

UW-Madison's In-State New Freshman Enrollment Pipeline

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Summary of Key Findings

1. Between 2000 and 2010¹, the number of Wisconsin high school graduates increased by 9%, to almost 70,000.
2. Around 1 in 5 of these graduates was academically well-prepared for UW-Madison, based on ACT score and high school rank². In both 2000 and 2010 the proportion of Wisconsin high school graduates who were academically well-prepared for UW-Madison was the same, around 22%.
3. Compared to non-minorities, a lower proportion of minority³ Wisconsin high school graduates are academically well-prepared for UW-Madison. The percentage of Wisconsin high school graduates who are academically well-prepared for UW-Madison ranges from 25% of White graduates to 2% of African American graduates.
4. The small number of minority high school graduates combined with the lower percentage who are well-prepared results in a very small number of well-prepared minority high school graduates. In 2010, the number of well-prepared White Wisconsin high school graduates was more than 14,000 compared to 372 Asian graduates, 221 Hispanic/Latino(a) graduates, 108 African American graduates, and 52 American Indian graduates.
5. Around 39% of academically well-prepared Wisconsin high school graduates apply to UW-Madison. This percentage was the same in 2000 and in 2010. Even with static application rates, this increase in the number of high school graduates over the decade resulted in an increase in the number of applications for admission to UW-Madison and increased the competition for admission.
6. Minority Wisconsin high school graduates apply, are admitted, and enroll at UW-Madison at rates that are equivalent to or exceed those of non-minority Wisconsin high school graduates.

Implications for Enrollment Planning and Diversity

1. A large percentage of UW-Madison new freshmen enroll immediately after high school graduation and from Wisconsin high schools. Because the proportion of high school graduates who are well-prepared for UW-Madison has been constant over the last decade it is the size of the high school graduating class in Wisconsin that has the largest effect on the UW-Madison recruiting pool.
2. The size of Wisconsin's high school graduating class is expected to decrease slightly in the near future. Given that the percentage of graduates who are well-prepared for UW-Madison is static, the decreasing size of the graduating class means that there will be fewer well-prepared Wisconsin high school graduates in the enrollment pipeline.
3. If UW-Madison aims to continue enrolling well-prepared high school graduates and the number of well-prepared graduates is expected to decrease, then recruiting efforts need to focus on providing timely information about UW-Madison and incentives to enroll at UW-Madison over other options.
4. Minority Wisconsin high school graduates already apply and enroll at UW-Madison at rates are equivalent to or exceed non-minorities. The primary difficulty in enrolling more minority students comes from the very small numbers of well-prepared graduates.

¹ Information about the graduating class of 2010 is the most recent statewide graduation data available.

² See page 10 for details on how well-prepared is defined.

³ Minority includes the non-White racial/ethnic groups reported by the Department of Public Instruction for 2010 graduates including African American, Hispanic/Latino(a), American Indian, and Asian.

Introduction

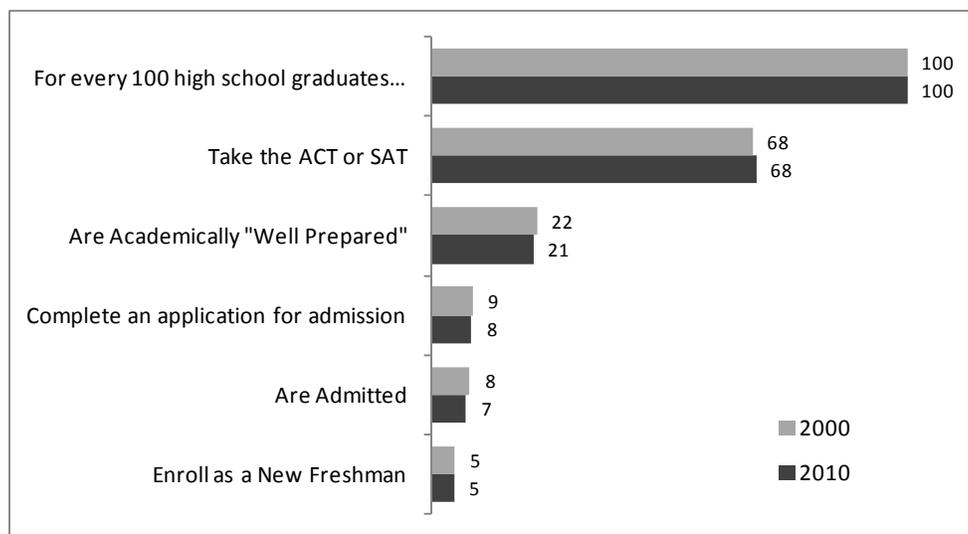
Recent graduates from Wisconsin high schools make up around 60% of UW-Madison's new freshman class⁴. Consequently, understanding the size, demographics, and academic preparation of Wisconsin high school graduates is the foundation of realistic and achievable goals for enrollment management and diversity. Consistent with previous analyses of the enrollment pipeline in 2000 and 2006, we examine the number and percentage of Wisconsin high school graduates who are in the top quartile of their high school graduating class and have ACT scores above the Wisconsin state average of 22. We focus on the overall high school graduating class and specifically on minority high school graduates because of our longstanding diversity goals and pre-college programming effort.

This analysis is structured around the analogy of a pipeline in terms of preparation for and enrollment in college. The pipeline exemplifies the mainly sequential steps needed to prepare for and enroll in college. The segments of this pipeline include taking the ACT or SAT test (at UW-Madison one of these two tests is required for admission), being academically well-prepared for UW-Madison, completing an application for admission to UW-Madison, being admitted to UW-Madison, and enrolling at UW-Madison.

Like many pipelines, the enrollment pipeline has “leaks” – points where high school graduates do not progress to the next step of the enrollment process. In this analysis, we identify the leaky portions of the pipeline and compare the pipeline in 2010 to the pipeline in 2000. The segments of the pipeline are illustrated as a proportion of 100 Wisconsin high school graduates (Figure 1). For each 100 Wisconsin high school graduates in 2010:

- 68 took the ACT or SAT test
- Of those, 21 were considered “well prepared” (as defined for the purposes of this analysis⁵)
- Of those, 8 applied to UW-Madison for the fall following high school graduation
- Of those, 7 were admitted to UW-Madison
- Of those, 5 enrolled.

Figure 1
UW-Madison's Enrollment Pipeline for Wisconsin High School Graduates, 2000 and 2010



⁴ Other sources of new freshmen include students enrolling under the MN compact reciprocity agreement, students from other states and countries, and students from Wisconsin who are not recent high school graduates.

⁵ For this analysis, well prepared (relative to other high school graduates) means that the graduate is in the top 25% of his/her high school class and has scored above the Wisconsin ACT average of 22.

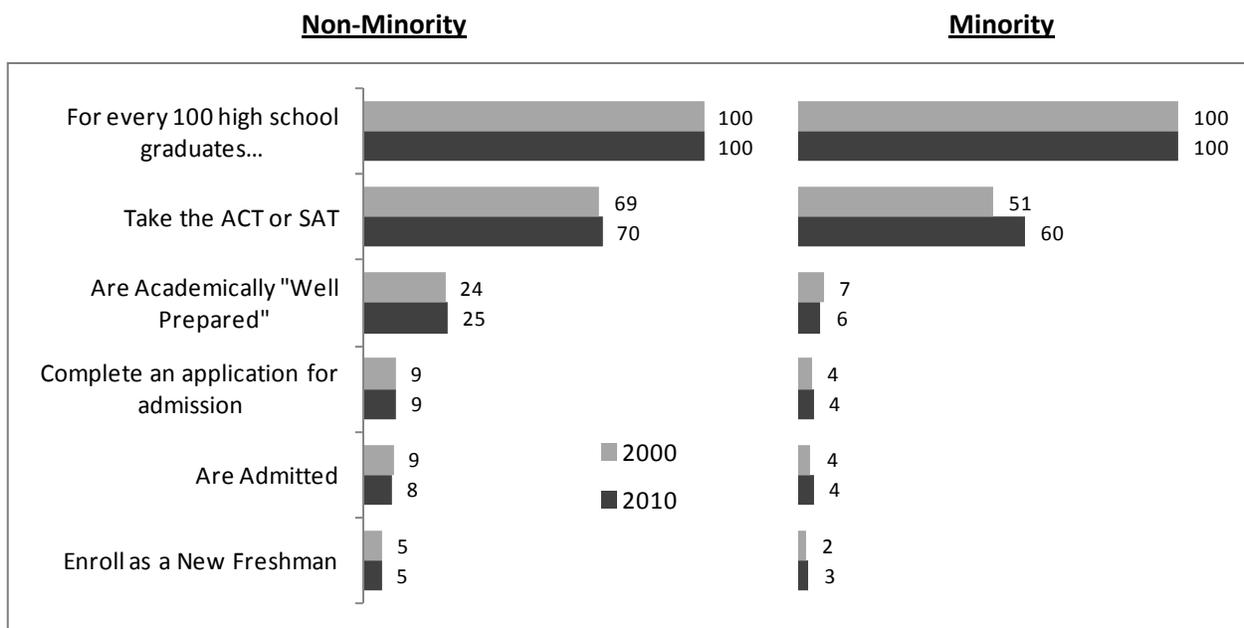
The enrollment pipeline in 2010 looks essentially the same as in 2000. All together, 5 out of every 100 Wisconsin high school graduates enrolls at UW-Madison the following fall, a percentage that has been consistent for at least a decade.

Figure 2 shows a comparison of the enrollment pipelines for non-minority and minority⁶ Wisconsin high school graduates in 2000 and 2010. Compared to non-minority Wisconsin high school graduates, there is a gap in the academic preparation for college and for UW-Madison for minority graduates. This gap is evident in the first steps of the enrollment pipeline, taking the ACT and in being well-prepared for college.

In 2010, 70% of non-minority Wisconsin high school graduates took the ACT compared to 60% of minority high school graduates. One in 4 (25%) non-minority graduates was well-prepared for UW-Madison compared to 6% of minority high school graduates.

With one notable exception, the enrollment pipeline in 2010 is unchanged from 2000. The notable change in the enrollment pipeline is the increase in the percentage of minority Wisconsin high school graduates taking the ACT. This percentage increased from 51% in 2000 to 60% in 2010 and coincides with recently implemented requirements on the part of some school districts, including Milwaukee Public Schools, that all graduates take the ACT⁷.

Figure 2
UW-Madison's Enrollment Pipeline for Wisconsin High School Graduates



⁶ Some services for minority students at UW-Madison target students from specific racial/ethnic groups that have historically been disadvantaged in higher education. These groups are African Americans, Hispanic/Latino(a)s, American Indians, and Southeast Asians (Asians and their descendants who came to the United States after the end of the Vietnam War from Laos, Cambodia, Vietnam, and Thailand) who are defined by Wisconsin Statute and typically referred to as targeted minorities. In this analysis, we use the term minority because we include all Asians. Neither the Wisconsin Department of Public Instruction nor ACT Inc. distinguish Southeast Asians from other Asians.

⁷ This requirement is generally enforced during the junior year. See <http://www.jsonline.com/news/education/100953394.html> for more information.

The UW-Madison enrollment pipeline for minority high school graduates in Wisconsin looks very different at most segments of the pipeline compared to the pipeline for non-minority high school graduates. Because of these differences, the next segment of this analysis focuses on each segments of the pipeline with detail for each racial ethnic group.

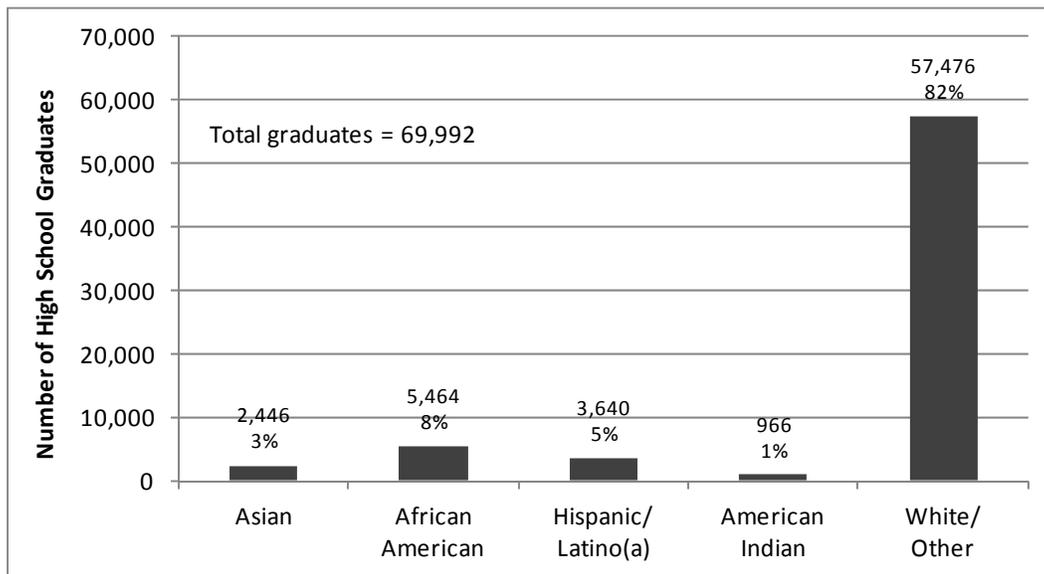
High School Graduates

In order to evaluate the degree to which UW-Madison is serving the State of Wisconsin by providing access to recent high school graduates, it is important to understand the size and composition of Wisconsin’s high school graduates.

In 2010,

- there were almost 70,000 high school graduates in Wisconsin from both public and private high schools (Figure 3).
- eighty-two percent (82%) of Wisconsin high school graduates were White.
- the next largest racial group, African Americans, made up just under 8% of graduates (5464 graduates).
- the smallest racial group is American Indians, 1% of total graduates (966 graduates).

Figure 3
Number of Wisconsin High School Graduates in 2010



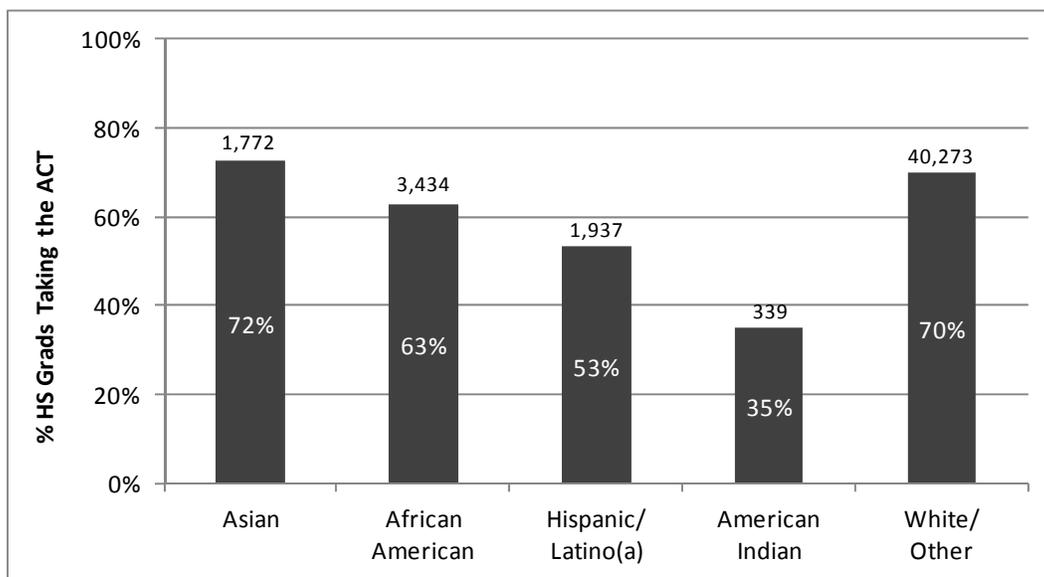
ACT Test Takes

The percentage and number of high school graduates who take the ACT is an important indication of the number considering postsecondary education. Not all who take a college entrance exam will go on to college but few can enroll in a bachelors degree program without it.

Among recent high school graduates (Figure 4):

- overall, 68% of the Wisconsin high school graduates took the ACT.
- 70% of non-minority graduates took the ACT compared to 60% of minority graduates.
- the group with the highest testing rate was Asian graduates at 72%.
- the group with the lowest testing rate was American Indians at 35%.

Figure 4
Wisconsin High School Graduates in 2010 who Took the ACT



Graduates who are Well-Prepared for College

Simply taking the ACT or SAT does not make a high school graduate competitive for admission to UW-Madison. In addition to strong performance on required and elective coursework, applicants should demonstrate their academic ability and achievement by solid scores on either the ACT or SAT. For this analysis, we use the Wisconsin state average ACT score of 22 AND the top quartile of high school rank as the graduates called well-prepared.

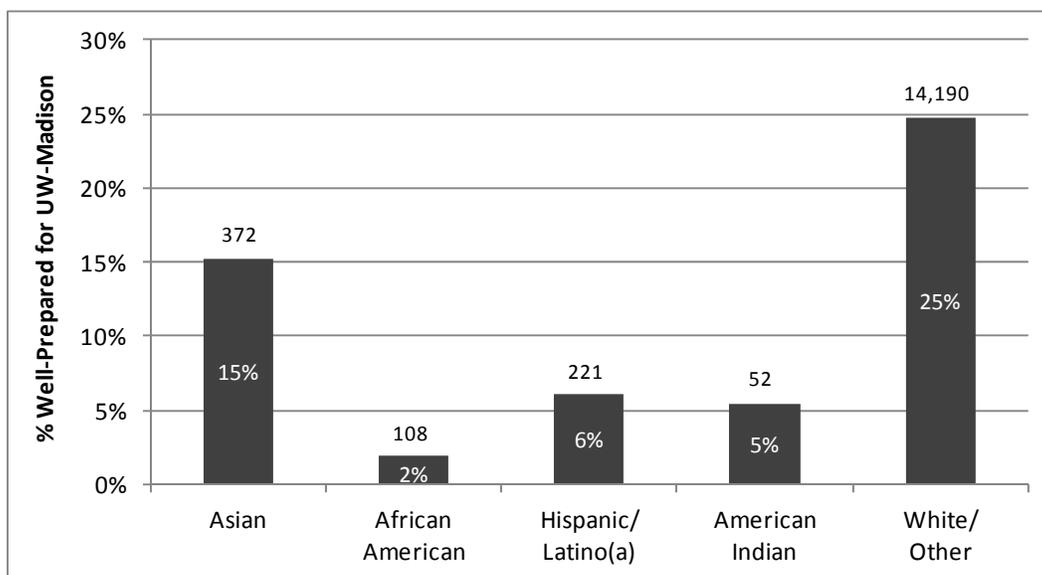
This is a generous definition that does not reflect the average UW-Madison new freshman⁸. However, because UW-Madison does not have a minimum ACT score or high school rank requirement for admission we need to set the bar at some point that reflects the general perception of student qualifications for admission to a state flagship university that is also definable by available data.

For 2010 Wisconsin high school graduates (Figure 5),

- overall, just over one fifth (21%) meet this definition of well prepared.
- 25% of White high school graduates are well-prepared by this definition.
- among minority groups, Asians have the next highest percentage of well prepared graduates at 15%.
- the lowest percentage of graduates who are well prepared for college is African Americans at 2% of graduates.

Combining the relatively small number of minority high school graduates with the low percentage who are well-prepared results in a very small number of well-prepared minority high school graduates. In 2010, the number of well-prepared White Wisconsin high school graduates was more than 14,000 compared to just 52 American Indians, 108 African Americans, 221 Hispanic/Latino(a)s, and 372 Asians. Overall, 18% of Wisconsin high school graduates are from minority groups but only 5% of well-prepared graduates are from minority groups.

Figure 5
Wisconsin High School Graduates in 2010 who Were Well-Prepared



⁸ In recent years the typical UW-Madison new freshman is in the top 10% of his/her high school graduating classes, scores a 28 on the ACT (or equivalent score on the SAT), and has a 3.70 high school academic grade point average.

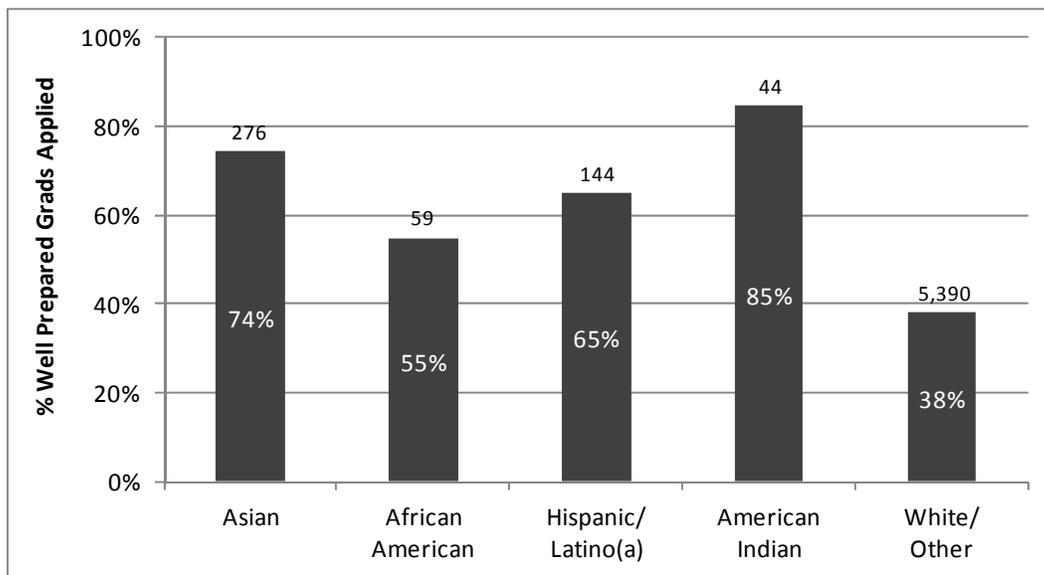
Application Rates to UW-Madison for Well-Prepared Wisconsin High School Graduates

The proportion of high school graduates who apply for admission is the application rate. For the purposes of this analysis we specifically focus on the application rate for well-prepared Wisconsin high school graduates. How this rate is calculated is illustrated in the following formula.

$$\text{Well-Prepared Application Rate} = \frac{\text{Well-Prepared Wisconsin Resident New Freshman Applicants who Graduated the Previous Year}}{\text{Well-Prepared Wisconsin High School Graduates (prior year)}}$$

Overall, 40% of well-prepared high school graduates apply to UW-Madison for the fall following graduation. Well-prepared graduates from minority groups apply to UW-Madison at higher than average rates. Compared to the 38% of well-prepared White high school graduates who applied to UW-Madison, application rates for minority graduates ranged from 55% for African Americans to 85% for American Indians.

Figure 6
Application Rates to UW-Madison for Well-Prepared Wisconsin High School Graduates in 2010



Admission Rates to UW-Madison for Well-Prepared Wisconsin High School Graduates

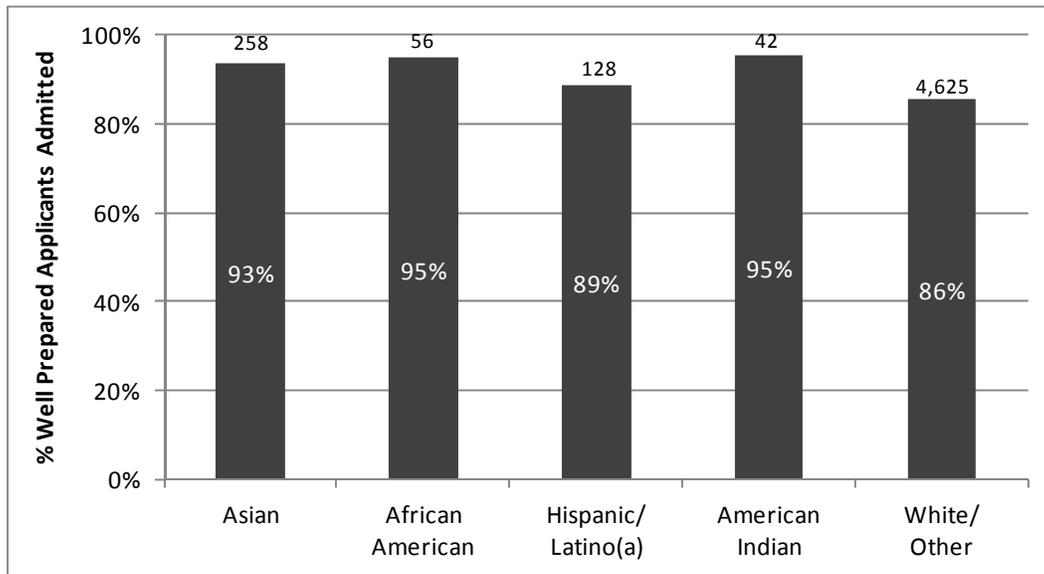
The proportion of applicants who are admitted is the admission rate. For the purposes of this analysis we specifically focus on the admission rate for well-prepared Wisconsin high school graduates. How this rate is calculated is illustrated in the following formula.

$$\text{Well-Prepared Admission Rate} = \frac{\text{Well-Prepared Wisconsin Resident New Freshman Admits who Graduated the Previous Year}}{\text{Well-Prepared Wisconsin Resident New Freshman Applicants who Graduated the Previous Year}}$$

The definition of well-prepared used in this analysis is constructed from data that is collected at each point in the enrollment pipeline (ACT score and high school rank). Many more and more important factors are considered when making an admission decision. Although we do not have quantifiable data for each factor affecting admission decisions, ACT score and high school rank are correlated with them.

Overall, 86% of new freshman applicants who are well-prepared (for the purposes of this analysis) were admitted to UW-Madison. Well-prepared recent graduates from minority groups are admitted to UW-Madison at higher-than-average rates. Compared to the 86% of well-prepared White applicants who were admitted to UW-Madison, admission rates for minority graduates ranged from 89% for Hispanic/Latino(a) applicants to 95% for American Indian and African American applicants.

Figure 7
Admission Rates to UW-Madison for Well-Prepared Wisconsin High School Graduates in 2010



Yield Rates to UW-Madison for Well-Prepared Wisconsin High School Graduates

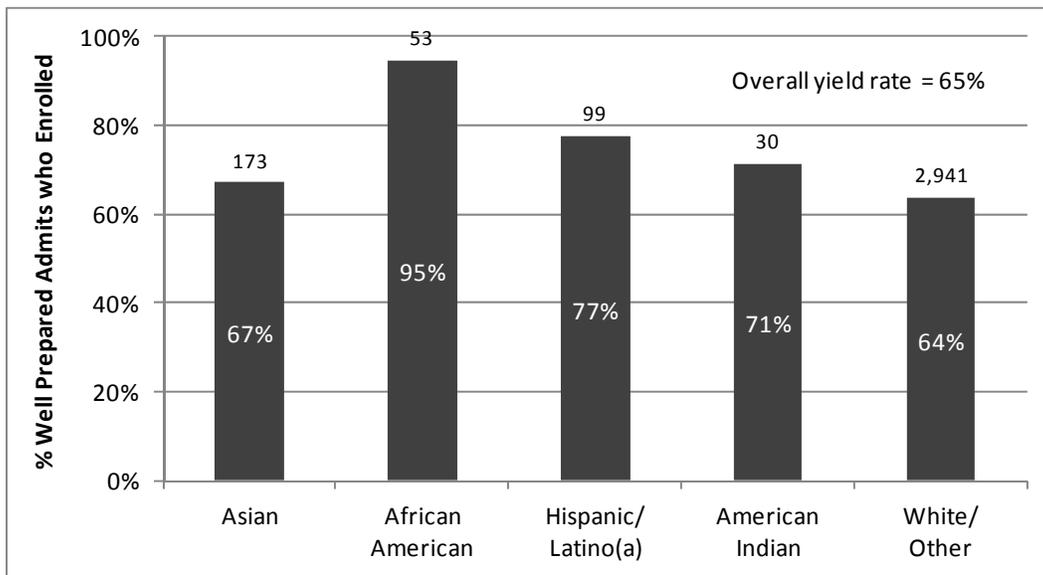
The proportion of admitted applicants who enroll is the yield rate. For the purposes of this analysis we specifically focus on the yield rate for well-prepared Wisconsin high school graduates. How this rate is calculated is illustrated in the following formula.

$$\text{Well-Prepared Yield Rate} = \frac{\text{Enrolled Well-Prepared Wisconsin Resident New Freshman who Graduated the Previous Year}}{\text{Well-Prepared Wisconsin Resident New Freshman Admits who Graduated the Previous Year}}$$

Most college applicants apply to more than one institution and well-prepared high school graduates are often admitted to multiple institutions resulting in a choice of institutions to attend. The proportion of well-prepared admits who enroll at UW-Madison (yield rate) shows the degree to which admitted applicants choose UW-Madison over their other options.

Overall, 65% of well-prepared Wisconsin high school graduates who were admitted enrolled at UW-Madison in the fall following graduation. Well-prepared admits from minority groups are more likely to enroll than non-minorities. Compared to the overall yield rate of 65%, 64% of well-prepared White admits enrolled compared to 95% of well-prepared African American admits.

Figure 8
Yield Rates to UW-Madison for Well-Prepared Wisconsin High School Graduates in 2010



Source Notes and Definitions

Wisconsin High School Graduates. The number of high school graduates from Wisconsin public high schools, by race/ethnicity, comes from the Wisconsin Department of Public Instruction's Wisconsin Information Network of Successful Schools (WINSS). The number of graduates from private high schools in Wisconsin (not available by race/ethnicity) is from DPI's PI-1207 Private School Report.

This analysis is complicated by the fact that the race/ethnicity of private high school graduates, approximately 5,300 in 2010, is not collected by DPI and is therefore not available in the source report used for this analysis. Because we are interested in the total pool of Wisconsin high school graduates (not just those from public high schools) by race/ethnicity and because later segments of the pipeline (such as ACT testing and UW-Madison admission data) do not distinguish between public and private high school graduates, we have estimated the race/ethnicity of private high school graduates by applying the percentage share of public graduates to the private total and then adding it to the public graduates. For example, 8% of public high school graduates are African American. We are assuming that the racial distribution of private high school graduates is similar. We calculate 8% of the private high school graduates and add it to the number of African American public high schools graduates to estimate a total number of African American graduates.

ACT Test Information. Data on ACT testers was provided by ACT Inc. to UW System Administration (Office of Policy Analysis and Research) and then to UW-Madison (Academic Planning and Analysis) based on the conditions of a data sharing agreement between UW System Administration and ACT, Inc. The population of ACT testers includes students who took the ACT test and indicated a Wisconsin residency and an expected graduation date during the 2009-10 academic year. The (self-reported) high school rank, ACT composite score (scale of 1-36), and (self-reported) race/ethnicity are all used for this analysis. For graduates who took the ACT multiple times, the rank and race/ethnicity associated with the highest score are used.

UW-Madison applicants, admits, and enrolled new freshmen. Information about applicants and enrolled new freshmen is retrieved directly from UW-Madison's admission and enrollment records in UW-Madison's InfoAccess data warehouse.

High School Rank Percentile. Since we first analyzed this topic in 2000 the practice of high schools not ranking their graduates has increased. The percentage of UW-Madison new freshmen without a high school rank increased from 17% in 2002 to 38% in 2011. We have used the same definition of "well-prepared" for more than a decade. In order to continue using the same definition of well-prepared, needed for longitudinal comparisons, then we need to know high school rank at each segment in the pipeline. For the applicants who do not have a high school rank we determine an assumed rank, by race, based on the distribution of applicants in the same race who do have rank. For example, 63% of African American applicants who do have a high school rank are in the top quartile. We multiply .63 times the number of African American applicants who do not have a rank and add that to the number in the top quartile.

Defining Well-Prepared. There is no single definitive definition of what it means to be academically well-prepared for UW-Madison. The "average" freshman at UW-Madison in 2010 was in the top 10% of his/her high school class and has an ACT score (or equivalent SAT score) of 28. There is no lower threshold for ACT scores that it set by governance or administrative policy so an analytic definition needs to be determined. In terms of ACT score, we have decided to use the Wisconsin state average of 22 as a guide, reflecting the general perception that UW-Madison enrolls above average students.