ayres & Brooks, *supra* note 1, at 1817–27 (same); Wilkins, *supra* note 6, at 1927–42 (challenging the assumption underlying mismatch theory: that high grades are more important than school rank for ultimate employment success).

8. 133 S. Ct. 2411, 2431–32 (2013) (arguing that “as a result of the mismatching, many blacks and Hispanics who likely would have excelled at less elite schools are placed in a position where underperformance is all but inevitable because they are less academically prepared than the white and Asian students with whom they must compete”).

9. See, e.g., Dan Slater, *Does Affirmative Action Do What It Should?*, N.Y. TIMES (Mar. 17, 2013), <http://www.nytimes.com/2013/03/17/opinion/sunday/does-affirmative-action-do-what-it-should.html>, archived at <http://perma.cc/9PS9-UCBY>.

action<sup>10</sup> have focused scholars and policy-makers on the wrong questions. There *is* an achievement gap, in both college and graduate programs, between underrepresented minority students and white students.<sup>11</sup> There is also an achievement gap between lower-income students and their wealthier peers.<sup>12</sup> Mismatch theory offers one possible explanation for those gaps, but there are other more plausible explanations.<sup>13</sup> Legal scholarship has not only paid too little attention to other possible explanations for the continued achievement gaps in post-secondary education, but, more importantly, it has given too little attention to solutions. The two are related. For example, if mismatch is the explanation for achievement gaps, then one solution might be to eliminate affirmative action, which advocates of this theory argue would shift African-American students to less selective schools where they are not mismatched and will perform better.<sup>14</sup> But if alternative theories better explain those achievement gaps—as we believe they do—then different solutions also would address these gaps more effectively. We should turn our attention to solutions for achievement gaps, both in college and in law school.

This Article looks to do just that, disentangling the debate about college success from its current politically charged moorings, and moving the conversation forward by detailing the results of an empirical study of college outcomes conducted at the University of Colorado Boulder (“CU” or “the University”) following the introduction of the University’s

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10. Interestingly, while there is nothing inherently race-related about mismatch theory, it is only ever deployed as an argument against race-conscious affirmative action. See Michal Kurlaender & Eric Grodsky, *Mismatch and the Paternalistic Justification for Selective College Admissions*, 86 SOC. EDUC. 294 (2013).

11. See WILLIAM G. BOWEN, MARTIN A. KURZWEIL & EUGENE M. TOBIN, EQUITY AND EXCELLENCE IN AMERICAN HIGHER EDUCATION 69–72 (2005).

12. See BOWEN, CHINGOS & MCPHERSON, *supra* note 6, at 8.

13. Race and class-based achievement gaps beginning in early childhood have been the subject of several excellent books and articles. See, e.g., ROTHSTEIN, *supra* note 1; Jeanne Brooks-Gunn & Greg J. Duncan, *The Effects of Poverty on Children*, 7 CHILD. & POVERTY 55, 61–62 (1997) (describing cognitive and school-achievement impacts associated with living in poverty). Our focus in this Article is not on the causes of these early-appearing achievement gaps.

14. Of course, as Katherine Barnes pointed out in her analysis of mismatch theory, even if mismatch is the best explanation for achievement gaps, other solutions, such as the provision of significant academic support, might be more attractive than eliminating affirmative action. See Barnes, *supra* note 6, at 1764.

class-based affirmative action policy.<sup>15</sup> The divisive politics of race-conscious affirmative action have made serious scholarly inquiry into how best to address the underlying achievement gaps significantly more difficult. Examining the same policy questions through a class lens, while not entirely eliminating politics, mitigates the challenge that the especially complicated politics of race has injected into the conversation.

Our findings offer several important insights. First, we found that, on average, students admitted as a result of class-based affirmative action do not perform as well academically as students admitted without an admissions boost for low socioeconomic status (SES). This is not surprising; pre-matriculation academic credentials tend to predict post-matriculation academic performance.<sup>16</sup> Importantly, however, that aggregate gap does not widen during school. In other words, students admitted through class-based affirmative action do not fall further behind their peers over the course of their post-secondary careers. Thus a key claim of the mismatch argument—that students who start behind will fall progressively further behind<sup>17</sup>—is challenged by this empirical data.

A second important aspect of our findings is that aggregate numbers tell only part of the story. While class-based admits as an undifferentiated group perform below average, not all class-based admits are the same. Some beneficiaries of class-based affirmative action outperform their wealthier peers, and CU's class-based admissions metrics make it possible to identify the type of student most likely to succeed despite significant socioeconomic obstacles. Mismatch theory does not make any effort to differentiate among students with lower academic credentials or even to acknowledge the reality that the aggregate statistics of success rates for those with lower entering scores include individual exceptions. This lack of nuance may in part explain proponents' overbroad conclusion that race-conscious affirmative action is bad policy.

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15. As we detail in Part I, *infra*, this Article builds on our 2013 Article describing the successful development of the robust class-based affirmative action admissions approach at CU. Matthew Gaertner & Melissa Hart, *Considering Class: College Access and Diversity*, 7 HARV. L. & POL'Y REV. 367 (2013).

16. JENNIFER L. KOBRIN, BRIAN F. PATTERSON, EMILY J. SHAW, KRISTA D. MATTERN & SANDRA M. BARBUTI, VALIDITY OF THE SAT FOR PREDICTING FIRST-YEAR COLLEGE GRADE POINT AVERAGE 5 (2008).

17. See, e.g., SANDER & TAYLOR, *supra* note 3, at 4.

These results suggest several policy prescriptions. Perhaps most importantly (and most obviously), universities can anticipate that the students they admit with lower academic credentials will generally need more and different kinds of support than the students who enter with higher academic credentials.<sup>18</sup> This is not a reason to refuse these students admission; universities regularly admit students who they project will perform below average academically, but who will also enrich the campus environment with an uncommon perspective or talent.<sup>19</sup> Admitting these applicants does, however, create an institutional obligation to offer the academic support that will allow students to translate educational access into educational opportunity.

In Part I of this Article, we briefly explore the current legal status of race-conscious affirmative action and explain the development of CU's class-conscious admissions policy. In Part II, we set forth the methodology and the results of our study of college success for class-based admits at CU. The Article goes on in Part III to consider the implications of our findings, both for the legitimacy of the mismatch theory's claims and for development of an admissions and support strategy that will foster student success. We conclude that the best approach to questions of college success for students who are admitted with lower academic credentials—a group that includes beneficiaries of race- or class-conscious affirmative action, as well as other students admitted for any of a range of considerations beyond high school grades and admissions test scores—is not to eliminate affirmative action, but rather to acknowledge the likelihood of achievement gaps and to implement programs that support success for all matriculating students.<sup>20</sup>

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18. See, e.g., BOWEN, CHINGOS & MCPHERSON, *supra* note 6, at 211–17 (offering an overview of support strategies for different groups of students (e.g., low-SES, racial minorities) who enter college with below-average academic credentials); SHAUN HARPER, BLACK MALE STUDENTS AT PUBLIC FLAGSHIP UNIVERSITIES IN THE U.S.: STATUS, TRENDS, AND IMPLICATIONS FOR POLICY AND PRACTICE 19–20 (2006) (offering policy recommendations specific to African-American males).

19. See, e.g., WARREN W. WILLINGHAM & HUNTER M. BRELAND, PERSONAL QUALITIES AND COLLEGE ADMISSIONS 84–85 (1982).

20. We recognize that the question of what constitutes “success” is a complicated one. For the purpose of evaluating the success of CU's class-based admits, we consider grades, persistence, and degree attainment. By focusing on these measurable factors, we do not mean to exclude other, perhaps less concrete, ways of defining success. We use these factors because they are relatively

## I. THE DEVELOPMENT OF CLASS-BASED AFFIRMATIVE ACTION AT CU AND ITS IMPACT ON ADMISSIONS

Race-conscious affirmative action has been controversial for decades. Moreover, attacks on affirmative action in courts, in the media, and in academic literature have only increased over the past ten years.<sup>21</sup> In 2013, the Supreme Court affirmed the general principle that diversity is a compelling state interest that can justify consideration of race in university admissions.<sup>22</sup> The Court's opinion in *Fisher* was, however, hardly a ringing endorsement of affirmative action. Instead, the Court remanded the case for application of a stringent strict-scrutiny analysis, cautioning lower courts not to give too much deference to the assertions of university administrators about whether their affirmative-action plans were narrowly tailored to achieve the desired diversity.<sup>23</sup> Many scholars and pundits view *Fisher* as one more nail in the coffin of race-conscious college admissions.<sup>24</sup> Others, including the United States Departments of Justice and Education, argue that nothing has really changed and that race-conscious admissions policies remain safely constitutional where they are narrowly tailored to achieve the educational benefits that flow from diverse learning environments.<sup>25</sup> Either way, there is a high likelihood that *Fisher*—and the constitutional legitimacy of affirmative action—will end up back before the Supreme Court soon.<sup>26</sup>

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uncontroversial as metrics of success and because they are measurable outcomes that permit direct comparisons.

21. See, e.g., RICHARD D. KAHLENBERG, A BETTER AFFIRMATIVE ACTION: STATE UNIVERSITIES THAT CREATED ALTERNATIVES TO RACIAL PREFERENCES 3–10 (2012) (describing increasing political and legal challenges to affirmative action).

22. *Fisher v. Univ. of Tex.*, 113 S. Ct. 2411 (2013).

23. *Id.* at 2419–20.

24. See, e.g., Richard Lempert, *What to Make of Fisher v. Texas: An Interesting Punt on Affirmative Action?*, BROOKINGS (June 25, 2013, 12:00 AM), <http://www.brookings.edu/blogs/up-front/posts/2013/06/25-affirmative-action-scotus-lempert>, archived at <http://perma.cc/YY6W-BMAL>.

25. See Joint Letter from Jocelyn Samuels, Acting Assistant Attorney Gen., Civil Rights Div., U.S. Dep't of Justice, & Catherine E. Lhamon, Assistant Sec'y, Office for Civil Rights, U.S. Dep't of Educ., to College and University Presidents (Sept. 27, 2013), available at <https://www2.ed.gov/about/offices/list/ocr/letters/colleague-201309.pdf>, archived at <http://perma.cc/K2UZ-3PLG>.

26. See, e.g., Manny Fernandez, *Texas University's Race Admissions Policy is Debated Before a Federal Court*, N.Y. TIMES, (Nov. 13, 2013) <http://www.nytimes.com/2013/11/14/us/texas-universitys-race-admissions-policy-is-debated-before-a->



The uncertain future of race-conscious admissions leaves higher-education administrators in an uncomfortable bind. Universities are generally committed to serving as diverse a range of students as possible.<sup>27</sup> This will remain true whether or not race-conscious affirmative action remains a legally or politically viable option. In substantial part because of the uncertain future of race-conscious affirmative action, university admissions departments have recently begun paying increasing attention to socioeconomic diversity.<sup>28</sup>

A focus on socioeconomic diversity is sensible and worthwhile in its own right. Historically, class has divided those with access to education from those without access.<sup>29</sup> Today, it is widely acknowledged that higher education opens paths of economic opportunity that would otherwise remain unavailable.<sup>30</sup> Indeed, “[b]ecause of its growing strength as the arbiter of economic opportunity, post-secondary education has become the preferred and the most effective economic leveler, serving as an engine for mobility.”<sup>31</sup> Universities, particularly public institutions, feel a strong responsibility for ensuring that those paths of opportunity are available to students from a

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federal-court.html, *archived at* <http://perma.cc/JP44-M8RF>; Daniel Fisher, Fisher vs. Texas *Dismissed Again; Is It Headed Back To Supreme Court?*, FORBES (July 15, 2014, 6:19 PM), <http://www.forbes.com/sites/danielfisher/2014/07/15/fisher-vs-texas-dismissed-again-is-it-headed-back-to-supreme-court>, *archived at* <http://perma.cc/9LN-YXBA>.

27. For example, in the *2014 Inside Higher Ed Survey of College and University Admissions Directors*, 73 percent of respondents agreed they would increase their efforts to recruit minority students, and 71 percent agreed they would increase their efforts to recruit first-generation college students. See Scott Jaschik, *More Pressure Than Ever: The 2014 Survey of College and University Admissions Directors*, INSIDE HIGHER ED. (Sept. 18, 2014), <https://www.insidehighered.com/news/survey/more-pressure-ever-2014-survey-college-and-university-admissions-directors>, *archived at* <http://perma.cc/5VDH-B9EH>.

28. See, e.g., Nancy Cantor & Peter Englot, *Defining the Stakes: Why We Cannot Leave the Nation's Diverse Talent Pool Behind and Thrive*, in THE FUTURE OF AFFIRMATIVE ACTION: NEW PATHS TO HIGHER EDUCATION DIVERSITY AFTER FISHER V. UNIVERSITY OF TEXAS 27–34 (Richard D. Kahlenberg ed., 2014); KAHLENBERG, *supra* note 21, at 11–26.

29. See, e.g., Anthony P. Carnevale & Jeffrey Strohl, *How Increasing College Access is Increasing Inequality, and What To Do About It*, in REWARDING STRIVERS: HELPING LOW-INCOME STUDENTS SUCCEED IN COLLEGE 71 (Richard D. Kahlenberg ed., 2010).

30. See *id.* at 71 (“In the postindustrial economy, educational attainment, especially post-secondary educational attainment, has replaced the industrial concept of class as the primary marker for social stratification.”).

31. *Id.* at 72.

range of socioeconomic backgrounds.<sup>32</sup>

But increased focus on class diversity has also been a consequence of the persistent attacks on race-conscious affirmative action.<sup>33</sup> In states where race-conscious admissions standards have been banned, legislators and university administrators have turned to a variety of class-based options in an effort to maintain racial diversity. In Texas, for example, the “Top Ten Percent” policy was explicitly adopted in response to a Fifth Circuit case that interpreted the Constitution as prohibiting race-conscious standards.<sup>34</sup> The premise behind the policy is that residential segregation results in segregated secondary education, and therefore opening college doors to the top ten percent of each high school class will lead to greater racial diversity in post-secondary education.<sup>35</sup> In California, when voters passed Proposition 209—the state constitutional provision that banned affirmative action in education—colleges and universities also turned to increased consideration of class in an effort to maintain a more diverse student body.<sup>36</sup>

Like these other states, Colorado confronted the possibility of a ban on race-conscious admissions; its 2008 ballot included a proposed constitutional amendment identical to California’s Proposition 209.<sup>37</sup> Facing the possibility that the amendment might pass, Colorado’s flagship public institution—the University of Colorado Boulder—started to look for alternative admissions approaches that would meet the University’s interest in admitting a diverse class while complying with the proposed ban.<sup>38</sup>

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32. See *supra* note 20.

33. See, e.g., Greg Toppo, *Affirmative Action Fading From College Scene*, USA TODAY (Feb. 12, 2014), <http://www.usatoday.com/story/news/nation/2014/02/12/black-history-affirmative-action/5432107>, archived at <http://perma.cc/4YD8-UNGD> (quoting Richard Kahlenberg’s description of class-based measures as “the future of affirmative action”).

34. See NICHOLAS WEBSTER, AN ANALYSIS OF THE TEXAS TOP TEN PERCENT PLAN 3–5 (Kirwan Inst. ed., 2007), available at [http://kirwaninstitute.osu.edu/reports/2007/08\\_2007\\_DemMerit\\_AnalysisofTXTenPercent.pdf](http://kirwaninstitute.osu.edu/reports/2007/08_2007_DemMerit_AnalysisofTXTenPercent.pdf), archived at <http://perma.cc/RHS8-GKHH> (describing the history and enactment of the Top Ten Percent Plan in Texas). Under the Texas plan, students who graduate from the top of their class in a Texas public high school are entitled to admission to one of the state’s public universities. *Id.*

35. *Id.* at 5.

36. See, e.g., Gaertner & Hart, *supra* note 15, at 375–76.

37. *Id.* at 369.

38. *Id.* Because Amendment 46, the anti-affirmative action initiative proposed in Colorado, was rejected by voters, the University has continued to consider race

While the University, like most others, had always considered some measures of socioeconomic status in its individualized assessment of candidates, it had not implemented a systematic approach that would allow admissions officers to consider measures of socioeconomic status uniformly across the applicant pool.<sup>39</sup> The goal in 2008 was to develop such an approach and, to the extent possible, to ensure that the students identified by the approach possessed qualities that enable college success.<sup>40</sup>

The method developed at CU included measures to capture two applicant traits: the “obstacles to life chances” each applicant faced, and the extent to which the applicant had overcome those obstacles.<sup>41</sup> “Obstacles to life chances” were quantified in what the University now calls the “Disadvantage Index.”<sup>42</sup> The Disadvantage Index is applied to every applicant, and it accounts for a range of individual and contextual factors that have been empirically demonstrated to impact an applicant’s likelihood of attending a four-year college.<sup>43</sup> “Overcoming obstacles” was quantified in the “Overachievement Indices.”<sup>44</sup> These indices are also applied to every applicant, and they measure the extent to which an applicant’s academic credentials (SAT scores, ACT scores, and high-school GPA) exceed those of students with similar socioeconomic backgrounds.<sup>45</sup>

Students identified by these indices are not automatically granted admission to CU. Instead, the University sets numerical thresholds along the indices’ scales to flag applicants exhibiting substantial disadvantage and overachievement.<sup>46</sup> Students who are identified as either severely disadvantaged

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as one factor in admissions. Since 2011, CU has also considered socioeconomic status as an admissions factor. *Id.*

39. *Id.* at 378.

40. *Id.*

41. *Id.* at 379.

42. *Id.*

43. *Id.* These factors include parents’ education, family income, number of dependents in the family, native language, rural high school, percentage of students receiving free or reduced lunch at the applicant’s high school, student-to-teacher ratio at high school, and the size of the twelfth-grade class. *Id.* at 381.

44. *Id.* at 379.

45. *Id.* The factors used to determine socioeconomic status for the assessment of overachievement are the same as those used for assessing disadvantage. *See supra* note 43.

46. *Id.* at 387–89.

or exhibiting extraordinary overachievement are given a “primary factor” boost in the admissions process.<sup>47</sup> This translates to a substantial increase in the odds of acceptance into CU. For other applicants identified by the indices—for example, those described as moderately disadvantaged or exhibiting high but not extraordinary overachievement—socioeconomic status provides a more modest boost in the admissions process.<sup>48</sup>

Not surprisingly, application of the Disadvantage and Overachievement Indices increases the chances of admission to CU for socioeconomically disadvantaged applicants.<sup>49</sup> Applicants whose academic credentials alone would not assure their acceptance are given the opportunity to attend the University because of the boost that this class-conscious admissions policy offers.<sup>50</sup> Increasing college access, however, is an incomplete accomplishment; we must also examine the academic impact of introducing this new group into the admitted-student pool.

One way to evaluate this impact is to look at the aggregate effect on the entire entering class. Applicants who receive considerable admissions advantages from this approach are likely to have low high school academic credentials—GPA and admissions test scores—relative to their peers.<sup>51</sup> Analyses following implementation of the new approach, however, suggest that aggregate measures of the academic strength of CU’s freshman class—the family of statistics typically included in *U.S. News & World Report’s* “National University Rankings”—would be largely unaffected by the implementation of class-based affirmative action.<sup>52</sup> For example, if a class-based policy were to replace race-conscious admissions, the mean high school GPA of all admitted students would decrease 0.02 points, the mean ACT composite score would decrease 1 point, and the mean SAT combined score would decrease 10 points.<sup>53</sup> If a class-based policy were to supplement rather than replace race-conscious admissions, these differences would be

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47. *Id.* at 389.

48. *Id.*

49. *Id.* at 392, 397.

50. *Id.* at 392.

51. *Id.* at 395.

52. *Id.* at 399.

53. *Id.*

even smaller.<sup>54</sup> In fact, negligible aggregate effects are to be expected, because class-based affirmative action at CU affects a relatively small segment of the full applicant pool.<sup>55</sup> Summarizing the academic preparedness of an entire freshman class, however, does not fully describe the academic impact of a class-based admissions approach.

Class-based policies give rise to a more important concern, namely, that the direct beneficiaries of these policies—the students who would not have been admitted without them—may not have a high likelihood of success in college. It is insufficient to design an admissions system that increases acceptance rates for disadvantaged and overachieving applicants without considering whether or not those students are actually capable of handling college-level work. The credibility of class-based affirmative action is questionable if its beneficiaries are unlikely to succeed in college. Indeed, this is precisely what gives such rhetorical force to the mismatch theory. Sander asserts that students who receive large affirmative action preferences struggle to succeed in competitive universities, and in fact do progressively less well over the course of their college careers.<sup>56</sup> Because of this, he concludes, race-conscious affirmative action is bad policy.<sup>57</sup> There is no logical relationship between the idea of mismatch and the race of the beneficiaries of affirmative action, so if these claims are correct with regard to race-conscious admissions standards, they should also be true for class-based admits. Thus, we will now turn to the question of college success for class-based admits.

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54. *Id.*

55. For example, in the initial study of the impact of class-conscious admissions, only 6.5 percent of a sample of applicants were accepted under a class-based affirmative action system but rejected under a system that did not specifically consider class. *See id.* at 395.

56. *See, e.g.,* Richard Sander & Stuart Taylor, Jr., *The Painful Truth About Affirmative Action*, ATLANTIC (Oct. 2, 2012), <http://www.theatlantic.com/national/archive/2012/10/the-painful-truth-about-affirmative-action/263122>, archived at <http://perma.cc/8BK2-HYF7> (theorizing that students who are admitted to elite institutions based on admissions advantages they receive because of their race tend to start at a disadvantage and fall further and further behind their peers as their academic careers progress).

57. *Id.*

## II. DO CLASS-BASED ADMITS SUCCEED IN COLLEGE?

In the debates over mismatch theory, one of the central disagreements has been the meaning of success for graduates and the time horizon over which outcomes should be evaluated.<sup>58</sup> We recognize the difficulties inherent in establishing a definition of success, and the value judgments that lie behind any such definition.<sup>59</sup> For the purposes of this Article, we measure college success through grades, persistence,<sup>60</sup> and degree attainment. Our focus on these outcomes is a consequence of data availability, not a judgment that these are the sole—or even necessarily the most important—measures of success. Student engagement and satisfaction in the learning environment, and employment following departure from school, for example, are essential elements of success, but are less amenable to measurement.

Using the selected measures of college success, this Part proceeds in section A by defining the pool of class-based admits we are studying, and then by explaining our methods for evaluating success in section B. While this Article's focus is not methodological, we do intend to demonstrate that universities can implement relatively straightforward experimental designs and statistical techniques to forecast college outcomes for the students who benefit from affirmative action.

*A. Defining Class-Based Admits*

In a 2009 study of CU's newly developed Disadvantage and Overachievement Indices, admissions officers were given a random sample of applications from the 2009 pool to review using the class-based approach (all potential race identifiers, including the applicants' names, were removed from the files).<sup>61</sup> Ten admissions officers participated in this

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58. See, e.g., Wilkins, *supra* note 6, at 1916–18 (noting that mismatch theory focuses on grades and bar passage, but that one could also look at ultimate employment success in evaluating outcomes and that the results would not necessarily be the same).

59. In the context of the debate over mismatch theory in legal scholarship, for example, there is much disagreement over whether higher grades at a less prestigious institution or lower grades at a more prestigious institution are the better path to success. See, e.g., *id.* at 1917–18.

60. Persistence in this context refers to a student's decision to return to school for the subsequent year of education.

61. Gaertner & Hart, *supra* note 15, at 390–91.

experiment.<sup>62</sup> Each reviewed roughly fifty applications, and no reviewer evaluated the same application twice.<sup>63</sup> This process netted thirty-one applicants who were not accepted under the admissions process in place at the time, but were identified for acceptance in the experiment.<sup>64</sup> Of that group of thirty-one, nineteen were actually identified by the Overachievement and Disadvantage Indices; in other words, nineteen applicants crossed at least one of the numerical thresholds on the indices' scales indicating substantial disadvantage or overachievement. We identify these nineteen students as class-based admits because they would not have been admitted to CU but for class-based affirmative action.<sup>65</sup>

Ideally, we would measure college success for class-based admits by tracking post-secondary outcomes for these nineteen students. In the 2009 experiment, however, class-based admissions decisions were unofficial.<sup>66</sup> The nineteen class-based admits were refused admission under the official policy at CU, so it was not possible to follow their progress in college.<sup>67</sup> There are, instead, two suitable alternatives. The first alternative is to examine the educational progress of students currently attending CU. The Disadvantage and Overachievement Indices were fully implemented in admissions decisions for the first time in 2011.<sup>68</sup> Thus, there

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62. *Id.* at 391.

63. *Id.*

64. *Id.* at 395.

65. Twelve of the thirty-one students identified for acceptance during the 2009 experiment were not identified by the indices as class-based admits. In other words, while they had been rejected under the regular admissions process, and then selected during the class-based experiment, their selection in the experiment was not because of the boost offered to socioeconomically disadvantaged applicants. Admissions officers noted that this phenomenon was likely an artifact of fairly low inter-reader reliability when marginally qualified applicants are evaluated. That is, the twelve students accepted under class-based affirmative action who were not identified under the indices were extremely "close calls"; their likelihood of acceptance may vary more from reader to reader than would the acceptance likelihood for typical undergraduate applicants. Because these twelve students may well have been accepted under slightly different admissions conditions (i.e., an alternate reader) they cannot be reasonably identified as beneficiaries of class-based affirmative action. These twelve students had both higher academic credentials and higher SES than the nineteen students identified by the indices. As such, to avoid artificially high estimates of college performance for class-based beneficiaries, these twelve students were removed from the pool of class-based admits.

66. *Id.* at 391 n.80.

67. *Id.* at 390–91.

68. *Id.* at 396.

should be a cohort of students who enrolled as freshmen at CU, in 2011 and in each subsequent year, who would not have been admitted without class-based affirmative action. Unfortunately, those students have only been enrolled at CU for two years, at maximum, so it is not possible to calculate important measures such as their four-year or six-year graduation rates. Therefore, the second alternative is to look at historical records. High school and college data were collected from the 21,126 students who first enrolled at CU between 2000 and 2003. The set was limited to these four years because each student who enrolled during this time has had the opportunity to graduate from college in six years—a common measuring stick in research on college outcomes.<sup>69</sup>

In the next section, we describe the statistical procedure used to find students—both currently attending CU and in the historical data—whose profiles closely match those of the class-based admits from the 2009 experiment. We detail the variables considered in constructing matches and then evaluate the quality of those matches. In the subsequent section, we examine post-secondary outcomes for matched students to gauge the likelihood of college success for class-based admits.

### *B. Finding Current Class-Based Admits and Historical Surrogates via Coarsened Exact Matching*

To identify current and historical CU students who closely match the academic and socioeconomic profiles of the nineteen class-based admits from the 2009 experiment, we used coarsened exact matching (CEM).<sup>70</sup> The tasks involved in CEM are implied by its name. First, a set of characteristics is chosen as the basis for matching groups of students.<sup>71</sup> In the class-

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69. See, e.g., ESPENSHADE & RADFORD, *supra* note 6, at 229–39; see also BOWEN, CHINGOS & MCPHERSON, *supra* note 6, at 32–33. We elected to examine the most recent cohort possible to mitigate any concerns about the age of the data as a comparator set for current students.

70. See Stefano M. Iacus, Gary King & Giuseppe Porro, *Multivariate Matching Methods that Are Monotonic Imbalance Bounding*, 106 J. AM. STAT. ASS'N 345, 350 (2011) (explaining that CEM is a method for establishing comparison groups and involves matching sub-classification variables).

71. In CEM literature, the variables used to match students are usually termed “pre-treatment” variables. See *id.* at 345. These are variables that influence group membership (i.e., status as a class-based admit or not), may influence the outcome under examination (i.e., college performance), and are



based admissions context, these characteristics should include both socioeconomic variables (e.g., family income) and academic measures (e.g., SAT scores). Some of those variables, such as SAT scores, are continuous measures where perfect matches will be rare. In those cases variables must be “coarsened,” that is, recoded into discrete ordinal categories (e.g., SAT scores between 1000 and 1100, between 1100 and 1200, and so on).<sup>72</sup> Once the variables are coarsened, we look for exact matches on all socioeconomic and academic characteristics of interest.<sup>73</sup> Different student characteristics were available in the current and historical CU data, so we describe the specific matching steps for each dataset separately.<sup>74</sup> Following the descriptions of matching steps, we evaluate the quality of the matches in subsection 2 to confirm that appropriate sets of current and historical students have been selected for the subsequent analysis of college outcomes.

### 1. Identifying Current Class-Based Admits

We begin with the current CU data, where we sought to identify true class-based admits—enrolled students who were identified by the Disadvantage Index or the Overachievement Index, or both, during the admissions process, and who also match the profiles of the nineteen class-based admits from the 2009 experiment.<sup>75</sup> The current CU data contain three key

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measured prior to the establishment of groups (i.e., for class-based admits, prior to college admission). *See id.* Therefore, our matching variables included socioeconomic measures (e.g., family income) and achievement measures such as SAT scores, all of which were collected prior to the admissions decision. In *Multivariate Matching Methods that Are Monotonic Imbalance Bounding*, the authors provide another example, where researchers measure the effect of having a daughter on Congressional voting patterns, matching on a variety of potentially confounding pre-treatment variables including race, gender, political party, religion, and Democratic vote share. *See id.*

72. *See id.* at 350.

73. *See id.*

74. For the sake of clarity and consistency, we refer to the nineteen class-based admits from the 2009 experiment as “2009 class-based admits,” the class-based admits from the 2011 to 2013 CU data as “current class-based admits,” and matched students from the historical data as “historical surrogates.”

75. Finding the current CU students who were identified by the Disadvantage Index or Overachievement Index is necessary but not sufficient, because many of those students could have been admitted without the indices. We also need to match those students to the 2009 class-based admits—who under experimental conditions needed the indices to gain admission—to ensure our analysis of college outcomes focuses as closely as possible on students who would not have been

academic and socioeconomic measures that serve this purpose—the Disadvantage Index, the Overachievement Index, and “Predicted Freshman Year GPA.” The last measure, known as PGPA, is the predicted value of an applicant’s freshman-year GPA.<sup>76</sup> It is derived from a regression equation that is based on high school GPA and either SAT scores or ACT scores. Therefore, PGPA functions as a useful achievement composite, summarizing not only an applicant’s entrance exam scores, but also his or her high school grades.

The Disadvantage Index, the Overachievement Index, and PGPA are continuous measures, similar to the SAT, and must therefore be coarsened for both current CU students and class-based admits from the 2009 experiment prior to matching. Coarsening is straightforward for the Disadvantage and Overachievement Indices thanks to pre-existing classifications under each Index. As part of the admissions process, CU established thresholds along the indices’ scales to form successive categories of disadvantage and overachievement.<sup>77</sup> Those categories, along with the percentage of 2009 class-based admits classified in each one, are presented in Table 1.

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admitted in the absence of class-based affirmative action.

76. At the University of Colorado, as at other schools, each applicant’s PGPA is used as a quantitative measure to gauge his or her academic potential. *See, e.g., Academic Preparation of Freshman Applicants, Admits, and Matriculants Over Time*, UNIV. COLO. OFF. PLANNING, BUDGET, AND ANALYSIS, <http://www.colorado.edu/pba/records/acprep/> (last updated Sept. 17, 2014), *archived at* <http://perma.cc/CCH2-RM8N> (“The predicted CU GPA is calculated from a formula that combines high school GPA (by far the strongest predictor) and SAT or ACT scores to predict first-year GPA . . .”). Confidentiality agreements with the Office of Admissions do not permit descriptions of the PGPA equations in any mathematical detail. Essentially, each applicant’s PGPA is calculated via regression models, which are estimated using CU student performance data from prior years. *See id.* In those regressions, CU students’ freshman-year GPAs are modeled as a function of high school GPA, SAT scores, and ACT scores. *See id.* Coefficients from those regression models form prediction equations, which are applied to all CU applicants. *See id.* Using high school grades and admissions test scores to form a single composite measure of “academic competence” is common in admissions research and practice. *See, e.g., WILLINGHAM & BRELAND, supra* note 19, at 77.

77. *See* Gaertner & Hart, *supra* note 15, at 387–88.

2015]

FROM ACCESS TO SUCCESS

449

*Table 1. Classifications under the Disadvantage and Overachievement Indices, 2009 Class-Based Admits*

	No Overachievement	High Overachievement	Extraordinary Overachievement
No Disadvantage	0%	16%	5%
Moderate Disadvantage	32%	0%	5%
Severe Disadvantage	21%	16%	5%

Table 1 provides us with the first coarsening variable—a nine-category measure defined by the nine cells in the table (no overachievement and no disadvantage, no overachievement and moderate disadvantage, and so on). These categories are mutually exclusive and exhaustive. Every applicant to CU fits in one and only one. We also placed constraints on PGPA, to ensure the current CU students identified as class-based admits were also comparable to 2009 class-based admits in terms of academic preparation. No 2009 class-based admit had a PGPA higher than 3.14; accordingly, no current CU class-based admit could have a PGPA higher than 3.14. In addition, PGPA was coarsened into two categories—values above the fiftieth percentile, and values below it.<sup>78</sup> Including coarsened PGPA as our second matching variable subdivides the categories presented in Table 1. The new categories, along with the percentage of 2009 class-based admits classified in each one, are presented in Table 2.

78. We placed a ceiling (3.14) on PGPA and further coarsened it into two categories to obtain more precise matches for the 2009 class-based admits and therefore more realistic estimates of college outcomes for the beneficiaries of affirmative action. For example, following the coarsening of PGPA into two categories, 2009 class-based admits exhibiting severe disadvantage and high overachievement with PGPA below the fiftieth percentile can only be matched to current students exhibiting severe disadvantage and high overachievement with PGPA below the fiftieth percentile. They cannot be matched to any students with PGPA above the fiftieth percentile.

*Table 2. Classifications under the Disadvantage and Overachievement Indices, by PGPA Category, 2009 Class-Based Admits*

	No Overachievement		High Overachievement		Extraordinary Overachievement	
	PGPA < 50th Percentile	PGPA > 50th Percentile	PGPA < 50th Percentile	PGPA > 50th Percentile	PGPA < 50th Percentile	PGPA > 50th Percentile
No Disadvantage	0%	0%	5%	11%	0%	5%
Moderate Disadvantage	32%	0%	0%	0%	5%	0%
Severe Disadvantage	21%	0%	16%	0%	5%	0%

The objective of CEM, quite simply, is to select a group of current CU students that reproduce the percentages of students in the different categories of disadvantage, overachievement, and PGPA shown in Table 2.<sup>79</sup> In the language of CEM, the eighteen categories defined by the eighteen cells in Table 2 are called *strata*.<sup>80</sup>

Each stratum is defined by a unique combination of values on the categorical matching variables.<sup>81</sup> So, for example, one stratum would contain all the students who (1) exhibited moderate disadvantage and (2) no overachievement, and (3) had PGPA's below the fiftieth percentile (second row, first column in Table 2). The next step in CEM is straightforward: current class-based admits are defined as all the students in the current CU dataset located in a stratum occupied by at least one 2009 class-based admit.<sup>82</sup>

At this point, it may be useful to provide an example. Consider William, a class-based admit from the 2009 experiment. William exhibited high overachievement and

79. Failing to reproduce the percentages in Table 2 will bias results. For example, selecting too many students exhibiting no overachievement and severe disadvantage with PGPA's below the fiftieth percentile will produce results that represent that category of class-based admits quite well, and all other categories of class-based admits quite poorly.

80. See Iacus, King & Porro, *supra* note 70, at 350.

81. See *id.*

82. See *id.* This of course rules out any current students not identified by either index.

severe disadvantage, and had a PGPA below the fiftieth percentile—he thus fits in the third column, third row of Table 2. Every student in the current CU data who exactly matches that profile is considered a current class-based admit. This procedure is repeated for each of the nineteen class-based admits from the 2009 experiment.

Before the analysis of college outcomes, weights were applied to each stratum in the current CU dataset as follows:<sup>83</sup> Let  $N_t$  be the total number of 2009 class-based admits matched to at least one current CU student, and  $N_c$  be the total number of current class-based admits. Further, let  $N_t^s$  be the number of 2009 class-based admits in stratum  $s$ , and  $N_c^s$  be the number of current class-based admits in stratum  $s$ . The weight for stratum  $s$  ( $W_s$ ) is given by:

$$W_s = \frac{N_c}{N_t} \times \frac{N_t^s}{N_c^s}$$

Specifying weights for the current class-based admits completes the CEM procedure for that group. By matching

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83. The weighting procedure is an essential step of CEM. *See id.* In simple terms, weighting is the process by which different students in the data are given a different number of “votes” in the analysis. Imagine, for example, that 10 percent of the identified current class-based admits exhibited moderate disadvantage and no overachievement and had PGPA below the fiftieth percentile, while another 10 percent exhibited extraordinary overachievement and no disadvantage and had PGPA above the fiftieth percentile. These proportions would not match those from the 2009 experiment, where 32 percent of the class-based admits exhibited moderate disadvantage and no overachievement and had PGPA below the fiftieth percentile, and only 5 percent exhibited extraordinary overachievement, no disadvantage, and had PGPA above the fiftieth percentile. *See* Table 2.

In such a scenario, moderately disadvantaged (but not overachieving) class-based admits with lower PGPA in the current data should be given extra votes while extraordinary overachievers (in the “no disadvantage” category) with higher PGPA should be given fewer votes. Specifically, in this example, every current class-based admit who exhibited moderate disadvantage and no overachievement and had a PGPA below the fiftieth percentile would get approximately 3.2 votes (.32/.10), while every current class-based admit who exhibited extraordinary overachievement and no disadvantage and had a PGPA above the fiftieth percentile would get approximately 0.5 votes (.05/.1). In subsequent analyses (e.g., those focused on college grades), the undergraduate GPA of a student with 3.2 votes would have 3.2 times more influence on the mean GPA for all class-based admits than the GPA of a student from a stratum that only gets one vote. The GPA of a student with 0.5 votes would have half the influence of the GPA of a student from a stratum that gets one vote.

current CU students to class-based admits from the 2009 experiment, we have identified a group of current class-based admits. By applying weights to current class-based admits, we have ensured proportional representation in terms of the strata detailed in Table 2. Without weighting, disadvantaged students in the current data would be underrepresented, while overachieving students would be overrepresented. This misalignment could lead to biased conclusions, unduly influenced by overachievers. The same weighting rationale holds for our analysis of historical student data, which we address in the following section.

## 2. Identifying Historical Surrogates

From the historical CU data, we sought to identify a matched set of students to act as “surrogates” for the 2009 class-based admits. We use the term “surrogates” because historical students cannot be true class-based admits; CU did not use class-based affirmative action between 2000 and 2003.<sup>84</sup> For this group, the matching procedure was slightly different. Historical students attended CU long before the Disadvantage and Overachievement Indices were developed, so they cannot be matched to 2009 class-based admits using those measures. Instead, we used the two socioeconomic variables available in historical data—family income level and parents’ highest education level—along with PGPA. Both family income and parents’ education are already categorical variables, and did not require coarsening.<sup>85</sup> PGPA, however, was coarsened to 0.25 standard deviations, or 0.075 grade points. A narrower PGPA range was chosen for the historical data because Disadvantage and Overachievement Index values were not

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84. It may seem as though CU should never have enrolled class-based admits during those years. In fact, fluctuations in the depth and strength of applicant pools from year to year and the uncertainty inherent in undergraduate admissions produced numerous historical students (2,704, as noted in subsection 3) whose profiles closely match those of students admitted under the Disadvantage and Overachievement Indices.

85. When students apply to CU, annual family income is reported as one of seven categories: less than \$15,000; \$15,000 to \$34,999; \$35,000 to \$59,999; \$60,000 to \$74,999; \$75,000 to \$99,999; \$100,000 to \$149,999; and \$150,000 or more. See UNIV. COLO. BOULDER, UNDERGRADUATE APPLICATION FOR ADMISSION, available at [http://www.colorado.edu/admissions/undergraduate/sites/default/files/Domestic\\_Undergrad\\_Application\\_2015.pdf](http://www.colorado.edu/admissions/undergraduate/sites/default/files/Domestic_Undergrad_Application_2015.pdf) (last visited Oct. 29, 2014), archived at <http://perma.cc/XX79-HBU9>.

available for matching. Tighter constraints on PGPA helped ensure historical surrogates were comparable to the 2009 class-based admits in terms of academic preparation.

Once matching variables were coarsened, strata were defined by unique combinations of those characteristics. Again, an example may be useful. Consider Amy, one of the nineteen class-based admits from the 2009 experiment. Her family earned between \$35,000 and \$50,000 annually, and both her parents finished high school but neither enrolled in college. Her PGPA was between 2.66 and 2.73. Every student in the historical data matching that profile exactly is considered a historical surrogate. This procedure was repeated for each of the nineteen class-based admits from the 2009 experiment.

The weighting procedure for the historical surrogates is identical to that for the current class-based admits. It is worth reiterating here that applying weights under CEM is crucial, especially for historical surrogates. The 2009 class-based admits that are most likely to be matched to numerous surrogates are those that are most likely to have been admitted to CU in the past—specifically, applicants with higher high school academic credentials. Without weighting, high-performing students would be overrepresented in the surrogate group. Their influence would artificially inflate estimates of college performance for class-based admits, painting an unrealistically optimistic picture of post-secondary success.

Having selected both current and historical matches, we next evaluate the quality of those matches before assuming we can learn from these students' experiences.

### 3. Evaluating the Matching Procedure

There are two key questions we address to evaluate the matches obtained for the 2009 class-based admits. Those questions focus on the number of matches successfully established and the overall quality of those matches. More specifically, (1) how many of the 2009 class-based admits were matched to current class-based admits and historical surrogates, and (2) how similar do the 2009 class-based admits look to both the current class-based admits and historical surrogates in terms of the matching characteristics? As a general rule, 2009 class-based admits who were difficult to match tended to be those with very low SES and marginal

academic credentials—in other words, those with severe disadvantage and no overachievement. These are the students we are most concerned about in any investigation of academic mismatch because they are the students with the weakest academic credentials of the entire pool of admitted students. As such, we focused on CEM procedures that assigned matches to as many of those class-based admits as possible.<sup>86</sup>

When we identified current class-based admits, every one of the 2009 class-based admits was matched, to a total of 1,383 current CU students. When we identified historical surrogates, eighteen of nineteen 2009 class-based admits were matched, to a total of 2,704 historical students. As we might expect, the single unmatched 2009 class-based admit was a low-SES applicant with low academic credentials. Neither of his parents earned a high school diploma, and his PGPA was 2.07. The absence of a historical match for this student may not be surprising; the class-conscious policies that would have given him a leg up in the admissions process were not in place between 2000 and 2003.

The most important validity check in any analysis that relies on matching is an examination of *covariate balance*—the extent to which the values of matching variables are similar across matched groups.<sup>87</sup> In the case of current class-based

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86. For example, an alternate approach would be to set narrower bounds in the coarsening procedure, such that PGPA is coarsened to 0.1 standard deviations rather than 0.25. This would yield better matches (no student would be matched to anyone more than 0.1 standard deviations away in terms of high school grades and admissions test scores), but more students would not be matched at all, and would therefore be discarded in the analysis. The same principle holds if rather than establishing narrower bands, we were to incorporate more matching variables, such as high school GPA and admissions test scores, as opposed to the PGPA composite that summarizes both in a single measure. A general rule in CEM is that more matching variables or narrower coarsened categories translates to more matching strata, which results in more precise matches for the observations that are retained, but more discarded observations. Other authors have sought to maximize the number of matches in CEM. *Cf.* Gretchen Stevens, Gary King & Kenji Shibuya, *Deaths From Heart Failure: Using Coarsened Exact Matching to Correct Cause of Death Statistics*, 8 POPULATION HEALTH METRICS (2010), available at <http://www.pophealthmetrics.com/content/8/1/6>, archived at <http://perma.cc/J8TK-M8RE> (researchers studying heart failure sought to assign at least one matched “control” death for every “treatment” death).

87. The immediate goal of any matching procedure is to improve balance across measured characteristics between two groups. *See, e.g.*, Daniel Ho, Imai Kosuke, Gary King & Elizabeth Stuart, *Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference*, 15 POL. ANALYSIS 199, 215–16 (2007).



2015]

## FROM ACCESS TO SUCCESS

455

admits, those matching variables were Disadvantage and Overachievement Index classifications, and PGPA. Our analyses indicate excellent balance across the matched groups. After weights were applied, the distributions of 2009 class-based admits and current class-based admits across categories of disadvantage, overachievement, and PGPA were identical. Table 3 details this comparison.

*Table 3. Covariate Balance on Index Classifications, Current Class-Based Admits*

		No Overachievement		High Overachievement		Extraordinary Overachievement	
		PGPA < 50th Percentile	PGPA > 50th Percentile	PGPA < 50th Percentile	PGPA > 50th Percentile	PGPA < 50th Percentile	PGPA > 50th Percentile
No Disadvantage	Current Class-Based Admits	0%	0%	5%	11%	0%	5%
	2009 Class-Based Admits	0%	0%	5%	11%	0%	5%
Moderate Disadvantage	Current Class-Based Admits	32%	0%	0%	0%	5%	0%
	2009 Class-Based Admits	32%	0%	0%	0%	5%	0%
Severe Disadvantage	Current Class-Based Admits	21%	0%	16%	0%	5%	0%
	2009 Class-Based Admits	21%	0%	16%	0%	5%	0%

Covariate balance for the historical matches was equally strong. In this case, we aimed for balance on PGPA and the two available socioeconomic characteristics—parents' education and family income. Table 4 presents means and standard deviations for PGPA, parents' education, and family income, for both the 2009 class-based admits and their historical surrogates. Tables 3 and 4 suggest adequate balance on the covariates used for matching 2009 class-based admits to both current and historical CU students.

*Table 4. Academic and Socioeconomic Characteristics of 2009 Class-Based Admits and Historical Surrogates*

Measure	Class-Based Admits			Surrogates		
	N	Mean	SD	N	Mean	SD
PGPA	18	2.55	0.35	2,704	2.55	0.35
Parents' Education	18	4.33	1.53	2,704	4.33	1.49
Family Income	18	3.33	1.41	2,704	3.33	1.37

We have taken the time to walk readers through the matching process prior to our analysis of college outcomes because it is important to provide evidence that the CU students selected as current class-based admits and historical surrogates represent valid matches for the class-based admits identified under controlled experimental conditions. In the next section, we present our findings. By examining measures of college success for current class-based admits and historical surrogates, we assess whether or not a college or university implementing class-based affirmative action can expect the beneficiaries of that policy to succeed in college.

### *C. Findings*

In this section we present outcomes for the two separate groups of students described above—current class-based admits and historical surrogates. Outcomes for current class-based admits are particularly interesting because these students applied to and were enrolled at CU when the Disadvantage and Overachievement Indices were fully implemented. Thus, these students are true beneficiaries of class-based affirmative action. Of course, they have only been in college for two years, so the full story of their college performance has not yet been written. Historical surrogates, on the other hand, attended CU long enough in the past that we can examine critical long-term measures such as four-year and six-year graduation rates. We will examine all outcomes for current class-based admits first in subsection 1, and subsequently turn our attention to historical surrogates in subsection 2.

### 1. Current Class-Based Admits

Analyses of grades and first-year retention rates for current CU students suggest that class-based admits perform less well than typical undergraduates at CU, but that the mean first-year GPA for class-based admits is comfortably above the 2.0 GPA cut-off that CU has established for academic probation. Table 5 presents these results. Note that first-year retention rate, a common statistic examined in higher education research,<sup>88</sup> represents the percentage of freshman students who returned for their sophomore year. As a baseline for comparison, Table 5 also presents college outcomes for all current CU students *not* categorized as class-based admits. Standard deviations are included parenthetically.

*Table 5. Academic Progress of Current Class-Based Admits*

Group	N	Freshman-Year GPA	Sophomore-Year GPA	First-Year Retention Rate
Class-Based Admits	1,383	2.52 (0.73)	2.54 (0.77)	75.7%
Baseline	9,685	2.88 (0.75)	2.92 (0.69)	83.4%

Table 5 shows that across measures, college outcomes were lower for class-based admits than for all other undergraduates at CU. With respect to both freshman- and sophomore-year GPA, these differences were roughly equivalent to one half of a standard deviation—a substantial drop off in college performance. More than three-quarters of class-based admits returned for their second year of college, but first-year retention rates for class-based admits still lag behind the baseline.

Interestingly, the college outcomes detailed above vary depending upon how class-based admits were identified by the indices. Recall that students can be strictly overachieving, both

88. See, e.g., Alexander W. Astin, *How 'Good' is Your Institution's Retention Rate?* 38 RES. HIGHER EDUC. 647 (1997); see also Robert D. Reason, *Student Variables that Predict Retention: Recent Research and New Developments*, 40 NASPA J. 172 (2003).

disadvantaged and overachieving, or strictly disadvantaged.<sup>89</sup> The University is more likely to see impressive college outcomes for strictly overachieving class-based admits. For example, 291 current class-based admits were identified by the Overachievement Indices but *not* by the Disadvantage Index. They are performing relatively well in college, with GPAs and retention rates close to those of typical CU undergraduates. On the other hand, 728 current class-based admits were identified by the Disadvantage Index but not by the Overachievement Indices. Those students are not performing as well in college, with outcomes slightly lower than other class-based admits and substantially lower than typical undergraduates. These results are presented in Table 6.

*Table 6. College Outcomes for Current Class-Based Admits, by Index Classification*

Group	N	Freshman-Year GPA	Sophomore-Year GPA	First-Year Retention Rate
Class-Based Admits (Overachievers)	291	2.77 (0.42)	2.81 (0.41)	80.6%
Class-Based Admits (Disadvantaged)	728	2.44 (0.96)	2.43 (1.24)	71.0%
Baseline	9,685	2.88 (0.75)	2.92 (0.69)	83.4%

As shown in Table 6, strictly overachieving class-based admits are keeping pace with typical undergraduates, with

89. As long as they match the academic and socioeconomic profiles of the class-based admits from the 2009 experiment, strictly overachieving students not flagged by the Disadvantage Index are still considered class-based admits, because they are identified by an index that accounts for and adjusts for socioeconomic circumstances. Imagine two applicants with equivalent high school grades and SAT scores. The student with lower socioeconomic status will have higher Overachievement Index values, and will therefore earn a class-based boost in the admissions process, even if he or she does not reach the moderate disadvantage threshold under the Disadvantage Index. Indeed this was the case for the four students in the 2009 experiment exhibiting overachievement but no disadvantage. Each had a Disadvantage Index value close to, but just below, the moderate disadvantage threshold.

similar retention rates and GPAs just 0.11 grade points below the baseline. Strictly disadvantaged class-based admits are not performing as well, although more than seven in ten are staying in school into their sophomore year, and their mean GPAs are well above the threshold (2.0) at which students are placed on academic probation at CU. Thus far, our results suggest that while class-based admits perform below average in college, they are succeeding. Still, first- or second-year grades are not as important as ultimately earning a bachelor's degree. To investigate graduation rates for class-based admits, we now turn to the historical data.

## 2. Historical Surrogates

Analyses of grades, and graduation rates for the historical surrogates again suggest college outcomes will be lower for class-based admits than for typical undergraduates at CU.<sup>90</sup> Table 7 summarizes these results. As a baseline for comparison, Table 7 also includes outcomes for all historical students *not* categorized as surrogates. Standard deviations are included parenthetically.

*Table 7. College Outcomes for Historical Surrogates*

Group	N	Cumulative GPA	% Graduating, 4 Years	% Graduating, 5 Years	% Graduating, 6 Years
Surrogates	2,704	2.50 (0.76)	28.3%	44.3%	52.9%
Baseline	18,422	2.83 (0.77)	39.8%	61.4%	66.0%

Table 7 shows patterns for historical surrogates quite similar to those estimated for current class-based admits. Again, GPAs for the historical surrogates are roughly 0.5 standard deviations below the baseline. More than half of the historical surrogates eventually graduated from college, but

90. Typical CU undergraduates were more likely than current class-based admits or historical surrogates to enroll in more selective undergraduate programs (e.g., engineering) at CU. Still, our results do not change if the analysis is restricted to only those students who enrolled in the less selective College of Arts and Sciences.

their graduation rates at four, five, and six years lagged significantly behind the graduation rates of other CU students.<sup>91</sup> Still, as a share of the baseline graduation rates, surrogates' graduation rates increased following additional years of college. The surrogates' graduation rate was 71 percent of the baseline graduation rate after four years ( $0.283/0.398=0.711$ ), 72 percent after five years, and 80 percent after six years. Therefore, it seems graduation rates for class-based admits may begin to approach baseline graduation rates given additional years in college.

Finally, and again not surprisingly, estimates of college outcomes vary depending on how 2009 class-based admits were identified by the indices. For example, four class-based admits from the 2009 experiment were identified by the Overachievement Indices but *not* by the Disadvantage Index.<sup>92</sup> Those class-based admits have 601 historical surrogates, and those surrogates performed well in college. In fact, their GPAs and graduation rates surpassed the baseline. In contrast, ten class-based admits from the 2009 experiment were identified by the Disadvantage Index but *not* by the Overachievement Indices. They were assigned 1,352 historical surrogates. Those surrogates did not fare as well in college, with GPAs and graduation rates substantially lower than those of typical CU undergraduates. These results are presented in Table 8.

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91. Again, estimates based on historical and current CU data use the CEM weighting procedure. If weights were not applied, overachieving students could be overrepresented in the class-based admit populations and estimates of college outcomes could be artificially inflated. For example, when weights are not applied, 68 percent of historical surrogates (rather than 52.9 percent) graduated in six years, and they earned an average college GPA of 2.84 (rather than 2.50). Weighting reduces bias by ensuring proportional representation, i.e., that historical and current class-based admit populations are representative of the 2009 class-based admit group identified under experimental conditions.

92. See *supra* note 89 for an explanation of why students identified only by the Overachievement Index are still considered class-based admits.

2015]

FROM ACCESS TO SUCCESS

461

*Table 8. College Outcomes for Historical Surrogates, by Index Classification*

Group	N	Cumulative GPA	% Graduating, 4 Years	% Graduating, 5 Years	% Graduating, 6 Years
Surrogates (Overachievers)	601	2.95 (0.72)	44.9%	66.4%	70.0%
Surrogates (Disadvantaged)	1,352	2.25 (0.73)	18.2%	30.9%	42.6%
Baseline	18,422	2.83 (0.77)	39.8%	61.4%	66.0%

Table 8 suggests that in the long term, strictly overachieving class-based admits will more than keep up with typical undergraduates at CU. The overachievers' mean cumulative GPA was 0.12 grade points *higher* than the baseline (2.95 versus 2.83), and their six-year graduation rate was 4 percentage points higher (70 percent versus 66 percent). On the other hand, strictly disadvantaged class-based admits will be more likely than other undergraduates to struggle in college. Their four-year graduation rate (18.2 percent) was substantially lower than the baseline, although it is important to note that their graduation rate climbed significantly given additional time in college, more than doubling to 42.6 percent after six years. Disadvantaged surrogates' cumulative GPAs were still well above the threshold for academic probation at CU, although ultimately less than half of them graduated in six years or fewer. The aggregate picture of college success for the historical surrogates of class-based admits is therefore a mixed one.

### 3. From Statistics to Stories

Thus far, we have presented aggregate statistics for large groups of current class-based admits and historical surrogates. Statistics are an essential tool for understanding how policy choices affect groups of people; but in discussions about college success it is important to be mindful that we are talking about individual students and their personal experiences. To that end, our analysis of affirmative action outcomes can be

enriched by a closer examination of the full college careers of a few historical students whose high school academic credentials and socioeconomic characteristics represent *perfect* matches (i.e., identical PGPA, levels of parents' education, and levels of family income) for some of the nineteen class-based admits that emerged from the 2009 experiment. Below, five such students are profiled.<sup>93</sup> These descriptions are constructed from the historical dataset. Confidentiality agreements did not permit more thorough qualitative analytic procedures, such as interviews or in-depth reviews of students' work. Still, these brief accounts provide context that the summative analyses above lack.

*Richard Healy* began his undergraduate career at CU in the fall of 2003. His PGPA was 2.05, which means his grades and test scores in high school placed him roughly at the first percentile among students who enroll at CU. Richard's parents made between \$25,000 and \$50,000 annually. At least one of his parents had graduated from high school, but neither had attended college. Richard is a surrogate for a 2009 class-based admit identified by the indices as severely disadvantaged and exhibiting high overachievement. Such an identification merits a primary factor boost in the admissions process: all else equal, applicants identified for a primary factor boost are 5.7 times more likely to be admitted to CU.<sup>94</sup> Richard majored in international affairs and earned a 3.16 cumulative GPA while graduating from CU in four years.

*Daniela Hilario* enrolled at CU in 2002. Her PGPA was 2.13, which placed her around the second percentile of CU students in terms of high school academic performance. Her parents earned between \$25,000 and \$50,000, but neither graduated from college. Daniela is a surrogate for a student identified by the indices as severely disadvantaged, but exhibiting no overachievement. This identification would translate to a primary factor boost in the admissions process.<sup>95</sup> Daniela majored in English, graduated from CU in six years, and earned a 3.22 undergraduate GPA.

*Steven Vogelman* came to CU in the fall of 2002. His PGPA was 2.75, which placed him at the thirty-fifth percentile of CU

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93. To protect confidentiality, pseudonyms are used throughout these descriptions.

94. See Gaertner & Hart, *supra* note 15, at 393.

95. See *id.*



undergraduates. Steven's parents made between \$15,000 and \$35,000. Both of his parents earned high school diplomas, but neither attended college. Steven is a surrogate for a 2009 student identified as severely disadvantaged and exhibiting high overachievement. Steven was a psychology major and he graduated from CU in five years with a 3.44 GPA.

*Alice Howard* began her CU undergraduate career in 2000. Like Daniela, Alice had a PGPA of 2.13. Her parents also earned between \$25,000 and \$50,000, but neither graduated from college. She is a surrogate for a student identified as severely disadvantaged, without measurable overachievement. Alice left CU in the middle of her sophomore year and did not graduate. Her GPA at the time of her departure was 1.65.

*Andrea Molina* enrolled at CU in the fall of 2002. Her PGPA was 2.45—at about the seventh percentile among CU undergraduates. At least one of her parents graduated from college and completed some postgraduate study, but her family earned between \$15,000 and \$35,000 annually. Andrea is a surrogate for a 2009 class-based admit identified as moderately disadvantaged, without measurable overachievement. Such an identification translates to a secondary factor boost in the admissions process.<sup>96</sup> Although Andrea was admitted to the College of Arts and Sciences, she never declared a major. She left CU during her junior year with a GPA of 2.75; she did not graduate.

This multifaceted analysis of college outcomes suggests that post-secondary success for class-based admits is possible, though certainly not guaranteed. Of course, the measures of college success available for our analysis may not adequately capture all the benefits that exposure to higher education will yield for disadvantaged students; these measures also may not capture all the benefits that the presence of disadvantaged students will yield for the university's educational community. Disadvantaged students' cumulative GPAs may lag behind those of their peers, and they may require more time in college to earn a degree, but the ultimate attainment of such a degree has been shown to confer tremendous rewards.<sup>97</sup> Compared to

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96. *See id.*

97. *See Carnevale & Strohl, supra* note 29, at 71–72; David Card, *The Causal Effect of Education on Earnings*, in HANDBOOK OF LABOR ECONOMICS, 1801–63 (Orley C. Ashenfelter & David Card eds., 1999); David Card & Alan B. Krueger, *Does School Quality Matter? Returns to Education and the Characteristics of*

their undergraduate peers, however, we can expect fewer class-based admits to graduate from college. We can also expect, on average, lower college grades from class-based admits. This will be especially true of students singled out solely by the Disadvantage Index. These general findings are illustrated with the qualitative descriptions provided above; two of the five historical students failed to graduate from CU.<sup>98</sup> Both of those students came from disadvantaged backgrounds, but neither of them exhibited measurable overachievement compared to what would be expected of students facing those disadvantages. While not all students with this profile will leave college without a degree, any evaluation of the merits of an affirmative action system must acknowledge that for some number of students, the opportunity to earn a degree does not end in successful attainment of that degree.<sup>99</sup>

At the same time, more than half of the matched surrogates did ultimately earn a college degree, and three of the profiled historical students overcame substantial obstacles to compile impressive undergraduate records at CU. These individual profiles find corresponding results in the larger pools of students that formed our statistical analysis. Among current class-based admits, more than 75 percent have returned for their sophomore year. Their grades are lower than those of their fellow undergraduates, but still sufficiently high to progress through college. And class-based admits who are identified thanks to overachievement in high school may perform quite well in college—in fact, they perform as well or

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*Public Schools in the United States*, 100 J. POL. ECON. 1, 20–22 (1992); Lance Lochner & Enrico Moretti, *The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports*, 94 AMER. ECON. REV. 155, 160–67 (2004); Pedro Carneiro & James J. Heckman, *The Evidence on Credit Constraints in Post-Secondary Schooling*, 112 ECON. J. 989, 1016 (2002).

98. See text accompanying notes 93–97.

99. It is also useful to point out that completing even some college, short of degree attainment, may still be a worthwhile investment. Research on the economic returns of less than four years in a Bachelor's degree program is limited, but a recent analysis from the Federal Reserve Bank of San Francisco indicates students who complete some college but do not earn a degree still enjoy a significant wage premium—roughly \$5,000 per year (see Figure 1)—over their counterparts who did not attend college at all. In Figure 1 we see the “some college” premium holding roughly steady around \$5,000, between 1973 and 2008. See Mary C. Daly & Leila Bengali, *Is It Still Worth Going to College?*, FED. RES. BANK S.F. (May 5, 2014), <http://www.frbsf.org/economic-research/publications/economic-letter/2014/may/is-college-worth-it-education-tuition-wages>, archived at <http://perma.cc/67DZ-A8Q2>.

better than typical CU undergraduates.

Of course, this research represents a single case study. Therefore, what it gains from in-depth examination of class-based policies at one institution, it may lose in generalizability. Because most of the research that has been done on affirmative action has focused on elite, highly selective universities,<sup>100</sup> researchers may be particularly curious about whether or not our conclusions would apply in the same way to these institutions. One could imagine that the marginal students at CU, which has an undergraduate acceptance rate of about 84 percent, would be generally less prepared for college than the marginal students at an elite school that accepts only 7 percent of applicants.<sup>101</sup> Many of the applicants currently refused admission from elite schools who might end up being accepted under a system of class-based affirmative action may therefore be fully capable of handling the work. On the other hand, proponents of the mismatch theory have generally focused their attention on students at elite institutions, arguing that students given an admissions boost at these schools are ultimately harmed by that boost just as much as students at less selective schools.<sup>102</sup> Policy debates about the strengths and weaknesses of class-based affirmative action will certainly benefit from additional research at a diverse cross-section of institutions so that the effects of different admissions approaches within different levels of selectivity can be empirically tested. Nonetheless, these findings have a number of important policy implications, to which we turn in Part III.

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100. See, e.g., ESPENSHADE & RADFORD, *supra* note 6, at 2 (noting that their work addresses “the role of elite higher education”); BOWEN & BOK, *supra* note 6, at xxvi (same).

101. See *National University Rankings*, U.S. NEWS AND WORLD REP., <http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/national-universities/data>, archived at <http://perma.cc/MQD8-NS9W> (reporting acceptance rates at CU-Boulder (83.6 percent in 2012) and the top-ranked schools (e.g., Princeton 7.9 percent; Harvard 6.1 percent)).

102. See, e.g., SANDER & TAYLOR, *supra* note 3, at 17, 19, 26 (explaining their focus on “elite colleges and professional schools” but also discussing the “cascade effect,” which they argue leads to application of affirmative action in both elite and non-elite institutions).

### III. IMPLICATIONS FOR AFFIRMATIVE ACTION AND COLLEGE SUCCESS

At least three important points can be drawn from this research, and we examine those points in this Part. First, in section A, our findings present a significant challenge to the mismatch theory: students admitted under class-based affirmative action performed as well or better in year two as in year one and their rates of graduation increased significantly over time. These findings contradict a central assumption of the mismatch theory: that students admitted under affirmative action will do progressively worse in school as time passes, leading ultimately to fewer career opportunities.<sup>103</sup> Without that central premise, mismatch theory is simply a complaint that students with lower entering academic credentials are more likely to be in the bottom half of the class.<sup>104</sup> In section B, we discuss the implications of our finding that schools can identify, within those populations whose contributions to campus diversity warrant additional admissions consideration, those individuals most likely to succeed. Finally, in section C, we consider what schools—whether colleges or law schools—can and should be doing to support success for admits who are predictably more likely to find school challenging.

#### A. *An Empirical Challenge to Mismatch Theory*

Sander and other proponents of the theory are not simply using “mismatched” as a label to describe students with lower academic credentials who attend school alongside students with higher credentials. Nor is the claim simply that students who start with lower academic indicators will end up with lower academic indicators. The mismatch claim instead

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103. See, e.g., Sander, *supra* note 2, at 434–36, 448–55.

104. This may still leave open the question of whether it is better to be in the bottom half of the class at a more prestigious institution or in the top half of the class at a less prestigious school. We are not entering that particular debate in this Article. It is worth noting, however, that many minority and low-SES applicants with marginal academic credentials apply to far fewer colleges than their wealthier non-minority peers, so the alternative to a school like CU for a class-based admit may not be a lower-ranked four-year college but rather a two-year degree program. See Sylvia Hurtado, Karen Kurotsuchi Inkelas, Charlotte Briggs & Byung-Shik Rhee, *Differences in College Access and Choice among Racial/Ethnic Groups: Identifying Continuing Barriers*, 38 RES. IN HIGHER ED. 43, 64 (1997).

supposes that because of an initial difference in credentials, lower-performing students will learn less and do progressively worse as time passes—that is, their performance will decline relative to their peers—thanks to their below-average incoming credentials.<sup>105</sup> The idea “is based on the assumption that classroom instruction is directed to the median student,” and that “students too far below the median may struggle to understand class discussions and to keep up with the pace of instruction.”<sup>106</sup> This struggle to keep up will cause students to become discouraged and ultimately contribute to a downward achievement spiral.

In the law school context, for example, Sander argues that black bar passage rates would be higher if black students were going to less elite schools because:

[I]f there is a very large disparity at a school between the entering credentials of the ‘median’ student and the credentials of students receiving large preferences, then the credentials gap will hurt those the preferences are intended to help. A large number of those receiving large preferences will struggle academically, receive low grades, and actually learn less in some important sense than they would have at another school where their credentials were closer to the school median. The low grades will lower their graduation rates, bar passage rates, and prospects in the job market.<sup>107</sup>

Our study of class-based admits shows that this declining performance is not occurring within this cohort, despite the fact that they enter CU with lower academic credentials than those of the typical CU student. Instead, students who entered CU with lower credentials generally performed less well than typical undergraduates (on average, we should expect this), but their performance relative to their peers remained stable over

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105. See Sander, *supra* note 2; Wilkins, *supra* note 6, at 1916–17 (observing that low grades alone are not the problem identified by the mismatch theory).

106. Doug Williams, *Do Racial Preferences Affect Minority Learning in Law Schools?*, 10 J. EMPIRICAL LEGAL STUD. 171, 176 (2013).

107. Richard H. Sander, *A Reply to Critics*, 57 STAN. L. REV. 1963, 1966 (2005). While Sander’s focus in his discussions of affirmative action and law school is on bar passage rates, the argument that Sander and Taylor make in their more recent book is that the same phenomenon of declining performance occurs at the college level as well. See SANDER & TAYLOR, *supra* note 3, at 4–7. Because there is no equivalent post-collegiate test to compare to the bar exam, evaluation of mismatch at the college level looks at grades and graduation rates.

time. Class-based admits had a freshman year mean GPA of 2.52, compared to 2.88 for the baseline. For sophomore year, the GPA of class-based admits rose very slightly to 2.54, and the baseline GPA similarly increased very slightly to 2.92. The gap was stable at about half of a standard deviation, and this trend holds true for cumulative college GPA: half a standard deviation separates the typical CU undergraduate (2.83) from the average class-based admit (2.50). Trends in graduation rates follow suit. Between four and six years, typical undergraduates' graduation rates increase 26.2 percentage points from 39.8 percent to 66 percent, or a 66 percent increase. Similarly, class-based admits' overall graduation rates increase 24.6 percentage points from 28.3 percent to 52.9 percent, or an 87 percent increase.

The fact that the progressively growing achievement gap predicted by mismatch theory is not occurring in this group suggests one of two things. First, it may suggest that the phenomenon of mismatch is simply not occurring generally. Two other recent studies lend further support to this possibility. One, a study of students at the University of California at Berkeley, found that when researchers adequately control for students' educational backgrounds, evidence of mismatch essentially disappears.<sup>108</sup> In the second, a study of a nationally representative sample of college students, another group of researchers found that college selectivity has at most a negligible effect—positive or negative—on a student's likelihood of graduating.<sup>109</sup> Many studies have, in fact, revealed lessons entirely opposite to the conventional mismatch wisdom: attending a school whose median student credentials are higher than your own will lead to *better* performance, because students are generally motivated by the impressive academic performance of their peers.<sup>110</sup> Ultimately, while it remains somewhat unclear whether college selectivity has negative, positive, or very little

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108. Kurlaender & Grodsky, *supra* note 10.

109. Scott Heil, Liza Reisel & Paul Attewell, *College Selectivity and Degree Completion*, 20 AM. EDUC. RES. J. 1 (2014), available at <http://aer.sagepub.com/content/early/2014/07/25/0002831214544298>, archived at <http://perma.cc/5FBJ-NP8S>.

110. See, e.g., BOWEN & BOK, *supra* note 6, at 61 (finding that, all else equal, attending a more selective school increases the chance of degree attainment); ESPENSHADE & RADFORD, *supra* note 6, at 234–35 (same); BOWEN, CHINGOS & MCPHERSON, *supra* note 6, at 209 (same).

effect on the performance of students whose academic credentials are below average at their school,<sup>111</sup> our findings are consistent with the many empirical challenges to the claims of the mismatch theory.<sup>112</sup>

A second, slightly different conclusion might be drawn from our findings to the extent empirical information does demonstrate a progressively growing achievement gap between black students and their white peers. Given the absence of a mismatch effect in this class-based affirmative action cohort, any growing gap between underrepresented minority students and their white peers must be explained by something other than mismatch. Race and mismatch share no logical relationship, and yet they are consistently discussed as if they are directly connected.<sup>113</sup> By shifting the focus away from race and instead studying students who were admitted to school as a result of a class-based admissions boost, our research demonstrates that mismatch does not occur simply because a student is admitted to a school as a result of an admissions boost. That being the case, what else might explain a growth in achievement gaps during law school?

Some scholars have posited that black-white achievement gaps are more likely explained by race-based barriers to

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111. See, e.g., *supra* note 6.

112. As a recent review of the literature on the effects of college selectivity on student outcomes noted, “[d]espite multiple studies and considerable methodological sophistication, the research literature on college selectivity and college completion offers contradictory hypotheses and reports conflicting findings.” Heil, Reisel & Attewell, *supra* note 109, at 6.

113. See, e.g., Barnes, *supra* note 6, at 1806–07; Kurlaender & Grodsky, *supra* note 10, at 1–2. Sander seems to believe that they are connected to at least some extent. In discussing class-based affirmative action, he has said that “any schools giving more emphasis to SES preferences, and less emphasis to racial preferences, would likely reduce mismatch effects to the extent they exist.” Richard H. Sander, *Class in American Legal Education*, 88 DENV. U. L. REV. 631, 666 (2011). He supports this claim with the assumption that “SES preferences would tend to be smaller, since they are less used and since the credentials gap between low- and high-SES students is smaller than the credentials gap between blacks, American Indians, and Hispanics on the one hand, and whites on the other.” *Id.* at 666–67. This argument is flawed in several respects. First, the fact that SES preferences are less used bears no necessary connection to the size of the preference. Indeed, at CU, the boost associated with low-SES status is more significant than the admissions boost associated with minority status. See Gaertner & Hart, *supra* note 15, at 393. As to Sander’s claim about the credentials gap, it is not supported by the citation he provides. If mismatch occurs in the way Sander asserts that it does, then it should occur regardless of the race of the allegedly mismatched student.

success in academic settings.<sup>114</sup> If achievement gaps in fact grow progressively when measuring underrepresented minority student performance, but do not grow when measuring the performance of students admitted through class-based affirmative action, then something other than the difference in incoming academic credentials must explain that difference. Absent some other plausible explanation, it seems entirely possible that the racial atmosphere in colleges and universities may be the culprit. If that is the case, schools seeking to address growing achievement gaps must focus on addressing race-based barriers.<sup>115</sup>

### *B. Identifying Strivers*

One of the best arguments for affirmative action is that it enables students to succeed in college thanks to an admissions boost that offers them an otherwise unavailable opportunity. The Overachievement Index helps CU accomplish that goal. More specifically, our analyses show that there are some students who (1) are identified by the Overachievement Indices, (2) would not be admitted to CU without a class-based admissions policy, and (3) ultimately perform just as well as (and in the long term, potentially better than) typical undergraduates.

In the landscape of class-conscious admissions, an outcome like this sells itself. Overachieving class-based admits are identified by an index that predicts college success, yet by construction is unrelated to their socioeconomic backgrounds.<sup>116</sup> The index therefore avoids the criticism (often

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114. See, e.g., Barnes, *supra* note 6, at 1763.

115. See, e.g., Bowen, *supra* note 6, at 788 (arguing that we should “revolutionize our educational institutions by implementing color consciousness rather than just inviting diversity in. In doing so, we can acknowledge the different social contingencies under which our students operate. As administrators, professors, and fellow students, we can learn to respond accordingly”).

116. Statistically speaking, the Overachievement Index is uncorrelated with socioeconomic characteristics because it is a residual from the regression of an academic credential (e.g., SAT score) on socioeconomic predictors. See Gaertner & Hart, *supra* note 15, at 383–85. In simpler terms, the Overachievement Index compares an applicant’s academic credentials with those of her socioeconomic peers. Any differences in academic credentials between the applicant and her socioeconomic peers cannot be attributed to differences in socioeconomic backgrounds.



leveled at entrance exams) that it is a “wealth test”<sup>117</sup> and boosts campus socioeconomic diversity by identifying applicants who, admissions test scores and grades held constant, are lower SES. The Disadvantage Index, on the other hand, identifies for additional consideration those students who have faced tremendous socioeconomic barriers to college access. These students—like those who receive an admissions preference based on race—are vital to campus diversity, but their academic needs will differ from those of typical undergraduates; we turn to this point next.

### C. Supporting Success

Not every class-based admit will be identified as an overachiever, but even for the strictly disadvantaged admits success is a very real possibility. First, disadvantaged admits’ cumulative GPA of 2.25 is well above the 2.0 cut-off for academic probation at CU. Second, although four-year graduation rates for this group are low, those rates more than double after six years, strongly suggesting severely disadvantaged students may simply require more time to finish a degree. Finally, it is reasonable to suspect that robust support systems of the sort that have become increasingly common at both the college and the law school level could boost the odds of success for at least some low-income, marginally qualified students.<sup>118</sup>

One approach would be to start students identified as disadvantaged in support programs from the moment they matriculate, or even before their first semester. A number of schools have adopted that approach at both the college and the law school levels.<sup>119</sup> In both contexts, experts have increasingly recognized the potential for improving academic success rates for non-traditional students by targeting not only the students’

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117. See, e.g., Rebecca Zwick, *Is the SAT a ‘Wealth Test?’*, 84 PHI DELTA KAPPAN 307 (2002).

118. See, e.g., Paul Tough, *Who Gets to Graduate?*, N.Y. TIMES MAG. (May 15, 2014), <http://www.nytimes.com/2014/05/18/magazine/who-gets-to-graduate.html>, archived at <http://perma.cc/6E62-FPP3> (discussing evidence of the benefits of support systems for low-income students entering college).

119. See, e.g., Jean Boylan, *The Admission Numbers Are Up: Is Academic Support Really Necessary?*, 26 J. JUV. L. 1, 3–7 (2006) (discussing a variety of law school academic support programs); Judith J. Devine & Jennifer D. Odom, *Do Academic Support Programs Reduce the Attrition Rate of First-Year Law Students?*, 29 T. MARSHALL L. REV. 209, 212–15 (2004).

academic needs, but also the social and cultural experiences that can create very different pressures on lower-income students in an academic environment.

At the college level, one of CU's several academic support programs provides a rich example of the kind of multi-faceted approach that seems most likely to promote success for non-traditional students. The University's McNeill Academic Program is a structured support system specifically designed to help eligible students graduate with university degrees and ultimately become leaders in their communities.<sup>120</sup> While participants in McNeill are not necessarily those designated by the Disadvantage Index, students from non-traditional backgrounds are the core of the program. McNeill is designed around the notion that academic success in college requires not only content knowledge, but also interpersonal connections, social engagement, and a commitment to self-development through study.<sup>121</sup> As such, the program is not solely a tutoring or advising service; instead, it integrates core instruction in foundational skills with opportunities for leadership and networking with University faculty and community professionals within the student's field of study.<sup>122</sup>

Each McNeill student is assigned a coordinator who provides academic planning and personal guidance, connecting the student to both academic enrichment and professional networking opportunities on campus.<sup>123</sup> Each student, in turn, must meet regularly with the coordinator, complete required courses in math and writing, use academic skills services or supplementary instruction, and participate in community-building events from freshman year to graduation.<sup>124</sup> The McNeill Program is intended to be an academic support program rather than a financial aid provider, but it does offer a modest number of scholarships each year to support low-income, first-generation, and other non-traditional students.<sup>125</sup>

Other schools have programs with similar goals and structures. For example, numerous schools around the country

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120. See *McNeill Academic Program*, UNIV. COLORADO, <http://www.colorado.edu/sasc/mcneill> (last visited Sept. 7, 2014), archived at <http://perma.cc/U4S4-ZDBU>.

121. *Id.*

122. *See id.*

123. *See id.*

124. *See id.*

125. *See id.*

participate in the TRIO Opportunity Scholars Programs, federally funded initiatives established to help lower-income and first-generation college students adjust to the college environment.<sup>126</sup> The Opportunity Scholars Programs are available at a range of colleges and universities around the country. Two examples with similar profiles to CU are the University of South Carolina and the University of Florida.<sup>127</sup>

South Carolina's program is intended for first-generation college students; it provides tutoring, mentoring, cultural enrichment, and guidance on undergraduate research projects, along with tuition reduction for program participants.<sup>128</sup> Florida's program is aimed at low-income, first-generation college students; it provides academic and social supports and is intended to retain first-generation students and have them graduate at the same rates as typical undergraduates.<sup>129</sup> At these schools and others that receive federal funding for TRIO programs, the focus is on both academic and social/cultural support.<sup>130</sup>

Structured academic support systems have also been established at smaller and more selective private institutions. For example, Vassar (with an acceptance rate of 23 percent), has operated the Transitions program since 2011.<sup>131</sup> The program is designed to help first-generation college students by

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126. *Federal TRIO Programs*, U.S. DEP'T EDUC., <http://www2.ed.gov/about/offices/list/ope/trio/index.html> (last modified Sept. 11, 2014), *archived at* <http://perma.cc/PG8J-CTTD>.

127. *See TRIO Opportunity Scholars Program*, UNIV. S.C., <http://www.sc.edu/trio/OSP.html> (last visited Oct. 29, 2014), *archived at* <http://perma.cc/RMU7-5Z35>; *Machen Florida Opportunity Scholars Program*, UNIV. FLA., <http://fos.ufsa.ufl.edu/about> (last updated Apr. 29, 2014), *archived at* <http://perma.cc/4LC6-6HEC>. South Carolina and Florida are—like CU—large, moderately selective flagship public universities (South Carolina's acceptance rate is 63 percent; Florida's is 44 percent). Admissions rates were collected from the IPEDS Data Center, part of the National Center for Education Statistics, and the rates pertain to flagship public campuses (Columbia, South Carolina and Gainesville, Florida) in each state. *See IPEDS Data Center*, U.S. DEP'T EDUC., NAT'L CTR. FOR EDUC. STAT., <http://nces.ed.gov/ipeds/datacenter/Default.aspx> (last visited Mar. 25, 2014), *archived at* <http://perma.cc/46V6-4J2F>.

128. *See TRIO Opportunity Scholars Program*, *supra* note 127.

129. *See Machen Florida Opportunity Scholars Program*, *supra* note 127.

130. *Federal TRIO Programs: Purpose*, U.S. DEP'T EDUC., <http://www2.ed.gov/programs/triostudsupp/index.html> (last modified Aug. 11, 2014), *archived at* <http://perma.cc/5NMX-5HGV>.

131. *See* Larry Hertz, *Transitions: Avoiding the College "Culture Shock,"* VASSAR C. (Mar. 20, 2013), <http://admissions.vassar.edu/about/stories/features/2012-2013/130320-transitions.html>, *archived at* <http://perma.cc/EXW8-LRN4>.

raising awareness of campus resources and support opportunities, helping students build confidence, and fostering community ties.<sup>132</sup>

It is difficult to gauge how common this type of targeted, structured academic support is at the college level because comprehensive program lists across institutions are not publicly available. There is slightly more data available about academic support programs in law schools, though even there the reported number of programs (over 90 percent of schools report some kind of academic support offering)<sup>133</sup> tells us little about actual program content or methodology at any particular school. Little research is available on the effectiveness of these programs for boosting persistence, course performance, and the likelihood of graduation.<sup>134</sup> It seems plausible, however, that the kind of academic and cultural support offered by these programs would improve both persistence and performance among students like the class-based admits identified only by the Disadvantage Index.

#### CONCLUSION

Only in Lake Wobegon are all of the children above average.<sup>135</sup> For the rest of us, reality must include some range of outcomes in the bottom half. The racial politics that have surrounded both public and academic debate about affirmative action and college access have been destructive to serious conversation about how schools can best support the students at the bottom of the class. This Article refocuses that conversation and moves it forward, highlighting not only the struggles and successes of disadvantaged students in higher education, but also workable academic support programs that stand the best chance of fostering success.

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132. *Id.*

133. See Devine & Odom, *supra* note 119, at 215.

134. Interestingly, the most comprehensive work on academic support in the law school context is a 1995 article co-authored by Richard Sander. See Kristine S. Knaplund & Richard H. Sander, *The Art and Science of Academic Support*, 45 *J. LEGAL EDUC.* 157 (1995). There is very little recent research offering empirical evidence on program effectiveness.

135. In Lake Wobegon, Garrison Keillor's fictional Minnesota town, "all the women are strong, all the men are good looking, and all the children are above average." See Garrison Keillor, *The News from Lake Wobegon*, *A PRAIRIE HOME COMPANION* (2014), <http://prairiehome.org/listen/podcast>, archived at <http://perma.cc/S42B-FGC8>.

When colleges and universities give admissions boosts of any sort to students whose academic credentials are marginal relative to those of their peers, they know those students will perform (with exception, but on average) in the bottom half of their class. That is not a reason to abandon affirmative action—whether race-conscious or class-conscious. The research we have presented here provides strong evidence that the claim that affirmative action harms its beneficiaries is empirically flawed. Further, in the context of class-based affirmative action, we have demonstrated that admissions officers can identify those lower-income students most likely to succeed in a post-secondary environment.

Higher education is a significant path to increased opportunity. Class-based affirmative action is a valuable tool for opening that path to non-traditional students. Even recognizing that some class-based admits may not ultimately graduate, the benefits of a class-conscious program are significant. For example, using CU's current and historical data, we can project that more than 700 lower-income students from the 2011 and 2012 cohorts alone will earn a college degree as a result of CU's class-conscious admissions approach.<sup>136</sup> Structured academic support may make this number even higher. Rather than eliminating affirmative action and other measures designed to increase the racial and economic diversity of university communities, schools should focus on the development of both admissions and support programs that maximize the likelihood of success for at-risk students.

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136. 729 class-based admits enrolled at CU in 2011. Another 654 enrolled in 2012. Historical patterns suggest that 52.9 percent of class-based admits will graduate within six years. In other words, an additional 385 disadvantaged and overachieving students from the 2011 cohort and 345 from the 2012 cohort are projected to obtain a four-year college degree.