

Minorities in higher education: A pipeline problem?

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ABSTRACT

This paper uses national data from the American Council on Education (ACE) to study the progress of different ethnic groups through the academic pipeline – stages studied include the Bachelor’s, Master’s, doctoral, levels, and then progress to the Assistant, Associate, and (full) Professor stages, to full-time administrators and finally to the CEO stage. Critics of the Higher Education system might claim that the relatively low percentages of minorities in Higher Education represent a failure of our system to provide sufficient minority graduates. However, an opposing point of view states that these low percentages and numbers are simply a reflection of the “pipeline problem.” In other words, since there are low numbers (or percentages) of minorities coming through the system – at each stage, if the “Input” is small, then, even the best processes of creating good products, are doomed to turn out, at best, low quantities of “Output.” The results show that the answer to this question is not a monolithic “Yes” or “No,” but that there is considerable variation for the various ethnic groups at different stages of the academic pipeline. Different ethnic groups need support and assistance to succeed at different stages of the academic pipeline. These imbalances can be corrected only with a substantial commitment of energy and resources from the entire higher education community. Such, then, is the recommendation – that all of these players and partners commit themselves to helping all groups – the majority and each minority population achieve success at all stages of the higher education pipeline.

Keywords: minorities, higher education, pipeline, progress by stage

INTRODUCTION

Critics of the Higher Education system might claim that the relatively low percentages of minorities in Higher Education represent a failure of our system to provide sufficient minority graduates, sufficient numbers of minority participants in the economic progress that results from the holding of degrees, and the relative dearth of minority role models for our young minorities.

However, an opposing point of view states that these low percentages and numbers are simply a reflection of the “pipeline problem.” “The Pipeline Problem” in this context is defined as the defense that there are low numbers (or percentages) of minorities coming through the system – at each stage, if the “Input” is small, then, even the best processes of creating good products, are doomed to turn out, at best, low quantities of “Output.” In effect, if we look at this as a “production process” (for the creation of Bachelor’s degrees, or any other stage of higher education), it would look like this:

INPUT → PRODUCTION PROCESS → OUTPUT

If the input is very low, then the best of efficiencies in the production process will turn out low numbers of output. Though one might more reasonably call it an Input Problem, this is what is commonly referred to as the Pipeline Problem – and it will be so labeled in this paper.

So, do the low production percentages of Bachelor’s degrees in the case of most minorities represent more a reflection of a failure of the higher education system to encourage minorities to complete college, or is it a reflection of a pipeline problem (low percentage input)? It is reasonable to assume that percentage input of minorities will indeed be low, so, as we study this question, we will not attempt to apportion “blame” between these two possible causes of low minority output. Rather, we will simply study if the process is turning out output for minorities at least the same rate as it does for the majority. We accept that in many cases, it should work better than it does for the majority, to compensate for low input. However, if it does at least as well, there may a reasonable case to be made that the problem of low minority output is more a result of low input (the pipeline problem) rather than a flawed production process.

LITERATURE REVIEW

There is a considerable dearth of literature on this topic, with one notable exception, which is discussed starting in the following paragraph. The other references to the topic are found, in the main, in media reports, campus publications, and Web publications. A sample of these references is also referenced below.

The American Council on Education (ACE) periodically releases reports entitled Annual Status Report on Minorities in Higher Education. A good summary of 20 years of such reports is provided in *20 Years of Minorities in Higher Education and the ACE Annual Status Report*, published in July of 1994. That report included an introduction by John Garland, President of Central State University, which summarized many of the key findings, reproduced below. “In his opening commentary, former ACE President Robert Atwell strikes a chord in a theme common to all of the contributors: “We can rejoice in the progress made but we must persevere, because our work has only begun.” Reginald Wilson, ACE senior scholar emeritus, expresses this theme in another language, *a luta continua* (the struggle continues). And Sara Melendez,

professor of nonprofit management at the George Washington University, notes, "The current climate is not a very hospitable one for continued progress."

The writers also make several other critical observations:

- There has been steady progress in minority completion of undergraduate and terminal degrees. However, the gap between the percentage of Hispanics who hold bachelor's degrees and the percentage of whites who hold those degrees remains enormous. This gap will significantly affect this country's future competitiveness, as we become more brown and black.

- The trend away from need-based student financial aid is denying substantial numbers of low-income students access to a college or university education. This, coupled with the rapid and substantial rise in tuition at public institutions, is making higher education affordable only to middle- and upper-class families.

- Because so-called high-risk students come from low-income communities that have poor or failing schools, universities should provide more educational support programs. The canard that remediation should take place at the K-12 level, however, is drawing attention away from this need for academic assistance. Those who argue against university-based remediation continue to support the antiquated local property tax system as a means for funding primary and secondary schools.

- There is a continuing dearth of African-American and Hispanic faculty. And while the number of minority administrators has increased over the years, they are concentrated in the student services and minority affairs divisions of our campuses."

As we examine the question of increased numbers of minorities in higher education, it is reasonable to observe not just the pipeline (high school graduates) that feeds colleges and universities, but also the percentage of minority graduate students who might serve as mentors to undergraduate students, of minority faculty who might serve as role models or mentors to undergraduate or graduate students, and of senior minority faculty and administrators who might serve as role models and mentors to faculty. The following articles illustrate this point.

Washington (2000) reported, "Some may wonder if the lack of minority graduate students affects the number of minority faculty at colleges and universities. There maybe some support for that question. A 1997 National Center for Education Statistics report showed that at public research institutions, like the University of Tennessee, there were roughly 107,000 faculty members and staff working full time, with the percentage of African Americans just under three percent. That is the saddest statistic of all because the presence of minority faculty goes a long ways towards a supportive environment for graduate students, especially at higher degree levels. Minority faculty can help guide minority students in navigating issues like research agendas, dealing with departmental issues, handling feelings of isolation, or just providing a shoulder to lean on. That's not to say minority students can not forge that kind of relationship with non-minority faculty. But it is helpful to the social, mental, and emotional health of minority students to see faculty who look like them. It let's them know they can achieve and will succeed because that faculty member is living proof. "

The competition for minority faculty is severe, as is indicated by the following reports from Brown and Cornell. If Ivy League schools have difficult recruiting minority faculty, it makes such recruiting for other schools even more difficult.

In an article entitled, "Colleges fight to increase minority faculty presence," Aviv (1998) reported that "while the numbers have increased over the past decade, Brown still ranks seventh among the top twenty-five schools in the country in terms of tenured black professors." "Black professors are not as well-represented as we would like," said Assistant Dean of Faculty Newell

Stultz. "There is an underutilization of blacks. There simply aren't that many black people out there who have Ph.D.s ... Because the number of minority Ph.D.s are historically quite limited, all the universities are trying to hire the same people who aren't very numerous." The article lists several well-designed activities to enhance the recruiting of minority faculty at Brown. Yet, Stultz acknowledges that a "hindrance to departmental recruitment is the scarcity of minority graduate students planning to pursue a career in college-level teaching." He goes on to say, "There simply aren't that many black people out there who have Ph.D.s, Because the number of minority Ph.D.s are historically quite limited, all the universities are trying to hire the same people who aren't very numerous."

The report goes on to document opinions that are in favor of increasing diversity and minority role models among the faculties of universities, and states that the unavailability of minority candidates affects nearly every department at Brown. For example, the paucity of applicants has been felt in the Computer Science (CS) department, and that CS faculty have "been trying to prime the pump by seeking out minorities in high school and freshmen at Brown." The Chair of the Italian Studies department stated that "There just aren't many minority candidates for positions teaching Italian language and culture." According to the chair of the Department of Mathematics, "out of the 233 applicants for open positions in his department, an African American has never applied. Stiff competition from Princeton, Yale, MIT and many other universities also decreases the number attracted to Brown."

Although the preceding article does not refer to it in those terms, the pipeline problem is clearly seen to be a problem, even at some of the best and prestigious schools in the country.

Myers (2000) reported in a similar vein on the Cornell experience, that minority graduate students are more likely to seek advice from faculty members whose heritage is similar to theirs. "They often turn to us, not only as their principal mentor but also in addition to their official adviser. The result is that minority faculty often end up spending a lot of time counseling students outside their fields." Also included in the article is a note from N'dri Assie-Lumumba, an associate professor in education and in Africana studies, recommending that Cornell's commitment to diversity should extend to the faculty and administration.

Clearly, there is a need to examine the issue of the supply pipeline in higher education that supplies the input to the various stages: undergraduate education, graduate education, the professorate (Assistant, Associate, and full Professor, and tenured faculty), and administrators and Presidents. Is it true that the number of people in the pipeline is the limiting factor at each stage, or are there other reasons that may be equally compelling? These issues are examined in this article.

The analysis in this paper uses the data published by ACE in their 2005 publication, *The Twenty-first Annual Status Report on Minorities in Higher Education, 2003-2004*.

Many of the key findings of the report, as summarized in the ACE report and press release (2005), are reproduced below:

“College Enrollment

- College enrollment among African Americans grew to nearly 1.8 million students between 1991 and 2001, a 37 percent increase.
- Hispanic enrollment led all racial/ethnic groups, up 75 percent to more than 1.4 million students. The largest growth occurred at two-year institutions where Hispanic enrollment grew by 82 percent, compared with a 68 percent increase at four-year institutions.

- Asian-American enrollment increased to more than 937,000 in the 10-year period between 1991 and 2001, up 54 percent.
- American Indian enrollment grew by 35 percent in the 10-year period, up from 110,000 in 1991 to nearly 150,000 in 2001.” ...

“The *Status Report* focuses primarily on the 10-year period between 1991 and 2001 as well as the most recent one-year period of 2000 to 2001. It uses data from the U.S. Department of Education and the U.S. Census Bureau. Past reports relied on Department of Education published reports on data from its Integrated Postsecondary Education Data System (IPEDS). For this year’s study, ACE conducted its own analysis of IPEDS data to calculate numbers for enrollment and degree attainment.” ...

“College Persistence Rates

- From 1994 to 2000, five-year persistence rates among students who started their postsecondary education at four-year institutions rose from 51 percent to 54 percent.
- Among students who began college in 1995–96, Asian-American students had the highest rate of attaining a bachelor’s degree (62 percent) within five years, followed by white students (58 percent). African-American students had the largest percentage of students with no degree but who were still enrolled after five years (26 percent), as well as those without a degree and no longer enrolled (30 percent).

Degrees Conferred

- From 1991-92 to 2000-02, African Americans and Hispanics more than doubled the number of master’s degrees they earned. American Indians and Asian Americans nearly doubled the number of master’s degrees they earned, increasing by 97 percent and 88 percent respectively.
- In 2001-02, students of color earned 22 percent of all bachelor’s degrees awarded, up from 14 percent in 1991-92; 17 percent of all master’s degrees awarded in 2001-02 (up from 11 percent in 1991-92); and 14 percent of all doctoral degrees awarded in 2001-02 (up from 9 percent in 1991-92).

Degrees Conferred by Field

- Minority growth in bachelor’s degrees earned was greatest in the health professions (up by nearly 90 percent), biological/life sciences (up by 82 percent) and business (up by 77 percent). The largest numerical growth in bachelor’s degrees earned occurred in business; minorities earned 29,000 more business degrees in 2001–02 than they had 10 years earlier.

First-Professional and Doctoral Degrees

- Asian Americans saw tremendous gains in first-professional degree attainment, nearly doubling the number of degrees earned from 4,700 in 1991-92 to more than 9,100 in 2001-02, a 93 percent spike, the largest of any other racial/ethnic group.
- African Americans earned 52 percent more first-professional degrees in 2001-02 than in 1991-92.
- White females experienced the largest numerical increase in doctoral degrees of any group from 1991-92 to 2001-02, 1,700 additional degrees earned.

Employment in Higher Education

- The number of minority full-time faculty at the nation’s colleges and universities increased steadily, up from 65,000 positions in 1993 to more than 90,000 in 2001.

- Among minorities, Asian Americans experienced the largest numerical increase in faculty positions, increasing by 12,800 positions from 1993 to 2001, a 51 percent gain.
- Minorities made significant gains at the presidential level from 1994 to 2004, increasing the number of positions held by 36 percent. During that time, African American women nearly doubled their number of presidential appointments to 87.”

It warrants pointing out that the names of the ethnic groups used in this paper are those used in the ACE report, including the lack of hyphenation: White (non-Hispanic) – abbreviated consistently as “White,” African American, Hispanic, Asian American, and American Indian. Occasionally, in the graphs, the more current term (Native American) is used.

METHODOLOGY AND ANALYSIS

As referenced in the preceding section, the analysis in this paper uses American Council of Education (ACE) data from their 2005 publication, *The Twenty-first Annual Status Report on Minorities in Higher Education, 2003-2004*.

To address the question about whether the low numbers of minorities in the pipeline fully explain the low output, this analysis examines flows through the pipeline, or “conversion rates.”

One stage of the pipeline is selected as an example: Conversion of Bachelor’s degree holders to Master’s degree holders. A complaint is that there are insufficient numbers of minorities with Master’s degrees. This is true, but where does the problem lie? Is the main source of the problem the dearth of supply of minority Bachelor’s degree holders, or the inefficiency of the Bachelor’s to Master’s pipeline? Obviously, this is not a trivial problem –the major source of the problem needs to be identified so that higher education leaders and supporters may attempt to address it. In the absence of such an analysis, the country runs the risk of distracting itself and its resources from the major issue.

If Master’s degree programs are doing a good job in graduating those students that enter, then the problem is indeed that of adequate supply of Bachelor’s degree holders. If Master’s degree programs are doing a poor job in graduating those students that enter, then the problem is that, in addition to inadequate supply of Bachelor’s degree holders, Master’s degree programs need to improve their performance and their conversion rates.

The next question is how to define doing a “good job” or a “poor job” in moving minorities ahead in the pipeline (or converting them to the next stage), not just for Master’s programs but for any stage in the pipeline: Bachelor’s to Master’s, Master’s to Doctorates, Doctorates to Assistant Professors, Assistant Professors to Associate, Associate to Full, senior Faculty to administrators, and administrators to Presidents? Clearly, there is no absolute measure (less than 100 percent) that universally defines “success” in this regard. So, as a surrogate measure of success in moving minorities ahead in the pipeline (or conversion to the next stage), this analysis uses conversion rates of the majority (Whites) as the benchmark. If, at any stage of the pipeline, the higher education system (writ large) is moving minorities to the next stage at least at the same rate as that for the majority, then a reasonable conclusion is that (while that conversion rate may or may not be a great one), at least that section of the pipeline is not exacerbating the problem.

For example, for every 100 White students who enter Master’s programs across the United States, 33 graduate after two years. And, for every 100 American Indian students who enter Master’s programs across the United States, 28 graduate after two years. Then, one might conclude that the Bachelor’s to Master’s process is about 15% less efficient [$1 - (28/33)$] for

American Indian students as it is for White students. So, when the lack of American Indian holders of Master's degrees is bemoaned, and the response is: "Well; that's because there are insufficient American Indian students graduating from Bachelor's programs," that answer (while true) is glossing over the fact that the conversion process from Bachelor's to Master's is exacerbating the problem. So, clearly, in this case, Master's programs need to be held accountable to improve the efficiency of their production process, and not simply blame the low output on inadequate input.

So, in the general case, at any stage of the pipeline, is the higher education system (writ large) at least creating output of minorities at the same rate (relative to input) as it does for the majority? If, for 100 majority members in the input stream, X of them successfully "graduate" to the next higher level, and for every 100 minorities in the input stream, Y minorities successfully "graduate" to the next higher level, how does Y compare with X? How does the "conversion rate" for minorities (output of Y per 100 input) compare with that for the majority (output of X per 100 input)?

If Y is greater than X, then the shortage of minorities at the next higher stage is probably – in large part – due to a shortage of minorities in the pipeline (or at the previous stage). It would imply that the higher education system is doing at least as good a job as it does for the majority in moving students successfully through the pipeline. That would not make the shortage disappear (because of low input numbers), nor would it imply that the higher education system is doing the best job it can, but at least it would be known that the process of conversion for minorities is working as well as it is for the majority.

However, if Y is less than X, then there is a more serious problem. It would not be appropriate to ascribe "blame" for the shortage of minorities at any stage of the academic pipeline solely on the shortage of minorities in the pipeline. Rather, higher education would need more and better support systems to move minority students to the next higher stage at a higher rate, so that it does at least as well for minorities as it does for the majority.

So, how *does* the "conversion rate" for Minorities (Y per 100 in the input stream) compare with that for the majority (X per 100 in the input stream)? One of the most significant (though not unexpected) findings shows that the answer is *different for each stage* of the higher education pipeline, and is *different for each minority* considered. While higher education may be doing relatively well for Minority Group A at one stage of the pipeline, it may not be doing well for Minority Group B at that stage of the pipeline, nor may it be doing well for Minority Group A at another stage of the pipeline!

The following computations were done for each ethnic group provided in ACE tables -- White (non-Hispanic), African American, Hispanic, Asian American, and American Indian:

1. The output of each stage of the pipeline was divided by the output of the previous stage of the pipeline (as a surrogate input measure) to obtain a "conversion ratio." Since the analysis is restricted to using those years provided in the ACE tables, the closest approximation to the appropriate years is chosen. For example, Table 1 shows ACE data for Bachelor's Degrees and Table 2 shows for ACE for Master's Degrees (both tables include data for the majority population and each minority group). Table 3 then computes conversion rates or ratios from the Bachelor's degree holder population to the Master's degree holders 1-2 years later (for the majority population and each minority group).

Note that the conversion ratios for African-Americans are slightly higher than those of Whites, but that every other minority does not do as well. The least favorable conversion rates are for American Indians.

2. Then, in Table 4, a comparison ratio is computed: the conversion rate for each minority relative to that for the majority (note that, since all other ethnic groups are compared with the majority, there is no column labeled “White” in this table)

For convenience of representation, the conversion rate for the majority is represented as the baseline, and so a positive percentage rate for a minority group implies that the progress of that minority through the pipeline is that better than that of the majority, and a negative percentage rate for a minority group implies that the progress of that minority through the pipeline is that worse than that of the majority.

3. And, finally, these results are shown graphically in Figure 1.

To be clear as to what these results indicate, it is necessary to understand what they do *not* indicate. They do *not* indicate that there is no national problem with the number of African-American Master’s degree holders. There is indeed a shortage of Master’s degree holders, and that all stakeholders have to work harder at improving that situation. This paper is not so much assessing whether there is a national shortage as it is about the *efficiency* of each stage of the pipeline and where to place an emphasis for corrective action. The first bar indicates that, at the national level, the higher education system doing at least as well in moving African Americans through the Bachelor’s to Master’s stage as it is doing for Whites. Clearly there is still need to improve that efficiency (which is only about 34-35 percent, as shown in the earlier table) and also devote considerable energies to improving the size of the African American input stream into the Bachelor’s to Master’s stage (which means far more efforts at the Bachelor’s production stage). Yet, this analysis also reveals that, at this stage of the process, considerable energies need to be devoted to the Hispanic and American Indian segments. Higher education advocates and supporters can learn from the *relative* successes in the conversion process for White and African American students (though still only about a third of the input stream), to help improve the conversion process for the other ethnic groups.

RESULTS

In a similar fashion to the preceding analysis, computations have been done for each minority group relative to the majority, and for each stage in the pipeline – not just the educational pipeline, but through employment and progression through academic and administrative ranks. These results are shown graphically in Figures 2-11.

The details of each analysis have not been replicated in as much detail as was presented in the preceding section, but the results of progression or conversion through the pipeline are presented graphically -- for each stage of the pipeline and for each minority group relative to the majority. For convenience of representation, the conversion rate for the majority is represented as the baseline, and so a positive percentage rate for a minority group implies that the progress of that minority through the pipeline is that much better than that of the majority, and a negative percentage rate for a minority group implies that the progress of that minority through the pipeline is that much worse than that of the majority.

The bright blue bars represent any case in which any minority group's advancement through any stage of the pipeline is not only lower than that of the majority, but at least 10 percent lower than that of *all* the other minority groups. They point out the most pressing need for intervention and assistance from national bodies such as AGB, AASCU, ACE, and others.

Some brief comments are included on each graph. Broader conclusions follow the presentation of the graphs. The Bachelor's to Master's results were discussed in considerable detail in the preceding section, but the graph is included below for the sake of completeness.

CONCLUSIONS

From a review of the graphs, it appears clear that intervention efforts on the part of the higher education community are necessary. For example, at the bachelor's degree level, Presidents and Chancellors need to make it a major priority to create support systems to graduate African-Americans, Native Americans, and Hispanic students.

The Master's → Doctorate conversion slide provides quantitative support for AASCU's Millennium Leadership Initiative (MLI). It demonstrates that African-Americans with master's degrees are earning doctorates at a rate far below that of Whites and of each of the other minority groups. So, this is an example of how we (AASCU, the higher education community) are working hard at improving this situation. The recommendation to Presidents and Chancellors is to work even harder at helping African-American students graduate with their doctoral degrees.

The Assistant → Associate Professor slide shows very compelling needs for faculty mentoring and help to all minorities to achieve senior faculty status.

The Associate → Full Professor conversion is an example of an area in which higher education must be of greater assistance to our African-American and Hispanic (others as well) colleagues.

At the senior levels of administration, the pipeline analysis indicates a significant problem that has gone essentially unrecognized by the higher education community, particularly with Asian-Americans, which often are not included in the net of intervention or support methods; the last four slides demonstrate that this group (after doing relative well in earlier stages) is practically not included in the higher ranks of academic administration. For example, with regard to public four-year CEOs (as in AASCU institutions), *every* minority group performs better than Whites, except for Asian-Americans.

Of course, as this paper has demonstrated, the success rates for each group vary very significantly depending upon that stage of the pipeline. Some minority groups require considerable assistance at one stage, and some others require significant assistance at another. It is entirely inappropriate to claim that since one group is performing better at one or more stages, that that group needs no support at some other stage of the pipeline.

Given the significant numbers of Asian American faculty in the professoriate, it takes away the "typical" defense of the pipeline; i.e. the reason why there are insufficient numbers of a particular minority at a particular stage of the pipeline is because there are insufficient numbers in the previous stage. In this case, the faculty pipeline is doing well in terms of Asian American faculty, and *yet* there is very little progression into the administrative and presidential ranks.

Comparison of data between 2003 and 2005 (Figures 12, 13, and 14) demonstrate that no significant progress has been made in the most egregious areas, and so the problem will not simply get better in time or without intervention.

LIMITATIONS

This paper is based on a simple ratio analysis, and so makes no claim to a high degree of sophistication of statistical analysis. However, preliminary analysis of approximate pipeline ratios indicates that further study and interventions and support systems are necessary – for different minorities at different stages of the pipeline. Also, in later stages of the pipeline, the presence of institutions intended largely or primarily for the education of some minority groups may have differential impact on the conclusions.

Further, the presence of a positive bar on the graphs presented in no way indicates that there is not a problem, because efforts are necessary to increase the low numbers.

The results might be impacted by:

- “the law of small numbers”
- the presence of minority serving institutions

RECOMMENDATIONS

Different ethnic groups need support and assistance to succeed at different stages of the academic pipeline. These imbalances can be corrected only with a substantial commitment of energy and resources from the entire higher education community – to include national organizations such as AASCU and ACE, Governing Boards and AGB, System heads, national search firms, and higher education partners. Such, then, is the recommendation – that all of these players and partners commit themselves to helping all groups – the majority and each minority population achieve success at all stages of the higher education pipeline.

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APPENDIX

Tables

Table 1
Bachelor's Degrees by Ethnicity and Year

	White	African American	Hispanic	Asian American	American Indian	Total
1991-92	922,286	71,219	40,254	46,463	5,128	1,085,350
1995-96	884,083	89,412	56,899	62,805	6,813	1,100,012
1997-98	879,084	95,801	64,308	69,739	7,716	1,116,648
1999-2000	892,198	103,844	72,045	74,839	8,377	1,151,303
2000-01	889,034	106,635	74,349	75,538	8,654	1,154,210
2001-02	914,704	111,176	79,029	79,129	8,742	1,192,780

Table 2
Master's Degrees by Ethnicity and Year

	White	African American	Hispanic	Asian American	American Indian	Total
1991-92	257,142	17,379	9,049	12,260	1,221	297,051
1995-96	282,650	24,544	13,689	17,246	1,693	339,822
1997-98	292,380	28,608	15,425	19,986	1,952	358,351
1999-2000	298,287	33,419	17,940	21,525	2,099	373,270
2000-01	295,427	35,314	19,819	22,240	2,284	375,084
2001-02	299,496	36,911	20,450	23,018	2,406	382,281

Table 3
Conversion Ratios/Rates by Ethnicity and Year

	White	African American	Hispanic	Asian American	American Indian
<u>Master's / Bachelor's -- 1-2 Years Later</u>					
1999-2000 / 1997-98	33.9%	34.9%	27.9%	30.9%	27.2%
2000-01 / 1999-2000	33.1%	34.0%	27.5%	29.7%	27.3%
2001-02 / 2000-01	33.7%	34.6%	27.5%	30.5%	27.8%

Table 4
Conversion Ratios/Rates Relative to the Majority by Ethnicity and Year

	African American	Hispanic	Asian-American	American Indian
<u>Master's / Bachelor's -- 1-2 Years Later</u>				
1999-2000 / 1997-98	2.8%	-17.8%	-9.0%	-19.8%
2000-01 / 1999-2000	2.7%	-16.9%	-10.3%	-17.7%
2001-02 / 2000-01	2.8%	-18.4%	-9.5%	-17.5%
AVERAGE (1-2 years later)	2.8%	-17.7%	-9.6%	-18.3%

Figures

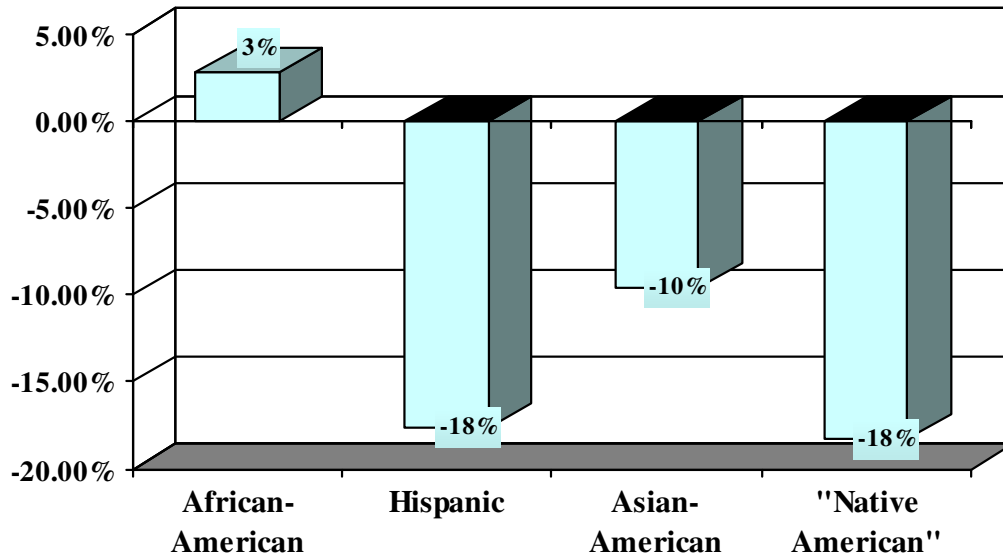


Figure 1. Graphical Analysis of Average Conversion Ratios/Rates by Ethnicity

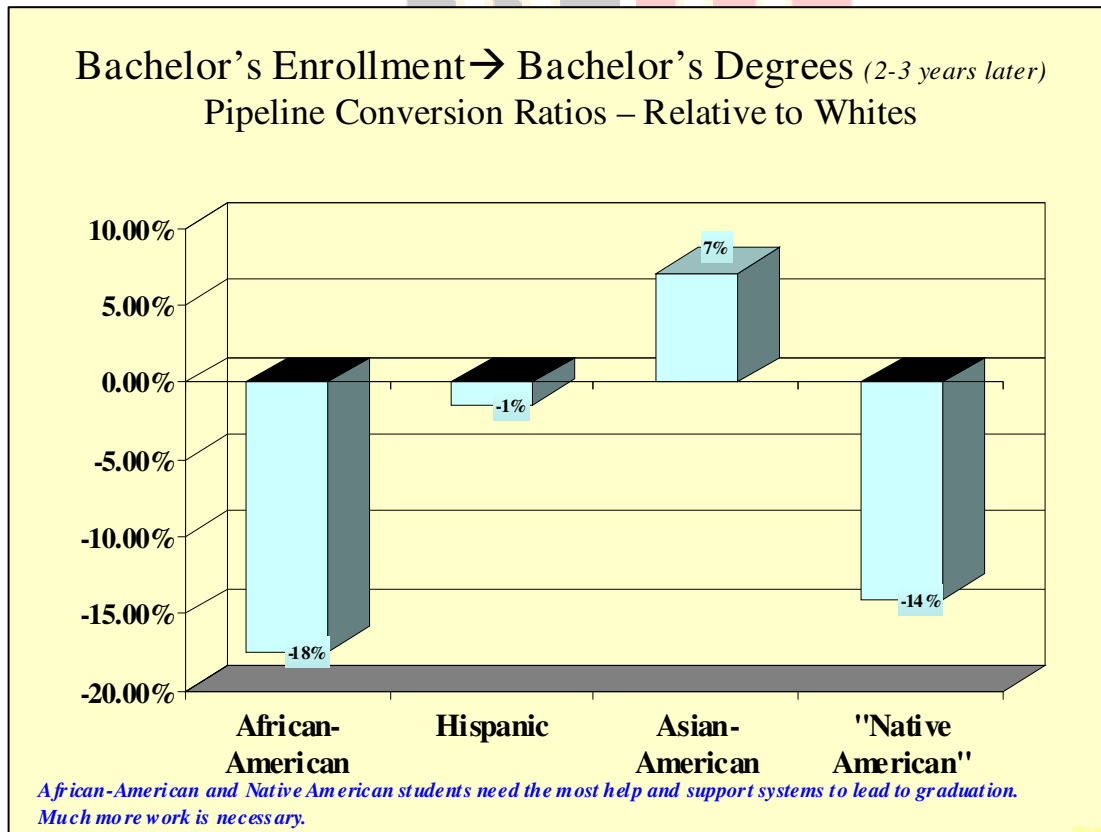


Figure 2. Bachelor's Enrollment to Degrees

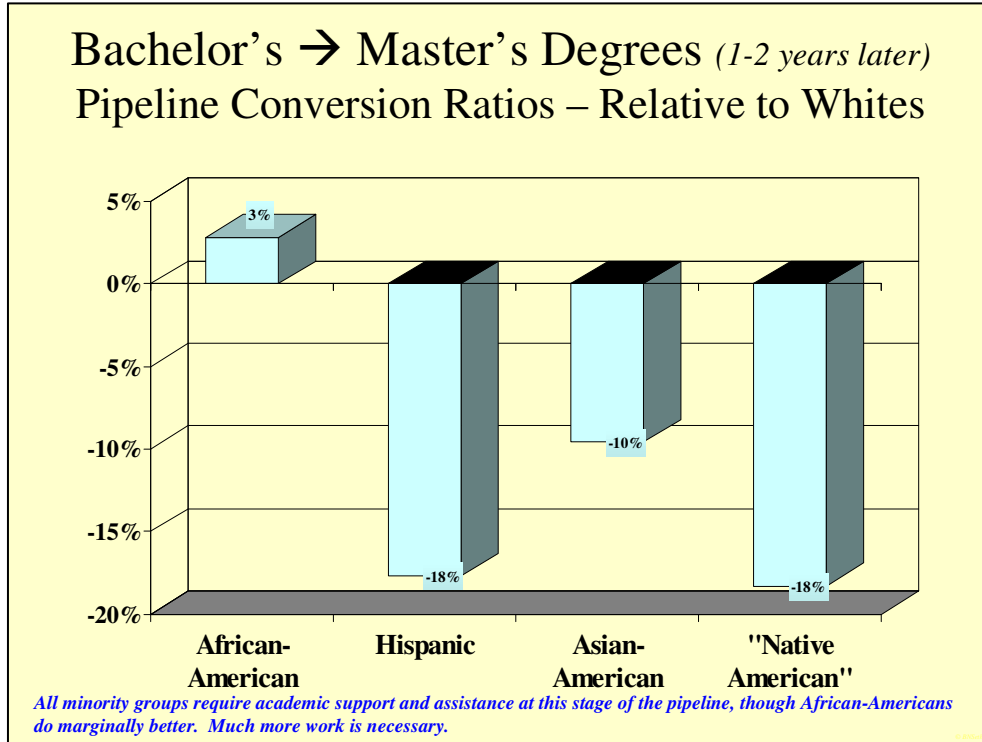


Figure 3. Bachelor's to Master's Degrees

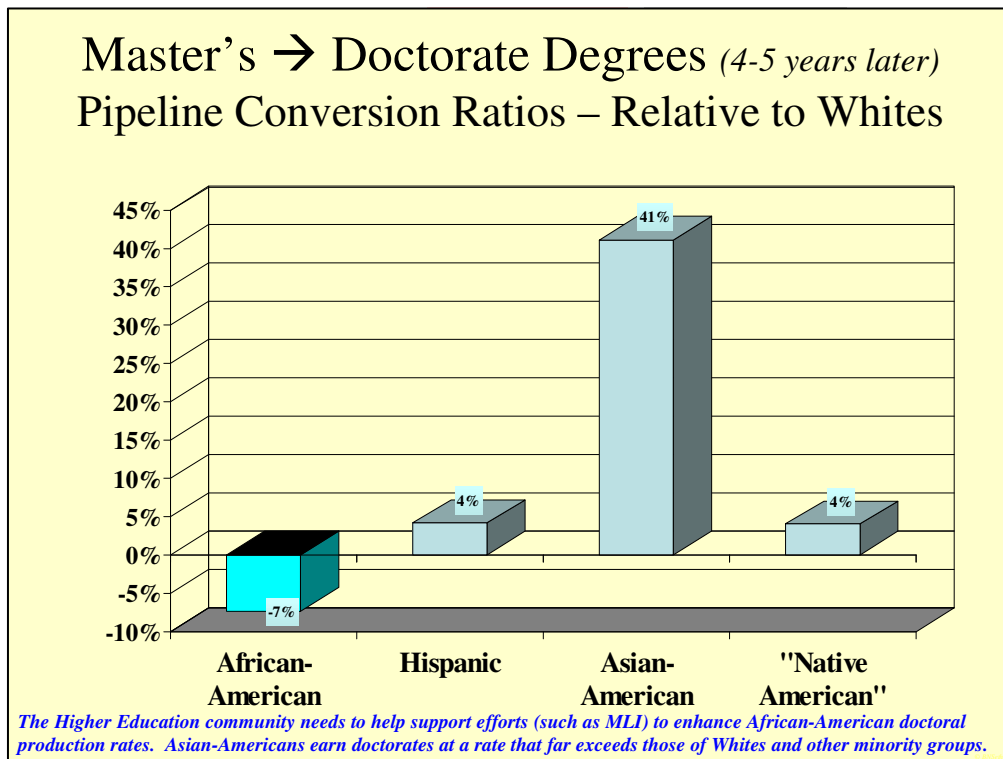


Figure 4. Master's to Doctoral Degrees

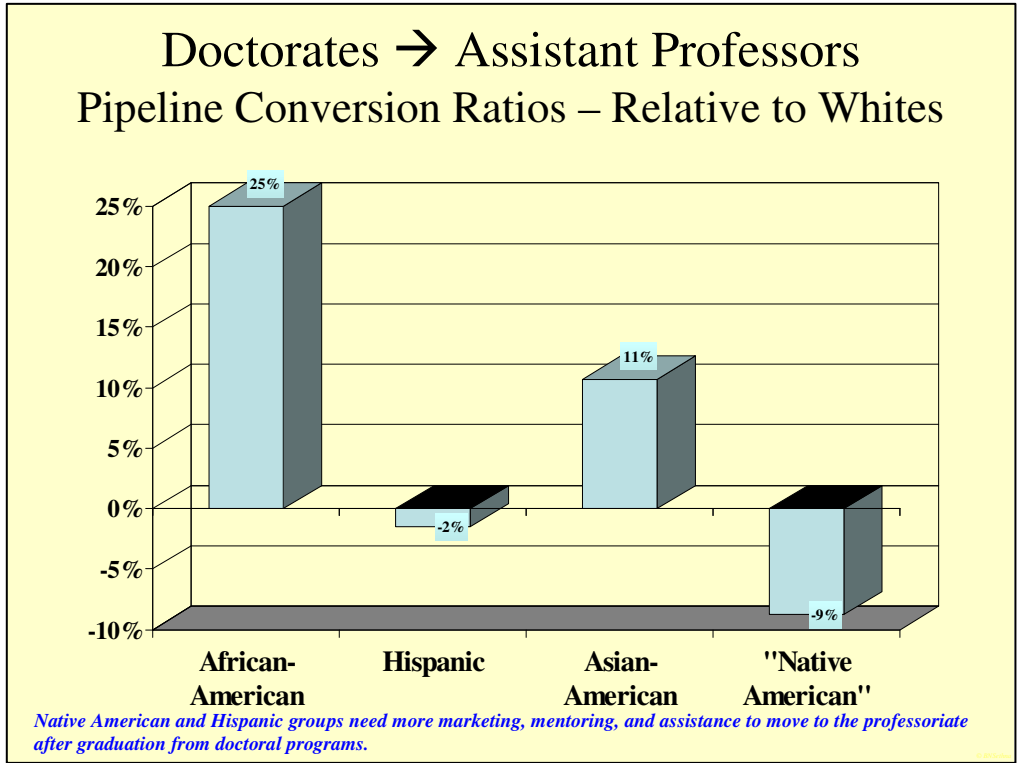


Figure 5. Doctorates to Assistant Professors

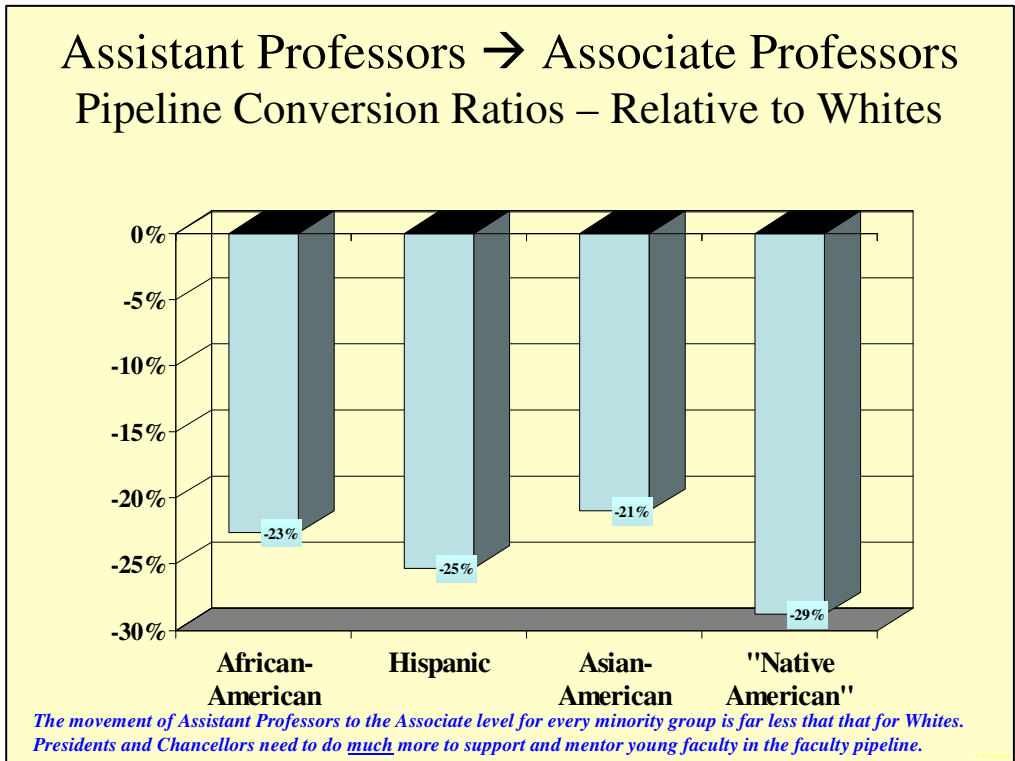


Figure 6. Assistant to Associate Professors

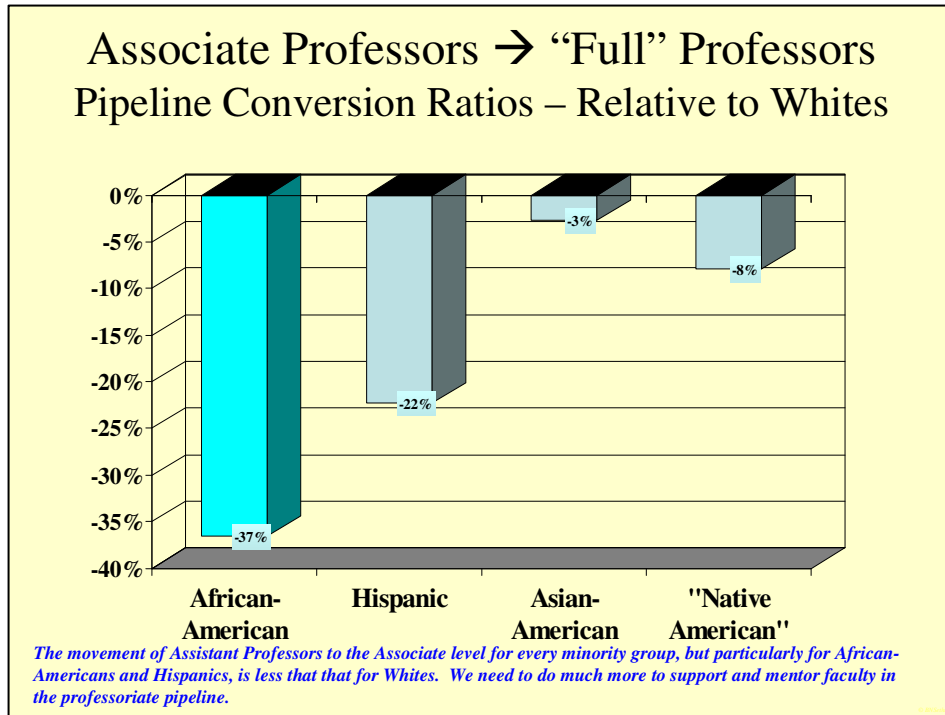


Figure 7. Associate to (Full) Professors

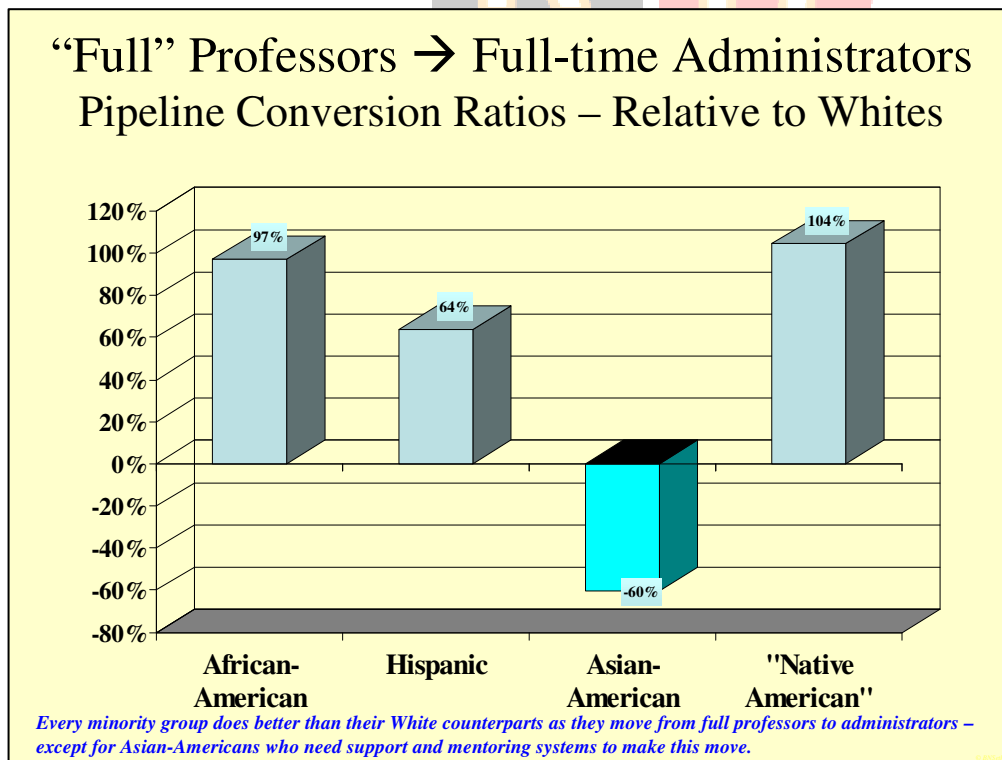


Figure 8. “Full” Professors to Full-time Administrators

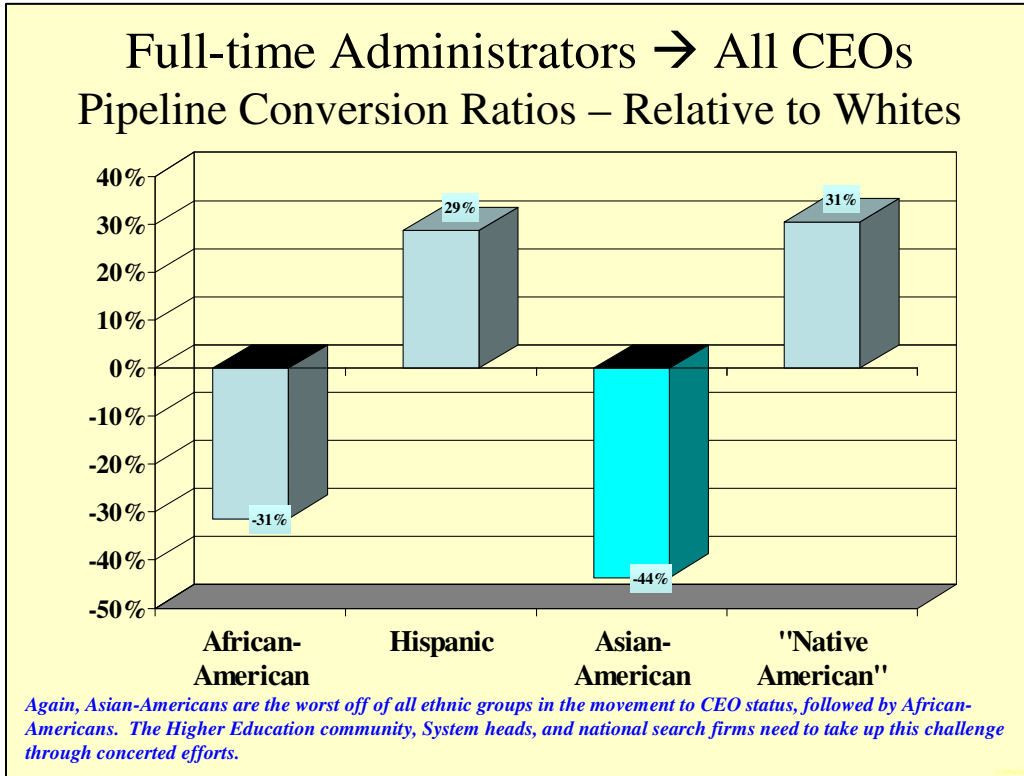


Figure 9. Full-time Administrators to All CEOs

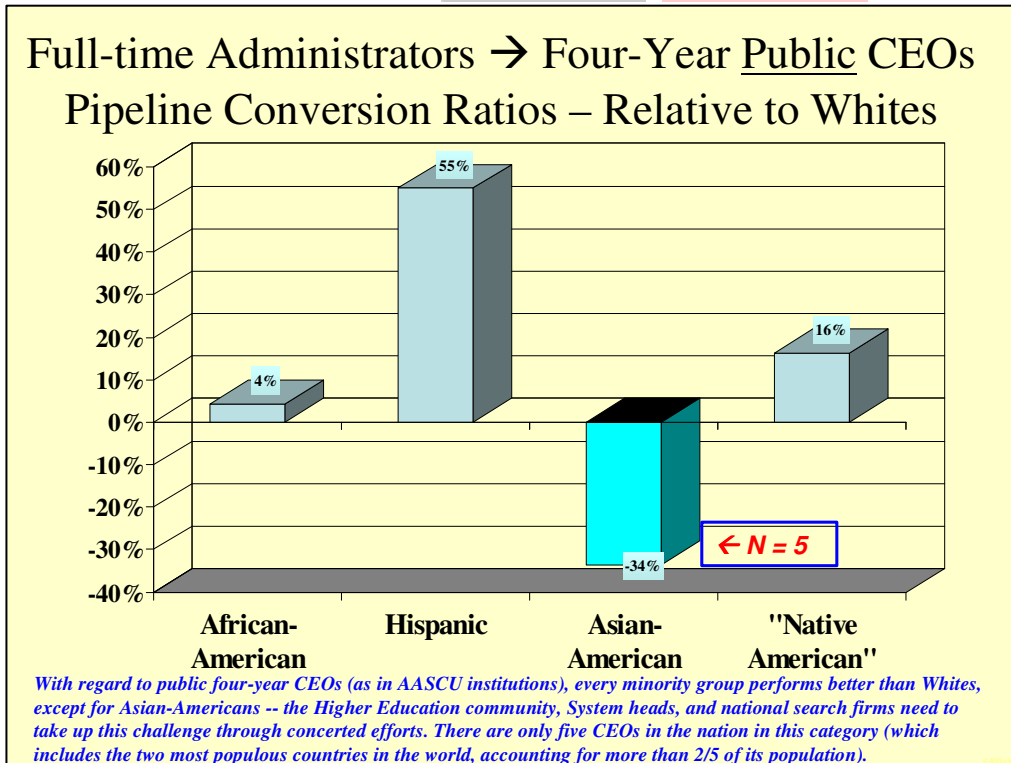


Figure 10. Administrators to 4-Yr. Public CEOs

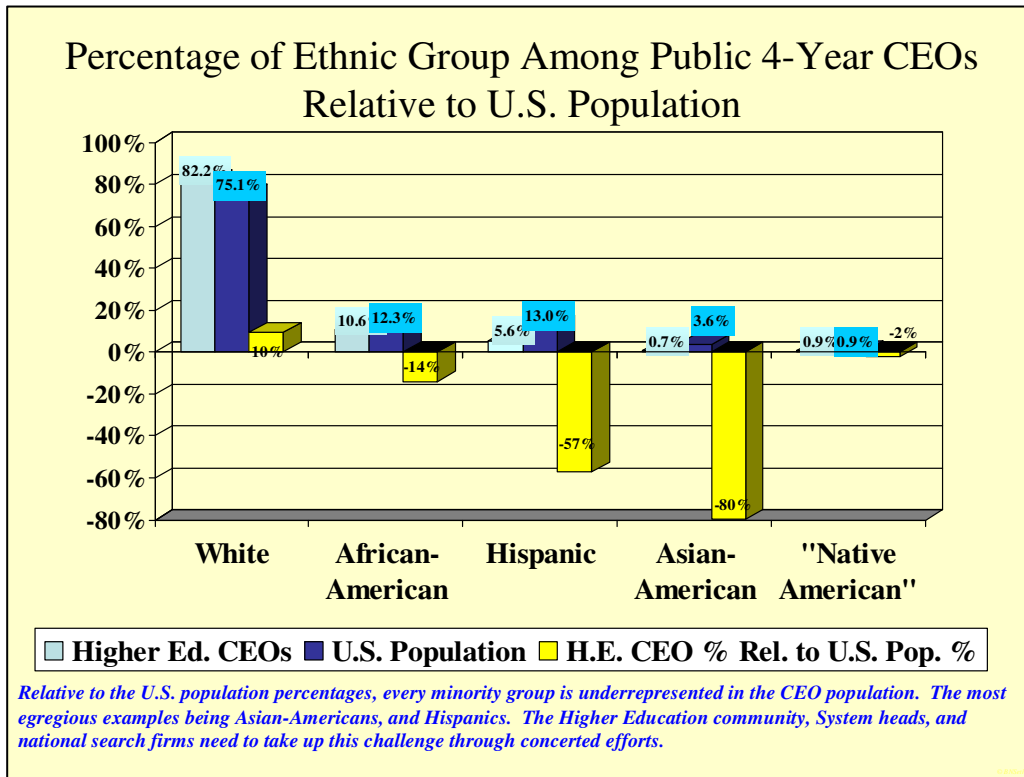


Figure 11. Comparison of Percentage of Ethnic Groups in CEO and US Population

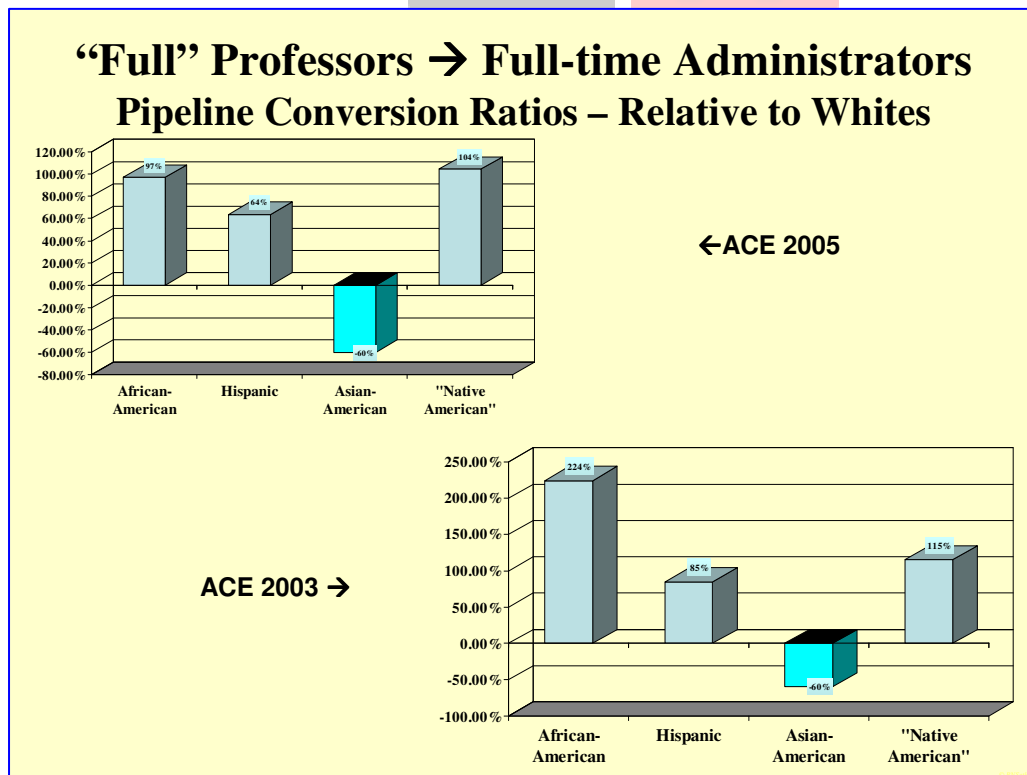


Figure 12. Comparison of 2003 & 2005 Data: Conversion of Professors to FT Administrators

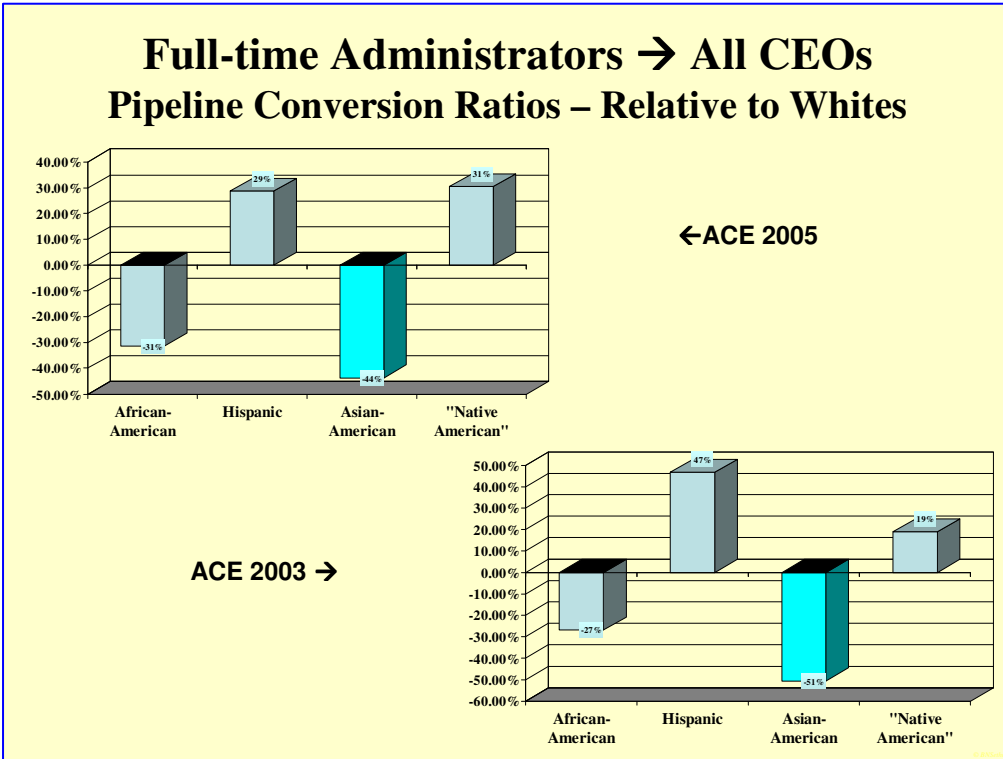


Figure 13. Comparison of 2003 & 2005 Data: Conversion of FT Administrators to CEOs

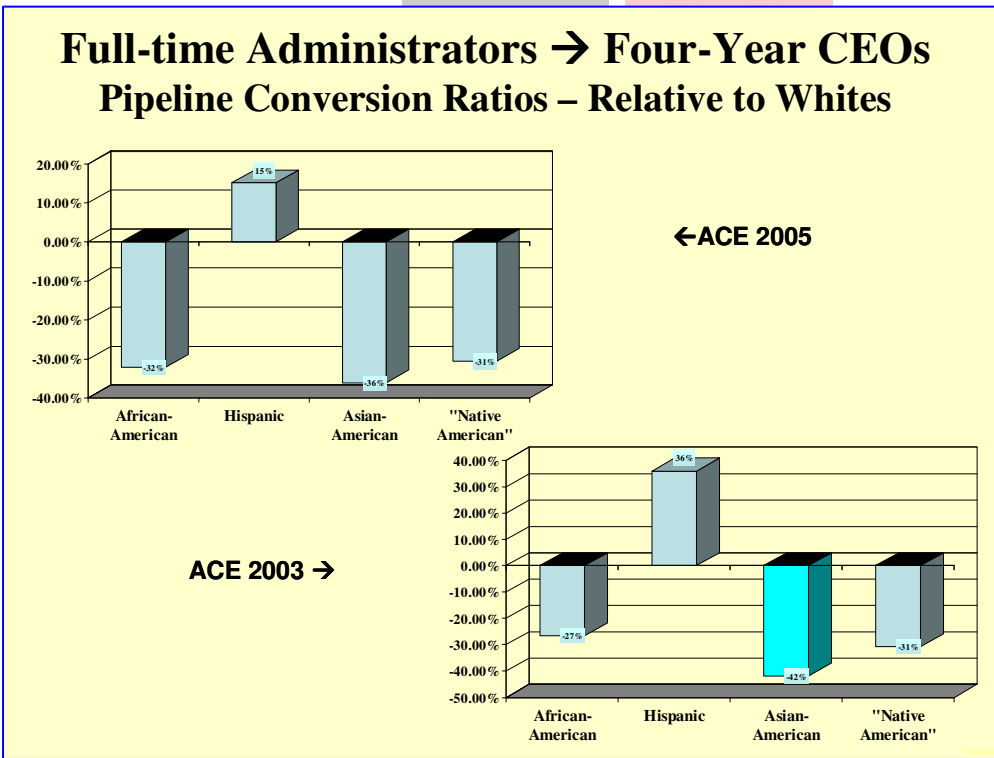


Figure 14. Comparison of 2003 & 2005 Data: Conversion of FT Administrators to 4-yr. CEOs