



Impact Spotlight
Report:

**Wolverine
Pathways
Program
Evaluation**



Spotlight Report

Wolverine Pathways Program Impact Evaluation: The First Four¹ Graduating Classes

Executive Summary

Launched in 2016 as an initiative within the University of Michigan (U-M) Diversity, Equity and Inclusion Strategic Plan, Wolverine Pathways (WP) was created with the primary goal of establishing a college preparatory pipeline to the University of Michigan Ann Arbor campus (UM-AA) and also to support college readiness and access more broadly to highly motivated students from historically underserved schools and communities in the state of Michigan. WP is administered through the U-M Office of Diversity, Equity and Inclusion and was developed and designed in collaboration with expert faculty and staff from U-M schools and colleges.

A core program value is that every student deserves the opportunity to pursue a wide range of professional and academic pathways. Toward this end, WP provides free college preparatory enrichment and guidance for 7th through 12th grade students who either:

- live in Detroit
- live within the boundaries of Southfield Public or Ypsilanti Community school districts, OR
- attend one of the program’s partner schools in Grand Rapids

WP student scholars and their families participate in year-round programming designed to facilitate their college preparation and academic development. WP scholars are challenged to grow socially and emotionally by joining a community of college-oriented scholars. The program seeks to foster relationships, both professional and personal, that encourage student academic resilience and achievement and will continue to provide opportunities through college and beyond.

As of winter 2022, WP has served more than 1,150 scholars of all races and ethnicities residing in Ypsilanti, Detroit and Southfield in grades 7 through 12 and graduated 470 scholars. Based on outcome indicators to date, Wolverine Pathways has been an asset in diversifying UM-AA’s undergraduate population.

UM-AA admissions and yield statistics for WP graduates are compelling. WP students are more likely to be accepted and enrolled at UM-AA than other students from their high schools. Across the first four cohorts of WP applicants, WP students were 2.1 times more likely to be admitted to UM-AA and 2.4 times more likely to enroll at UM-AA than peers from their respective high schools. Additionally, from 2018 to 2021, WP scholars had an admittance yield of 63% to UM-AA (compared to 46% for non-WP students from the same high schools) and an enrollment yield of 86% to UM-AA (compared to 73% for non-WP students from the same high schools).

¹ This report examines admission and matriculation rates to UM-Ann Arbor (UM-AA), academic outcomes, and self-reported academic success and college adjustment among the first four graduating classes from WP ($n = 415$). It is important to note that this report also includes graduation data with the fifth and most recent graduating WP class, who graduated in winter 2022 ($n = 55$). However, the fifth graduating class is not included in the yields or academic outcome analysis because these WP graduates started college in fall of 2022.



Although the WP program does not consider race or ethnicity in selecting participants, the program has proven to be particularly impactful in increasing accessibility to UM-AA for students who identify as members of underrepresented, racially minoritized groups (URM). Across the first four cohorts, WP students who identify as URM were 2.8-3.5 times more likely to be admitted to UM-AA and 2.4-4.7 times more likely to enroll at UM-AA than non-WP URM students from their respective high schools. Furthermore, Black² WP students were 3-3.7 times more likely to be admitted and 6 times more likely to enroll at UM-AA compared to same race peers in their high school.

There is evidence that WP has had a significant impact on the racial makeup of students at UM-AA. Black WP scholars matriculating to UM-AA represent 20% of all Black in-state students matriculating as first year students from 2018 to 2021. 127 out of 647 Black students matriculating to UM-AA as in-state first years from fall 2018-fall 2021 were WP alumni.

Importantly, there is also evidence that participation in WP increased accessibility to higher education for scholars beyond admission and enrollment to UM-AA. Of the 470 students who graduated from WP in the first five cohorts, 88.5% have enrolled in college. Forty-six percent (46%) of WP graduates have enrolled at UM-AA, 14.8% have enrolled at UM-Dearborn, and less than 1% have enrolled at UM-Flint. Twenty-six percent (26%) of WP graduates have enrolled in other competitive and notable institutions, including Columbia University, Georgetown University, Howard University, and Michigan State University, among others.³

Upon enrollment at UM-AA, WP scholars generally perform competitively and are well adjusted to college life. The median cumulative GPA of all WP alumni who matriculated to UM-AA is 3.3 as of winter 2022. With each cohort, the grade performance of WP matriculants increased. The median cumulative GPA for the first cohort of WP alumni matriculating to UM-AA in 2018 was 3.0, compared to the median cumulative GPA for 2019 and 2020 matriculants, 3.3 and 3.4 respectively. We attribute the enhanced performance of 2019 and 2020 matriculants to their greater participation in SuccessConnects (SC), a holistic support program focusing on positive college transition and academic, personal and social success at UM-AA. Participation in SC was encouraged but not required in earlier cohorts matriculating to UM-AA and is now required as part of the scholarship agreement for WP.

Along with positive performance, WP matriculants self-report high levels of satisfaction with college courses and college life while at UM-AA. Lastly, there is evidence that WP helps to mitigate academic difficulties non-traditional students may face in a college setting. Research indicates that URM and first-generation college students frequently experience historically rooted structural and social

² “Black/African American” is referred to as “Black” in this appendix report.

³ These numbers reflect any WP graduate who has ever been enrolled in college. As of fall 2022, 81% of WP graduates are currently enrolled or have graduated from college. 45% of WP graduates are currently enrolled or have graduated from UM-AA, 13% of WP graduates are currently enrolled or have graduated from UM-Dearborn, and less than 1% are currently enrolled or have graduated from UM-Flint. 22.5% of WP graduates are currently enrolled or have graduated from other competitive and notable institutions.



inequities as they pursue higher educational pathways, which can hinder their academic success.^{4,5,6} Among WP matriculants to UM-AA, however, URM students have higher GPAs than non-URM students after one year of enrollment. Additionally, first-generation college students have GPAs similar to non-first-generation college students after one year of enrollment. Taken together, program outcomes to date suggest that participation in WP is helping to “level the playing field” for those WP students from marginalized backgrounds, through broadening students’ access to higher education, and supporting their equitable access to high quality academic and student development support systems while in college.

Admission and Matriculation Outcomes to UM-AA

Methodology

This section details the yield analysis of WP graduates across the 2018-2021 admission cycles. Data were obtained from the Office of Enrollment Management (OEM) for unique, first year enrollments to UM-AA. WP graduates were compared to non-WP students from their same high schools on rates of application, admittance and matriculation to UM-AA. A series of Fisher’s exact tests were conducted to determine the likelihood that WP students would be admitted, enrolled and matriculated to UM-AA when compared to non-WP students from their same high schools. Sub-analyses were further conducted by URM status and by student race/ethnicity.

Overall Findings

Within the first four cohorts of WP applicants to UM-AA, WP scholars were 2.1 times more likely to be admitted and 2.4 times more likely to enroll at UM-AA as compared to other students from their same high schools ($p < 0.01$, respectively). In 2018, WP students were 2 times more likely to be admitted ($p < 0.01$) and 2.8 times more likely to enroll at UM-AA ($p < 0.01$). In 2019, WP students were 1.7 times more likely to be admitted ($p < 0.05$) and 3.5 times more likely to enroll at UM-AA ($p < 0.01$). In 2020, WP students were no more likely to be admitted to or enroll at UM-AA when compared to students from their same high schools. In 2021, WP students were 2.6 times more likely to be admitted ($p < 0.01$) but no more likely to enroll at UM-AA than students from their same high schools. (The drop in undergraduate enrollment across the country since the onset of the COVID-19 pandemic⁷ may help explain why WP students were not more likely to enroll at UM-AA than their non-WP peers in both 2020 and 2021).

Across the 2018-2021 admission cycles, the admittance rate to UM-AA was 63% for WP scholars, in comparison to 46% for non-WP scholars from their same high schools. Across the same time period, the enrollment rate for WP students admitted to UM-AA was 86%, in comparison to 73% for non-WP

⁴ Barber et al. (2012). Disparities in remote learning: Learning faced by first-generation and underrepresented minority students during COVID-19: Insights and opportunities from a remote research experience. *Journal of Microbiology and Biology Education*, 22(1).

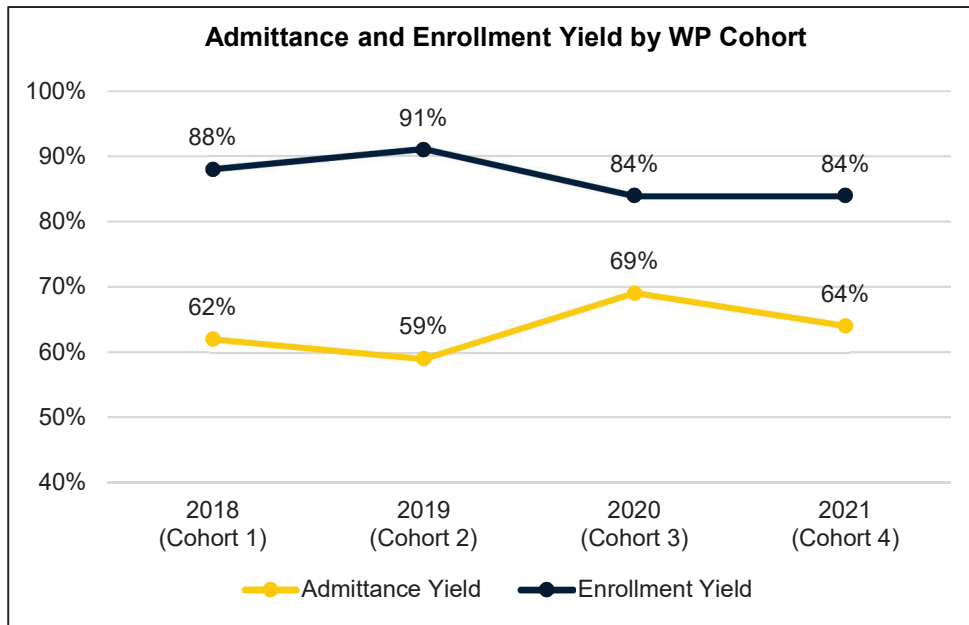
⁵ Ishitani, T. Studying attrition and degree completion behavior among first-generation college students in the United States. *The Journal of Higher Education*, 77(5), 861-885.

⁶ Whitcomb, K. M., & Singh, C. (2021). Underrepresented minority students receive lower grades and have higher rates of attrition across STEM disciplines: A sign of inequity? *International Journal of Science Education*, 43(7), 1054-1089.

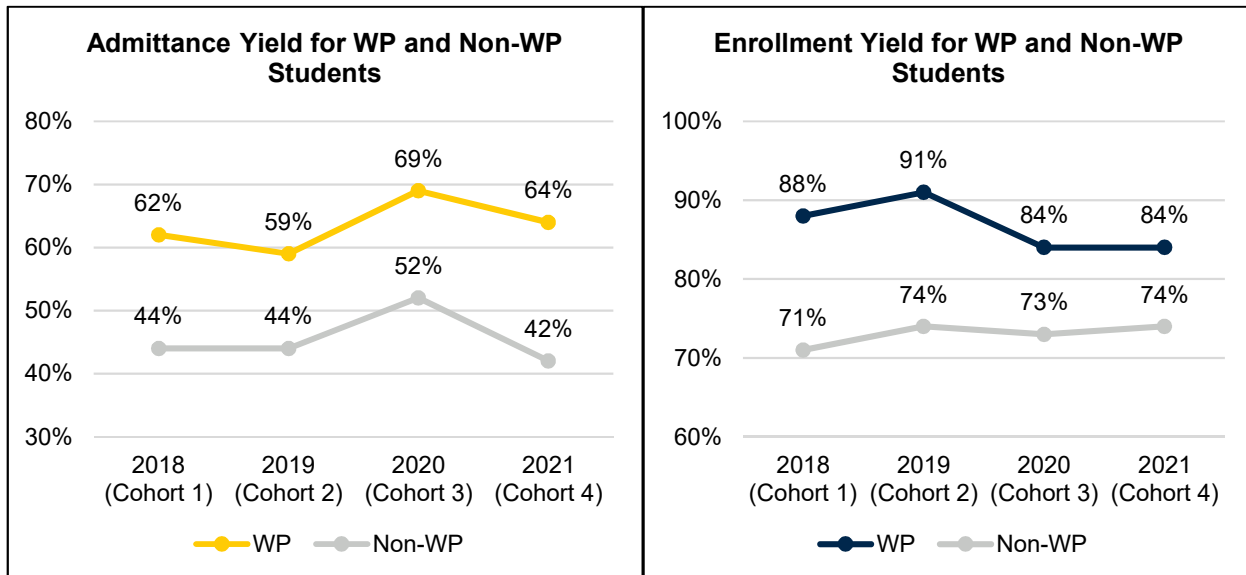
⁷ National Student Clearinghouse Research Center. (2021). *Updates on Higher Education Enrollment. COVID-19: Stay Informed with the Latest Enrollment Information.* <https://nscresearchcenter.org/stay-informed/>.



students from their same high schools. The figure below displays trends in admittance and enrollment yield for WP scholars by academic year.

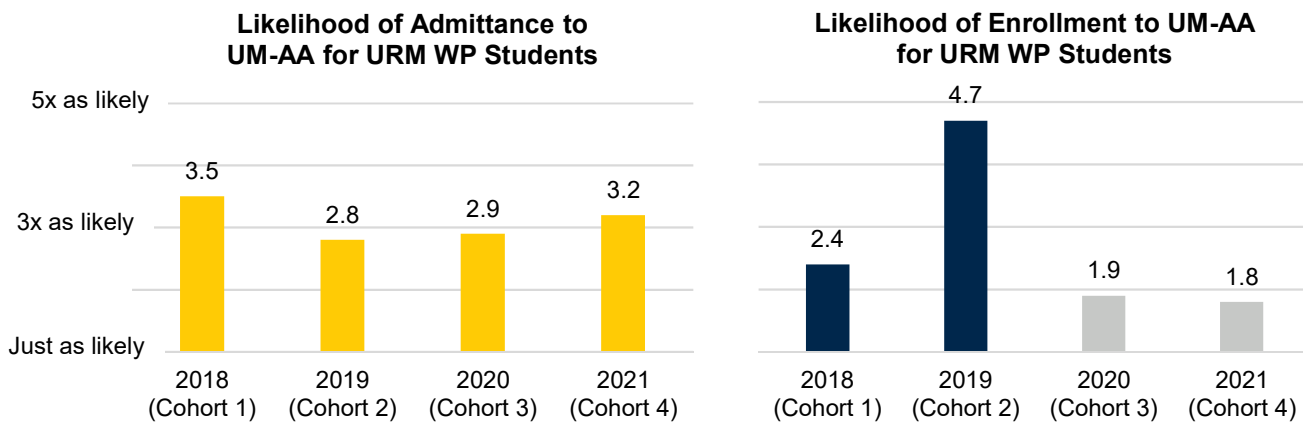


The admittance rate for WP scholars dropped slightly from 62% in cohort 1 to 59% in cohort 2, increased again to 69% in cohort 3, and dipped slightly to 64% in cohort 4. The enrollment yield for WP scholars increased slightly from 88% in cohort 1 to 91% in cohort 2, but decreased to 84% in cohort 3 and 4, respectively. *However, as shown in the two figures below, it is important to note that across all cohort years, the admittance and enrollment yield for WP students were consistently greater than those for non-WP students from their same high schools.*



Differences by Race/Ethnicity

The impact of WP on student admittance and enrollment to UM-AA also varied by racial/ethnic background. As compared to non-WP URM students from their same high schools, WP URM students⁸ were 3.5 times more likely to be admitted to UM-AA in 2018, 2.9 times more likely to be admitted to UM-AA in 2019, 2.9 times more likely to be admitted to UM-AA in 2020, and 3.2 times more likely to be admitted to UM-AA in 2021 compared to non-WP URM students in their same high schools ($p < 0.01$, respectively). Participation in WP also significantly impacted enrollment at UM-AA for URM students. WP URM scholars were 2.4 times more likely to enroll in 2018 and 4.7 times more likely to enroll to UM-AA in 2019 than non-WP URM students in their same high schools ($p < 0.05$, respectively). However, WP URM students were no more likely to enroll in 2020 or 2021 than non-WP URM students in their high schools. The figures below display the odds ratios of admittance and enrollment for WP URM students versus non-WP URM students across the first four cohorts.



*Comparison group is URM non-WP students. Odds ratios that are significant at $p < 0.05$ are highlighted in yellow.

*Comparison group is URM non-WP students. Odds ratios that are significant at $p < 0.05$ are highlighted in blue.

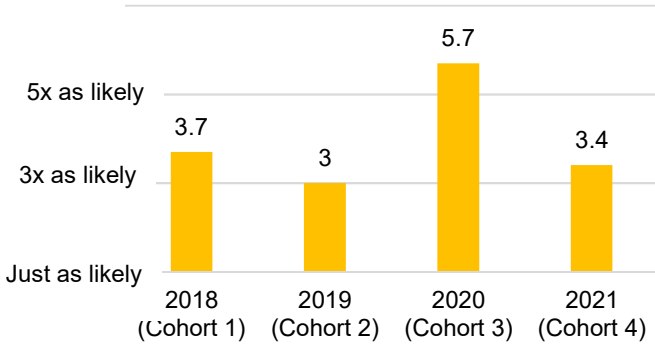
Participating in WP was particularly impactful on student admittance and enrollment to UM-AA for Black and Latinx⁹ students. Black students enrolled in WP were more likely to be admitted to UM-AA across all four admission cycles (3.7 times more likely in 2018, 3 times more likely in 2019, 5.7 times more likely in 2020, 3.4 times more likely in 2021; $p < 0.01$, respectively) than Black non-WP students in their high schools. Black WP students were also 6 times more likely to enroll at UM-AA in 2019 compared to same race peers in their high schools who were not enrolled in WP ($p < 0.01$). The figures below display the odds ratios of admittance and enrollment to UM-Ann Arbor for Black WP students in comparison to Black non-WP students in their high schools.

⁸ In the reported analyses, URM students include those who identified as Black, Hispanic/Latinx, or Native American. Students categorized as Two or More Races were not included in the reported analysis, as this racial/ethnic category can refer to both URM and non-URM students. However, we calculated the odds ratio of URM students both including and excluding students categorized as Two or More Races. The interpretation of findings did not differ across the analysis strategies.

⁹ "Hispanic/Latinx" is also referred to as "Hispanic/Latino" or "Latinx" in this appendix report.

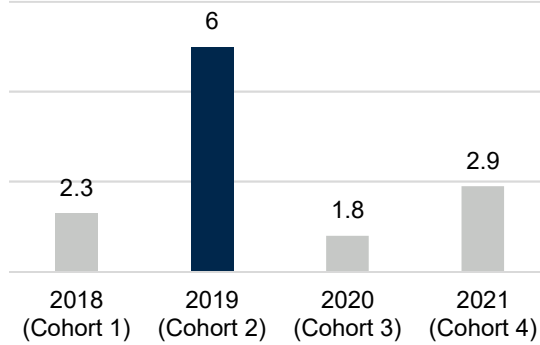


Likelihood of Admittance to UM-AA for Black WP Students



*Comparison group is Black non-WP students. Odds ratios that are significant at $p < 0.05$ are highlighted in yellow.

Likelihood of Enrollment to UM-AA for Black WP Students



*Comparison group is Black non-WP students. Odds ratios that are significant at $p < 0.05$ are highlighted in blue.

In 2021, Latinx students enrolled in WP were also 3.7 times more likely to be admitted to UM-AA than Latinx non-WP students in their same high schools ($p < 0.01$), and White WP students were 4.3 times more likely to be admitted to UM-AA than White non-WP students from their high schools ($p < 0.05$). However, WP students who identified as Asian¹⁰, Native American, Latinx, White, International, or two or more racial/ethnic groups were no more likely to be admitted to or enroll at UM-AA when compared to same race peers from their same high schools.

Academic Outcomes of WP Graduates at UM-AA

Methodology

This section details the academic progress of 194 UM-AA matriculants from the first four graduating cohorts of the WP program and compares their progress to that of similar groups of students from the same matriculating classes. All data were obtained from the U-M Data Warehouse, student enrollment and student records. Five mutually exclusive comparison groups are identified and detailed below. A series of ANCOVA tests were conducted to examine group differences in cumulative GPA as of winter 2022 while controlling for irregular enrollment, URM and first-generation college student status. A series of Fisher’s exact tests were also conducted to examine group differences in 4-year graduation rates among WP UM-AA matriculants to all identified comparison groups.

¹⁰ “Asian/Asian American” is referred to as “Asian” or “Asian/Pacific Islander” in this appendix report



Comparison Groups

- 1) **Wolverine Pathways Matriculants.** This group includes all WP graduates ($n = 194$) that have matriculated to UM-AA from 2018 to 2021.
- 2) **SuccessConnects (SC) students.** This comparison group includes students that were admitted to UM-AA from 2018 to 2021 and who opted to join SC regardless of participation level. Using stratified random sampling, a comparison group was created to include 200 SC students. Stratification was used to ensure that SC students were not affiliated with the WP program and were similar to WP students with respect to year of admittance to UM-AA.
- 3) **SuccessConnects (SC) Comparison students.** The SC comparison group includes all first-year students at UM-AA who had been invited to SC from 2018 to 2021 but chose not to opt-in. Students in this group did not participate in any SC experiences. A stratified random sample was created to ensure the group was like SC scholars with respect to their first-generation college student and URM status. This sample was further stratified to include 200 SC comparison students that were admitted in similar academic years as the WP students.
- 4) **SuccessConnects Traditional students.** The SuccessConnects traditional student group includes all students that matriculated to UM-AA from 2018 to 2021 who were not invited to join SC. These students have similar demographic characteristics to a traditional incoming UM-AA student (mostly non-URM and non-first-generation college students). Students in this group were never invited to SC and did not participate in any SC experiences. From this population, a stratified, random sample was created to ensure that the proportion of each race/ethnicity in the sample resembled that of the overall traditional group population. The sample was further stratified to include 200 SC traditional students that were admitted in similar academic years as WP students.
- 5) **Wolverine Pathways Comparison students.** The Wolverine Pathways Comparison group includes a stratified random sample of 200 students that matriculated to UM-AA from 2018 to 2021. Sampling was completed by the Office of the Registrar to ensure that students in this comparison group closely resemble the demographic characteristics and geographic location of WP matriculants. Students were stratified by URM, first-generation college student status and admittance year, and the sample only includes students that are not affiliated with WP, are in-state status, and come from Detroit, Ypsilanti and Southfield districts.
- 6) **Wolverine Pathways Traditional students.** The Wolverine Pathways Traditional group includes a stratified random sample of 200 students that matriculated to UM-AA from 2018 to 2021. Sampling was completed by the Office of the Registrar. Students in this group more closely resemble traditional incoming UM-AA students in respect to demographic characteristics (mostly non-URM and non-first-generation college students), but were stratified by admit year. The sample only includes students not affiliated with WP, that are in-state status, and come from Detroit, Ypsilanti and Southfield districts.



Results

Descriptive Statistics

As of winter 2022, 415 students graduated from WP. Among these 415 graduates, 194 students matriculated to UM-AA. This analysis includes 187 of these matriculated students, as 7 students who were dropouts or potential future dropouts (i.e., extremely low GPAs and no registration for multiple semesters) were excluded from the analysis. Among the 187 matriculants, 87.2% identified as URM students, 36.4% were first-generation college students and 3.2% were transfer students. 4.8% had irregular enrollment, defined as withdrawing from or failing to register for at least two fall or winter semesters.

WP matriculants had the highest percentage of URM students of all six samples. However, the proportion of first-generation college students is greater in the WP Comparison, SC Student, and SC Comparison samples than WP matriculants. At just 3.2%, the percentage of transfer students in the WP matriculant sample is also lower than the percentage of transfer students in the other five comparison samples. The proportion of WP matriculants with irregular enrollment is higher than that of WP Traditional and SC Traditional students, but lower than that of SC students and SC Comparison students. Table 1 provides a summary of the demographic representation of WP matriculants and the comparison samples.



Table 1: Demographic Summary of WP Matriculants and Comparison Samples

	WP Matriculants		WP Comparison		WP Traditional		SC Students		SC Comparison		SC Traditional	
	n	%	n	%	n	%	n	%	n	%	n	%
Under-Represented Minority												
URM	163	87.2%	153	83.6%	24	12.2%	101	50.5%	92	46.9%	5	2.5%
Black	130	69.5%	103	56.3%	18	9.2%	39	19.5%	32	16.3%	1	0.5%
Hispanic/Latinx	26	13.9%	40	21.9%	6	3.1%	51	25.5%	47	24.0%	3	1.5%
Two or More Races (URM)	7	3.7%	10	5.5%	0	0.0%	11	5.5%	13	6.6%	1	0.5%
Non-URM	24	12.8%	30	16.4%	172	87.8%	99	49.5%	104	53.1%	193	97.5%
Asian/Pacific Islander	9	4.8%	10	5.5%	64	32.7%	35	17.5%	25	12.8%	58	29.3%
White	12	6.5%	15	8.2%	89	45.4%	55	27.5%	71	36.2%	117	59.1%
Two or More Races (non-URM)	0	0.0%	2	1.1%	6	3.1%	3	1.5%	0	0.0%	6	3.0%
Not Indicated	3	1.6%	3	1.5%	13	6.5%	6	3.0%	8	4.1%	12	6.1%
First-Generation College Student												
First-Gen	68	36.4%	81	44.3%	62	31.6%	91	45.5%	97	49.0%	7	3.5%
Non-First-Gen	119	63.6%	102	55.7%	134	68.4%	109	54.5%	101	51.0%	191	96.5%
Transfer Status												
Transfer	6	3.2%	18	9.8%	27	13.8%	26	13.0%	35	17.7%	27	13.6%
Non-Transfer	181	96.8%	165	90.2%	169	86.2%	174	87.0%	163	82.3%	171	86.4%
Enrollment Status												
Irregular	9	4.8%	8	4.4%	5	2.6%	12	6.0%	14	7.1%	4	2.0%
Regular	178	95.2%	175	95.6%	191	97.4%	188	94.0%	184	92.9%	194	98.0%
Drop Out	0	0%	0	0%	0	0%	0	0%	2	1.0%	0	0%
Admit Year												
2021 (Cohort 4)	63	33.7%	67	36.6%	66	33.7%	66	33.0%	64	32.3%	64	32.3%
2020 (Cohort 3)	41	21.9%	56	30.6%	71	36.2%	47	23.5%	45	22.7%	44	22.2%
2019 (Cohort 2)	41	21.9%	43	23.5%	49	25.0%	43	21.5%	45	22.7%	45	22.7%
2018 (Cohort 1)	42	22.5%	17	9.3%	10	5.1%	44	22.0%	44	22.2%	45	22.7%
Graduation Status												
Awarded	17	40.5%	0	0%	0	0%	28	63.6%	26	59.1%	31	68.9%
Pending	7	16.7%	1	5.9%	1	10.0%	2	4.5%	1	2.3%	2	4.4%
Applied	4	9.5%	1	5.9%	2	20.0%	1	2.3%	0	0%	1	2.2%
Not Indicated	14	33.3%	15	88.2%	7	70.0%	13	29.5%	17	38.6%	11	24.4%



GPA Findings

Based on their cumulative GPA as of winter 2022, WP matriculants generally performed well ($M = 3.24$, $SD = 0.46$). GPAs ranged from a minimum of 1.76 to a maximum of 4.0, with a median value of 3.30. With each cohort, the performance of WP matriculants improved. Cumulative GPAs of WP matriculants differed by admit year ($F = 3.04$, $p < .05$), with students admitted in 2020 ($M = 3.36$, $SD = 0.41$) having significantly higher cumulative GPAs than students admitted in 2018 ($M = 3.08$, $SD = 0.46$) (see Table 2).

Table 2: Cumulative GPA as of Winter 2022 of WP Matriculants by Admit Year (n = 187)

Admit Year to UM-AA	N of Students	Mean GPA (SD)
2018	42	3.08 (0.46)
2019	41	3.21 (0.42)
2020	41	3.36 (0.41)
2021	63	3.28 (0.49)

Average cumulative GPA also differed by enrollment status ($t = 1.68$, $p < .05$). WP matriculants with regular enrollment ($M = 3.24$, $SD = 0.46$) had significantly higher GPAs than did students with irregular enrollment ($M = 3.09$, $SD = 0.25$). The average cumulative GPA of WP matriculants did not significantly differ by first-generation college student status, URM or transfer status.

Group Differences in GPA. When controlling for irregular enrollment, cumulative GPA differed significantly by sample group ($F = 15.68$, $p < 0.001$). On average, WP matriculants had significantly lower cumulative GPAs ($M = 3.24$, $SD = 0.46$) than WP traditional students ($M = 3.40$, $SD = 0.50$), SC students ($M = 3.46$, $SD = 0.48$), SC comparison students ($M = 3.40$, $SD = 0.50$) and SC traditional students ($M = 3.62$, $SD = 0.34$) (see Table 3).

Table 3: Cumulative GPA by Sample and Demographic Group - Mean GPA (SD)

	WP Matriculants	WP Comparison	WP Traditional	SC Students	SC Comparison	SC Traditional
Sample Means	3.24 (0.46)	3.28 (0.51)	3.40 (0.50)	3.46 (0.48)	3.40 (0.50)	3.62 (0.34)
URM						
URM	3.26 (0.44)	3.21 (0.50)	2.89 (0.79)	3.30 (0.53)	3.41 (0.49)	3.55 (0.28)
Non-URM	3.06 (0.54)	3.63 (0.40)	3.47 (0.40)	3.62 (0.37)	3.38 (0.52)	3.62 (0.34)
First-Generation College Student						
First-Gen	3.25 (0.44)	3.17 (0.47)	3.28 (0.57)	3.41 (0.59)	3.37 (0.48)	3.55 (0.25)
Non-First-Gen	3.23 (0.47)	3.37 (0.52)	3.45 (0.46)	3.50 (0.37)	3.42 (0.53)	3.62 (0.34)
Enrollment Status						
Irregular	3.09 (0.23)	2.80 (0.65)	3.25 (0.46)	3.32 (0.58)	2.76 (0.79)	3.64 (0.42)
Regular	3.24 (0.47)	3.30 (0.49)	3.40 (0.50)	3.47 (0.48)	3.44 (0.44)	3.61 (0.34)

GPA Differences by Irregular Enrollment. There were significant differences in cumulative GPA by irregular enrollment across all samples ($F = 24.91$, $p < 0.001$). Students with irregular enrollment had lower cumulative GPAs ($M = 3.06$, $SD = 0.64$) than did students with regular enrollment ($M = 3.42$, $SD = 0.47$). There was also a significant interaction effect of irregular enrollment by sample on cumulative GPA ($F = 2.86$, $p < 0.05$), such that GPA varied significantly by irregular enrollment for SC comparison students but not for WP matriculants. For SC comparison students, the average



cumulative GPA was significantly lower for those with irregular enrollment than those with regular enrollment ($t = 3.19, p < .01$). Critically, there was no significant difference between the average cumulative GPAs of WP students with irregular enrollment and regular enrollment ($t = 1.83, p = n.s.$), *suggesting participation in WP insulates students from the negative effects irregular enrollment had on students in other samples.*

GPA Differences by URM. When controlling for irregular enrollment, cumulative GPA differed significantly across all samples by URM status ($F = 80.82, p < 0.001$). In general, URM students at UM-AA ($M = 3.27, SD = 0.20$) had significantly lower cumulative GPAs than did non-URM students ($M = 3.51, SD = 0.19$). This finding is similar to what has been observed in higher education.¹¹ However, there was a significant interaction effect of URM status by sample ($F = 10.43, p < 0.001$), such that differences in GPA between URM and non-URM students at UM-AA varied across groups. URM WP students had significantly higher cumulative GPAs than non-URM WP students ($t = -1.77, p < 0.05$). However, among the WP comparison, WP traditional and SC student samples,¹² URM students had lower cumulative GPAs than their non-URM counterparts (see Table 3). *This suggests that participation in WP helped shield URM students from potential educational challenges students from similar backgrounds may face in their transition to U-M.*

GPA Differences by First-Generation College Student Status. When controlling for irregular enrollment, cumulative GPA also significantly differed by first-generation college student status across all samples ($F = 8.72, p < 0.01$), with first-generation college students exhibiting lower GPAs ($M = 3.31, SD = 0.52$) than students who were not first-generation ($M = 3.45, SD = 0.46$). There were no significant interaction effects of first-generation college student status by sample on cumulative GPA when controlling for irregular enrollment ($F = 1.41, p > .05$). However, it is important to note that the cumulative GPA of first-generation college students was lower than that of students who were non-first-generation college students for all comparison samples, but not for WP matriculants. Among WP matriculants, cumulative GPAs were similar for first-generation college students and non-first-generation college students. *This suggests that participation in WP can help to level the playing field for first-generation college students.*

Four Year Graduation Rates

Of the 42 WP students enrolled at UM-AA in 2018, 40.5% (17 students) graduated within four years (by winter 2022) and an additional 16.7% (7 students) graduated in summer 2022, for a total of 24 graduates (57.1%) as of summer 2022. An additional 9.5% (4 students) have applied and have pending graduations for fall 2022,¹³ and the remaining 33.3% have no indicated graduation status. The 4-year graduation rate did not differ significantly by URM status, first-generation college student status and irregular enrollment among WP matriculants.

Among the 41 WP matriculants admitted in 2018 that remained at UM-AA for all four years, cumulative GPA increased over time. On average, the cumulative GPAs of these students were significantly greater at the end of their senior year ($M = 3.12$) than at the end of their freshman year (M

¹¹ Whitcomb, K. M., & Singh, C. (2021). Underrepresented minority students receive lower grades and have higher rates of attrition across STEM disciplines: A sign of inequity? *International Journal of Science Education*, 43(7), 1054-1089.

¹² Caution should be taken in interpreting the difference in cumulative GPA by URM status among SC students since this analysis does not include SC students who also participate in WP. Furthermore, it does not take students' degree of participation in SC into account.

¹³ This report was finalized in fall 2022, ahead of the fall 2022 graduation conferrals.



= 2.98) ($t = -3.18, p < 0.001$). There was also a significant difference in the average cumulative GPA of 2018 admits who graduated ($M = 3.34, SD = 0.48$) and those who did not graduate ($M = 2.93, SD = 0.38$) ($t = -2.85, p < 0.001$). However, there was not a significant difference in average cumulative GPA between those who have an awarded/pending/applied degree status ($M = 3.15, SD = 0.48$) and those without a degree ($M = 2.94, SD = 0.40$).

Group Differences in 4 Year Graduation Rates. Among students eligible to graduate in Winter 2022 (fall 2018 admits), WP matriculants were more likely to graduate in four years than students in the WP traditional sample ($p < 0.05$) (see Table 1). The odds of WP matriculants graduating in four years were not significantly different from those of the WP comparison, SC comparison, SC traditional and SC students. Additionally, the odds of WP matriculants receiving their undergraduate degree, having a pending degree or applying for graduation within four years were not significantly different from those of the WP comparison, WP traditional, SC comparison, SC traditional and SC students.

Self-Reported Academic Success and College Adjustment of WP Graduates

Methodology

This report includes data on the college experiences of the first four cohorts of WP graduates ($n = 415$), and details their self-reported academic success, college adjustment and use of campus resources. Data were obtained using the WP Post Graduate Survey. The WP post graduate survey is a self-administered survey distributed online via Qualtrics to all WP graduates annually each spring that collects information on college adjustment, use of campus resources, academic and personal challenges since being enrolled in college and post-graduation plans. One hundred seventy (40.96%) of WP graduates participated in the 2022 Post Graduate Survey. All (100%) of students currently at UM-AA and adhering to the Wolverine Pathways' scholarship contract completed the survey ($n = 137$), 14% of students at UM-AA and not under contract for the Wolverine Pathways' scholarship completed the survey ($n = 7$) and 9% of students not at UM-AA completed the survey ($n = 18$). For the purposes of analysis, 4 cases were removed because respondents answered 10% or less of the questions presented to them. Of the 166 valid respondents, 145 (87.4%) had attended UM-AA at some point, 42.8% ($n = 71$) were first-generation college students and 88% ($n = 146$) were URM students.

Descriptive statistics (frequencies) were calculated to examine WP graduates' academic success, college adjustment, ability to navigate college and post-graduation plans. T-tests were conducted to examine differences between WP matriculants at UM-AA and WP graduates at other universities in their preparation for college. T-tests also explored group differences by URM and first-generation college student status on preparation for college and use of campus resources while at UM-AA. A series of Fisher's exact tests were conducted to examine differences in post-graduation plans among WP matriculants to UM-AA by URM and first-generation college student status.

Results

Preparation for College

Overall, WP matriculants at UM-AA reported that high school, Wolverine Pathways, and family members prepared them "somewhat" for the academic demands of college and prepared them "a little" for UM-AA's cultural context and social life. Compared to WP graduates at other universities,



those at UM-AA reported feeling less prepared by their high schools for college’s academic demands ($t = 2.74, p < 0.01$) and cultural context ($t = 4.04, p < .001$). WP matriculants at UM-AA also reported feeling less prepared by WP for the academic demands ($t = 2.28, p < .05$) and cultural context of college than their counterparts at other institutions ($t = 2.49, p < .05$).

Among WP matriculants at UM-AA, first-generation college students reported feeling less prepared for the academic demands of college by their high school ($t = 2.94, p < .01$) and their family ($t = 3.17, p < .01$) than did non-first-generation college students. First-generation college students also reported feeling less prepared by their family for the cultural context of UM-AA ($t = 2.79, p < .01$). Among WP matriculants to UM-AA, URM students felt less prepared for the cultural context of UM-AA by their high school ($t = 3.23, p < .001$) and WP ($t = 2.07, p < .05$) than non-URM students.

Academic Success and College Adjustment

While WP matriculants at UM-AA reported feeling less prepared by WP for college than did their counterparts at other universities, WP matriculants at UM-AA reported doing well academically and adjusting well to college life. Furthermore, the average self-reported cumulative GPA of UM-AA students ($M = 3.28, SD = 0.46$) was not significantly different than that of non-UM students ($M = 3.40, SD = 0.56$). On a 5-point scale ($1 = not\ at\ all\ effective, 5 = very\ effective$), WP matriculants at UM-AA rated their effectiveness in and satisfaction with their college courses as above average ($M = 3.55, M = 3.65$, respectively). Above average levels of adjustment to college life ($M = 3.56$) and a sense of effectiveness in their personal lives ($M = 3.31$) among WP matriculants at UM-AA likely contributed to their academic success.

Navigating College and Use of Campus Resources

Although WP matriculants were doing well academically and adjusting to college life, they reported that it was “fairly difficult” to find people on campus who share their background/experiences, get to know faculty, feel comfortable with students from different backgrounds, find where to get academic help, find information on financial assistance or resources and find information about majors and career counseling. Furthermore, compared to WP graduates who did not attend UM-AA, those at UM-AA reported greater difficulty getting to know faculty ($t = 2.60, p < .01$), finding academic help ($t = 2.53, p < .05$) and finding information on financial assistance ($t = 2.68, p < .01$).

Nonetheless, WP graduates at UM-AA utilized campus resources to support their success. On average, WP graduates at UM-AA reported using academic advising and diversity/multicultural resources most frequently (on a monthly basis), followed by academic support/mentorship, tutoring and research/writing resources (several times a semester), and wellness resources (once or twice a semester). URM WP students at UM-AA tended to use diversity/multicultural resources ($t = -4.05, p < .001$) and academic advising resources ($t = -2.73, p < .01$) more frequently than did non-URM WP students, suggesting the added value of these resources for those underrepresented or minoritized on campus.

Post-Graduation Plans

Only 15 (9.5%) WP graduates at UM-AA students reported that they will receive an undergraduate degree within 4 years from UM-AA in 2022. There is strong indication that the COVID-19 pandemic impacted WP matriculants’ time to degree. For instance, 21.1% of UM-AA WP students reported that



they adjusted their academic/career plans, and 14% adjusted their graduation timeline due to COVID-19. First-generation college WP students at UM-AA were more likely to adjust their academic/career plans ($z = 2.22, p < .05$) and graduation timelines ($z = 3.15, p < .001$) than were non-first-generation WP UM-AA students. Of the 9 UM-AA WP matriculants who reported their post-graduation plans, 55.6% planned to pursue graduate/professional school. This suggests that although COVID-19 impacted WP students' graduation timelines, it did not deter them from goals of furthering their education beyond their undergraduate degree.

Conclusion

Wolverine Pathways was launched in 2016 as part of the University of Michigan's continued commitment to advance diversity, equity and inclusion. Including scholars residing in Ypsilanti, Detroit and Southfield, with the goal of enhancing their admissibility to the University of Michigan, WP has served more than 1,150 scholars in grades 7 through 12 since its inception and has graduated 470 scholars as of winter 2022. The program has proven to be impactful in increasing accessibility to higher education. WP students are more likely to be accepted and enrolled at UM-AA than other students from their high schools. Once enrolling at UM-AA and with the support of the SuccessConnects program, WP students generally perform competitively, are well adjusted to college life and report high levels of satisfaction with college courses.

