



The Effect of Interscholastic High School Athletics Participation on Student Outcomes for the Classes of 2012-2014

Key Findings

1. Across MMSD, approximately 50% of all students in the 2012, 2013, and 2014 graduating cohorts participated in interscholastic athletics at some point during their high school careers. Of those participants, 11% participated for one year and 38% participated for 2+ years.
2. Overall, students who participated in interscholastic athletics at any point in their high school careers demonstrate better academic, behavior, and graduation/postsecondary outcomes than those who did not, with differences particularly pronounced for students who participated in 2+ years of athletics.
3. MMSD interscholastic athletes outperformed similar non-athletes on all academic and behavioral outcomes.

Background

During 2015, athletics has been a topic of interest for MMSD's Board of Education. Athletics participation ties directly into MMSD's Strategic Framework Goal #2: Every student has access to a challenging and well-rounded education, which is measured in part by access and participation data for extra-curricular and co-curricular activities like athletics. In particular, the Board has asked questions regarding whether high school students who compete in school-sponsored athletics show different outcomes than non-participants, in an effort to understand how to prioritize athletic program funding. In this report, we investigate the following questions of interest:

1. For the 2012-2014 graduating cohorts, who participated in interscholastic high school athletics?
2. What are the academic and behavioral outcomes for interscholastic high school athletics participants?
3. How do academic and behavioral outcomes for interscholastic high school athletics participants compare to similar non-participants?

Nationwide, approximately 7.8 million high school students participated in school athletics during 2014-15. Of these participants, about 42% are female, a share that continues to increase over time. The most popular sports for boys are football, track, and basketball, while the most popular for girls are track, volleyball, and basketball. Wisconsin ranks 14th in the nation in athletics participation, with more than 185,000 student athletes (National Federation of State High School Associations, 2015). The four conventional MMSD high schools participate in the Big 8 Conference, which includes 10 local high schools, and are members of the Wisconsin Interscholastic Athletic Association (WIAA).

Research on interscholastic athletics has demonstrated clear and consistent associations between athletics participation and positive academic and professional outcomes, including educational expectations, academic performance, educational attainment, and income (Videon, 2002; Marsh & Kleitman, 2003; Carlson & Scott, 2005). Other recent research has found that former youth athletes have stronger professional and prosocial skills, including higher career status and volunteerism that persist for decades (Kniffin, Wansink, & Shimizu, 2015). The *Becoming a Man – Sports Edition* program in Chicago Public Schools randomly assigned African-American males to organized athletic activities; participants showed higher school engagement, better academic performance, and fewer arrests than their peers who did not participate (University of Chicago Crime Lab, 2012). Bowen & Greene (2012) studied public schools in Ohio and found positive associations at the school level between athletics participation, football and basketball success, and student test scores and graduation rates even when controlling for school demographic differences. In addition to these findings, proponents of school-sponsored athletics have argued that robust athletics programs also may have community benefits, including preventing students from leaving to enroll in other districts and galvanizing community support for public schools.

However, we also know that there are substantial differences between the population of students participating in interscholastic athletics and those not participating. As such, it is difficult to say whether athletics participation causes positive outcomes, whether better-performing students are more likely to participate in athletics, or whether some other factors entirely impact both athletics participation and outcomes for these students. More rigorous methodology, including statistical methods to account for pre-participation differences between students, helps us get closer to identifying a causal impact of athletics participation. To this point, the methodological rigor of quantitative research on



the impact of athletics participation has been limited, but we use a more rigorous approach in this report that builds on the strengths of prior work while moving closer to causality.

A complementary report, *2014-15 Interscholastic High School Athletics Participation, Academic Performance, and Eligibility Requirements* is available at mmsd.org/research.

Data and Methods

For all three questions, our dataset includes all students included in the official DPI graduating cohorts of 2012, 2013, and 2014 (three cohorts total), whether or not they actually graduated. These are the three most recent cohorts for which we have official high school completion data available. We determined levels of athletics participation through students' schedules, which have all school-sponsored interscholastic athletics programs listed as extracurricular activities. We excluded extramural athletic activities through Madison School and Community Recreation (MSCR), which were not determined to be MMSD-sponsored interscholastic sports. We also cannot account for any outside athletic activities, such as club sports, as those activities are not captured in MMSD systems.

For **Question #1**, we report counts and percentages for athletics participants, including breakouts by student demographics (e.g., race/ethnicity, gender, special education, low-income, ELL) and school. We identify students as athletics participants if they ever participated in an interscholastic high school sport and had that sport appear on their schedule, which means students trying out for a sport who are cut shortly after the sport begins will not appear. Our analysis focuses on three bands of participation: 0 years, 1 year, and 2+ years, regardless of the number of sports in which the student participated. To determine these bands, we conducted a preliminary review of student outcomes, which showed greater variation among students in these three participation bands than in other configurations (e.g., 2 years versus 4 years). The effects of participation seemed greatest at the 2 year mark, making it the appropriate cutoff.

For **Question #2**, we look at a variety of outcomes for athletic participants, including academics (9th grade course failures, high school GPA, and AP/Honors credits earned), assessment (best composite ACT score, ACT college readiness benchmarks in Reading and Math), behavior (behavior events, out-of-school suspensions, attendance rate), and graduation/postsecondary (four-year graduation status, postsecondary enrollment). We show these outcomes for students within each participation band (0 years, 1 year, and 2+ years) as well as by high school.

For **Question #3**, we start from the standard definition of an MMSD student athlete, which is any student who participated in athletics during their high school career, regardless of the amount of participation. We then create a comparison group of similar students who never participated in athletics during high school. To do so, we use a technique called Propensity Score Matching (PSM) to pair athletics participants with the most similar non-participants and assess the impact of athletics participation on student outcomes. For additional details on this process, see the Appendix. Although this process cannot account for all differences between student groups, we have accounted for a robust set of demographic and academic variables, as well as middle school athletics participation, allowing confidence that the differences between groups are as close to causal as possible, given the data available, and as rigorous as any published quantitative research on the topic.



Findings

Question #1: For the 2012-2014 graduating cohorts, who participated in interscholastic high school athletics?

Table 1 lists the school graduated from and demographics of the total high school students, broken down by years of athletic participation (0 years, 1 year, and 2+ years).

Table 1: Interscholastic Athletics Participation Rates by School and Demographic Group

Grouping Category	Group	Total Students	0 Years	1 Year	2+ Years
Total	Grand Total	5583	50%	11%	38%
School of Graduation	East Hi	1217	53%	11%	36%
	Memorial H	1340	46%	12%	42%
	LaFollette	1131	48%	10%	42%
	West Hi	1578	47%	12%	42%
Race/Ethnicity	Native American	25	68%	16%	16%
	Asian	516	65%	11%	25%
	African-American	1130	66%	13%	21%
	Hispanic	796	60%	12%	28%
	Multiracial	357	48%	12%	39%
	White	2754	39%	10%	51%
Gender	Female	2770	53%	11%	36%
	Male	2813	48%	11%	41%
Income	Not Free/Reduced	3749	43%	11%	46%
	Free/Reduced	1834	65%	12%	22%
Special Education Status	Not Special Ed.	4594	47%	11%	42%
	Special Ed.	989	67%	10%	23%
ELL Status	Not ELL	4522	47%	11%	42%
	ELL	1061	63%	13%	24%

Note: Shabazz High had six athletics participants and another five came from Innovative & Alternative programs. We do not show these schools' data separately in the table above because of the small student counts, but these students are included in all demographic breakouts.

Across MMSD, approximately 50% of all students in the 2012-2014 graduating cohorts participated in interscholastic athletics at some point during their high school careers. Of those participants, 11% participated for one year and 38% participated for 2+ years. Participation rates were relatively consistent across the four conventional high schools. White students, male students, not low-income students, not special education students, and not ELL students all had higher rates of 2+ years of participation than their counterparts.



From 2009-10 (freshman year for the Class of 2012) to 2013-14 (senior year for the Class of 2014), MMSD offered 17 interscholastic high school sports. Table 2 lists participant totals and demographics for each of these sports across the three included cohorts.

Table 2: Interscholastic Athletics Participant Totals by Sport, School, and Demographic Group

Grouping Category	Group	Total Students	Baseball & Softball	Basketball	Cheer	Cross Country	Football	Golf	Gymnastics	Hockey	Poms	Soccer	Swimming & Diving	Tennis	Track	Volleyball	Wrestling
Total	Grand Total	5583	393	524	96	491	530	97	98	78	65	757	253	408	630	423	113
School	East	1217	75	112	25	72	126	19	51	9	20	160	61	82	110	91	16
	Memorial	1340	115	127	17	162	130	27	28	21	14	170	79	102	183	97	26
	La Follette	1131	107	140	30	69	145	24	4	13	11	146	46	74	168	111	34
	West	1578	92	138	23	188	113	27	13	32	20	272	67	150	167	118	35
Race/Ethnicity	Native American	25	2	1	0	2	3	0	0	0	0	1	1	0	1	1	0
	Asian	516	5	27	1	24	14	4	7	2	4	48	3	71	27	22	7
	African-American	1130	20	162	29	10	166	2	6	0	5	36	9	16	104	31	16
	Hispanic	796	26	27	17	42	43	4	8	3	6	173	25	34	50	25	26
	Multiracial	357	27	42	10	20	47	4	8	2	6	36	12	24	48	29	9
Gender	White	2754	313	265	39	393	257	83	69	71	44	463	203	263	399	315	54
	Female	2770	179	226	92	255	27	35	96	30	65	352	128	184	296	305	8
Income	Male	2813	214	298	4	236	503	62	2	48	0	405	125	224	334	118	105
	Not Free/Reduced	3749	344	364	52	447	354	90	85	73	49	598	225	363	482	355	77
Special Education Status	Free/Reduced	1834	49	160	44	44	176	7	13	5	16	159	28	45	148	68	36
	Not Special Ed.	4594	352	458	82	450	431	90	86	73	60	688	226	372	559	392	84
ELL Status	Special Ed.	989	41	66	14	41	99	7	12	5	5	69	27	36	71	31	29
	Not ELL	4522	382	485	78	446	482	94	87	76	61	567	236	351	551	400	86
ELL Status	ELL	1061	11	39	18	45	48	3	11	2	4	190	17	57	79	23	27

Note: Shabazz High had six athletics participants and another five came from Innovative & Alternative programs. We do not show these schools' data separately in the table above because of the small student counts, but these students are included in all demographic breakouts. Some students appear as participants in sports not typically played by that gender (e.g. 24 females in football), partially due to the presence of student managers in athletics participation records.

Soccer (757), track (630), football (530), and basketball (524) had the highest participation across these three cohorts. Soccer had the highest total participation across all four schools. White students had the highest participation in every sport, although participation for students of color was high for cheer, wrestling, basketball, football, and soccer.



Question #2: What are the academic and behavioral outcomes for interscholastic high school athletics participants?

Table 3 lists outcomes for the 2012, 2013, and 2014 graduating cohorts by years of interscholastic athletic participation.

Table 3: Outcomes for All Students by Years of Interscholastic Athletics Participation

Category	Outcome	0 Years	1 Year	2+ Years	Total
	Students	2808	629	2146	5583
Academics	Grade 9 two or more Fs	39%	28%	8%	26%
	Average Grade 9 Course Failures	2.48	1.37	0.39	1.55
	High School Cumulative GPA	2.22	2.57	3.13	2.61
	High School Core GPA	2.05	2.37	2.97	2.44
	Grade 11 3.0 GPA	30%	39%	65%	46%
	Average AP/Honors Credits Earned with C or Better	1.13	1.75	3.66	2.17
Assessment	Best ACT Composite Score	21.4	22.3	24.3	23.1
	ACT Participation	44%	60%	86%	62%
	Met ACT Reading College Readiness Benchmark	48%	55%	71%	61%
	Met ACT Math College Readiness Benchmark	49%	55%	66%	59%
Behavior	Average High School Behavior Events	3.9	4.0	1.7	3.1
	Average High School Out-of-School Suspensions	0.9	0.7	0.2	0.6
Graduation & Postsecondary	High School Attendance	87.5%	91.2%	94.0%	90.4%
	High School Completion	64.2%	78.7%	95.9%	78.0%
	Postsecondary Enrollment	43%	58%	85%	61%

Note: Percent meeting college readiness benchmarks is based only on tested students (e.g., a non-tested student is not included in the calculation).

Overall, students who participated in interscholastic athletics at any point in their high school careers demonstrate better outcomes than those who did not, particularly students who participated in 2+ years of athletics. For example, students with 2+ years of participation had a high school cumulative GPA of 3.13 (compared to a 2.22 for non-athletes), met ACT reading and math college readiness benchmarks at 71% and 66% (compared to 48% and 49% for non-athletes) and a four-year high school completion rate of 95.9% (compared to 64.2%). These cohorts graduated before universal ACT administration in MMSD, and we observe that athletes took the ACT at much higher rates than non-athletes.

We also chose to take a special look at high school completion, shown in Table 4 below, to see if the positive trend held not just overall, but across student groups. The table illustrates that this trend does hold.

Table 4: High School Completion by Years of Interscholastic Athletics Participation and Student Group

Grouping Category	Group	0 Years	1 Year	2+ Years	Total
Total	Total	64.2%	78.7%	95.9%	78.0%
	East	64.8%	80.9%	94.0%	77.0%
School of Graduation	Memorial	68.9%	82.9%	94.6%	81.2%
	La Follette	74.4%	82.8%	97.7%	85.2%
	West	75.3%	85.9%	98.2%	86.1%
Race/Ethnicity	Asian	77.5%	89.3%	99.2%	84.1%
	African-American	45.2%	61.9%	82.3%	55.1%
	Hispanic	57.0%	69.7%	91.5%	68.2%
	Multiracial	66.9%	77.3%	95.0%	79.3%
Gender	White	76.2%	89.2%	98.6%	89.0%
	Female	71.5%	86.5%	98.6%	82.9%
Income	Male	56.2%	71.2%	93.5%	73.2%
	Not Free/Reduced	68.6%	79.0%	96.4%	82.6%
Special Education Status	Free/Reduced	58.3%	78.1%	93.7%	68.6%
	Not Special Ed.	71.0%	82.2%	96.7%	83.0%
ELL Status	Special Ed.	42.1%	60.4%	89.1%	54.9%
	Not ELL	62.7%	78.9%	96.0%	78.4%
	ELL	69.0%	77.9%	94.9%	76.3%



To further examine these trends, we broke out the same results for the four conventional high schools and the graduating cohorts of 2012, 2013, and 2014. Table 5 shows those results.

Table 5: Outcomes for Student Athletes with 2+ Years of Interscholastic Participation by High School

Category	Outcome	East	La Follette	Memorial	West
	Students	434	480	564	656
Academics	Grade 9 two or more Fs	8%	10%	7%	6%
	Average Grade 9 Course Failures	0.35	0.51	0.35	0.28
	High School Cumulative GPA	3.00	3.04	3.19	3.26
	High School Core GPA	2.84	2.80	3.06	3.12
	Grade 11 3.0 GPA	59%	60%	67%	72%
	Average AP/Honors Credits Earned with C or Better	4.36	3.43	3.96	3.18
Assessment	Best ACT Composite Score	23.2	21.5	25.3	26.2
	ACT Participation	80%	84%	90%	89%
	Met ACT Reading College Readiness Benchmark	65%	52%	81%	78%
	Met ACT Math College Readiness Benchmark	58%	46%	72%	80%
Behavior	Average High School Behavior Events	2.9	2.5	0.7	1.2
	Average High School Out-of-School Suspensions	0.3	0.2	0.1	0.1
Graduation & Postsecondary	High School Attendance	92.1%	94.5%	95.1%	94.0%
	High School Completion	94.0%	94.6%	97.7%	98.2%
	Postsecondary Enrollment	78%	81%	91%	90%

Overall, students who participated in 2+ years of interscholastic athletics at each high school show strong academic and behavioral outcomes. These athletes at all four high schools earn two or more grade 9 course failures at 10% or below, have cumulative GPAs of at least 3.00, and have earned at least 3 AP/honors credits. High school completion rates are between 94%-98% and these students enroll in postsecondary education at rates between 78%-91%.

For detailed breakouts of student outcomes by years of athletic participation and student groups (e.g., race/ethnicity, free/reduced lunch, ELL, and Special Education) see the interactive table [MMSD Interscholastic Athlete Outcomes](#), available at mmsd.org/research.



Question #3: How do academic and behavioral outcomes for interscholastic high school athletics participants compare to similar non-participants?

While Question #2 helps show the differences between athletes and non-athlete outcomes, it does not imply that athletics causes these differences. To test that theory, we created a comparison group of students who are demographically and academically similar to interscholastic high school athletics participants (see Appendix for description of the two groups). For this question, athletes refer to a student who participated in interscholastic athletics at any point in their high school career, whether for one year or four. The matching procedure was highly successful, generating groups of students that were statistically equivalent on every matching variable and distributed similarly across schools.

After completing the matching procedure, we conducted t-tests (for differences in means) and chi-square tests (for differences in proportions) to examine whether the matched athletes and non-athletes had significantly different outcomes across four categories of outcome variables: Academics, Assessment, Behavior, and Graduation & Postsecondary. Table 6 lists the results of these tests.

Table 6: Academic and Behavioral Outcomes for Interscholastic Athletes and Non-Athletes

Category	Outcome	Athletes (Treatment Group)	Non-Athletes (Comparison Group)
Academics	Grade 9 two or more Fs	21%***	28%
	Average Grade 9 Course Failures	1.05***	1.64
	High School Cumulative GPA	2.71**	2.63
	High School Core GPA	2.49***	2.39
	Grade 11 3.0 GPA	42%	43%
	Average AP/Honors Credits Earned with C or Better	2.3	2.1
Assessment	Best ACT Composite Score	22.6***	23.9
	ACT Participation	39%***	31%
	Met ACT Reading College Readiness Benchmark	54%***	63%
	Met ACT Math College Readiness Benchmark	56%***	67%
Behavior	Average High School Behavior Events	3.75	3.54
	Average High School Out-of-School Suspensions	0.47***	0.70
	High School Attendance	92.0%***	90.8%
Graduation & Postsecondary	High School Completion	87.7%***	79.2%
	Postsecondary Enrollment	71%***	59%

Note: statistically significant differences are highlighted by the mean or proportion for athletes appearing in **bold**. *** = 99% significance, ** = 95% significance, * = 90% significance.

Overall, interscholastic athletes outperformed non-athletes on most outcome measures. For example, athletes completed high school at a rate of 87.7%, compared to 79.2% for non-athletes, and enrolled in postsecondary education at a rate of 71%, compared to 59%. The only exceptions were Grade 11 3.0 GPA, AP/Honors credits earned with a C or better, and behavior events, where athletes and non-athletes were statistically similar in their outcomes, and ACT results, where athletes actually scored worse than their matched peers. However, ACT participation rates were about eight percentage points higher among athletes than non-athletes. These ACT participation rates are from cohorts of students who graduated before universal ACT administration in MMSD.

Conclusion

Across MMSD, approximately 50% of all students in the 2012-2014 graduating cohorts participated in interscholastic athletics at some point during their high school careers. Of those participants, 11% participated for one year and 38% participated for 2+ years. White students, male students, not low-income students, not special education students, and



not ELL students all had higher rates of 2+ years of participation than their counterparts. From 2009-2014, MMSD offered 17 competitive high school sports. Soccer, track, football, and basketball had the highest participation across these three cohorts.

Overall, students who participated in interscholastic athletics at any point in their high school careers demonstrate better academic, behavior, and graduation/postsecondary outcomes than those who did not. These differences are particularly pronounced for students who participated in 2+ years of athletics, as compared to students who never participated. This finding was consistent for each of the four conventional high schools, where students who participated in 2+ years of interscholastic athletics at each high school show strong academic and behavioral outcomes. Figure 1 below demonstrates this trend for high school completion, as students with high levels of athletics participation graduate almost universally while non-participants have much lower graduation rates. [Click here](#) to see an interactive online version of this graphic for different student groups, also available on the Visual Analytics page at mmsd.org/research.

Figure 1: Four-Year Graduation Outcomes by Years of Athletics Participation



Although these trends are strong, we know there may be substantial differences between the population of students participating in interscholastic athletics and those not participating. As such, it is difficult to say whether athletics participation causes positive outcomes, whether better-performing students are more likely to participate in athletics, or whether some other factors entirely impact both athletics participation and outcomes for these students.

To test whether participation in interscholastic athletics caused the difference in outcomes between students, we used a more rigorous methodology, comparing interscholastic high school athletes with a matched group of similar non-participants. We found that athletes outperformed non-athletes on all outcome measures. For example, athletes completed high school at a rate of 87.9%, compared to 78.5% for non-athletes, and enrolled in postsecondary education at a rate of 71%, compared to 59%. The only exceptions were Grade 11 3.0 GPA, best ACT composite score, ACT math college readiness benchmark, and behavior events, where athletes and non-athletes were statistically similar in their outcomes.

Our research findings from Question #3 presents incredibly compelling evidence in favor of interscholastic athletics participation, as we demonstrate that students who were substantially similar before choosing whether to participate had better outcomes across almost all variables than those choosing not to participate. Although we acknowledge that we cannot prove that the differences in outcomes between our matched groups are due only to interscholastic athletics participation, we believe we have moved closer to doing so than the vast majority of published research on interscholastic athletics. As such, we are confident in suggesting that the quantitative evidence points to interscholastic athletics participation having benefits for students across a variety of quantifiable academic and behavioral measures.



Appendix: Propensity Score Matching Methods

The logic of propensity score matching involves calculating the predicted probability of participation in a program or activity (in this case, competitive MMSD-sponsored athletics) for a group of students and then creating matched pairs of students with similar probability of participation, one who participated and one who did not. In theory, the two students in each matched pair will be substantially similar apart from athletics participation, which would make it reasonable to assume that any differences in their outcomes is attributable to athletics.

The variables used in the PSM model to predict athletics participation should be expected to affect, but not be affected by, athletics participation in high school. To that end, we create our matched pairs using variables taken from students' middle school careers.

We use the following middle school outcome variables:

- Middle school extramural athletics participation through MSCR
- Middle school GPA
- Grade 8 attendance
- Grade 8 out-of-school suspensions
 - We chose to use suspensions as opposed to behavior events because of greater consistency across middle schools in how suspensions are recorded. Including both suspensions and behavior events in the match is unnecessary due to expected collinearity between the two variables.

We also use the following demographic variables:

- Gender
- Grade 8 race/ethnicity (indicator variables for African-American, Hispanic, Asian, Multiracial)
- Grade 8 free/reduced lunch
- Grade 8 special education status
- Grade 8 ELL status
- Grade 8 parent with bachelor's degree or higher
- Grade 8 single adult in home

We acknowledge that using the variables above in this model does not account for every possible difference between athletes and non-athletes, and that we cannot definitively say that all differences between are matched groups are due to athletics. However, we believe our set of matching variables is stronger and more robust than that used in most published academic research on student athletes, and that by controlling for a vector of academic and demographic characteristics, as well as prior athletics participation, we come closer to isolating the impact of athletics than work that predates ours.

We conducted the match using the `psmatch2` program within Stata. We used a nearest neighbor matching algorithm without replacement, which means each athlete was matched with a single non-athlete, and each non-athlete could only serve as the match for one athlete. To enhance the precision of our match, we imposed a caliper of one-tenth of a standard deviation of the propensity score, which means that many athletes and non-athletes were dropped because no student from the other group was similar enough to them for us to be confident attributing the differences between their outcomes to athletics participation.

The table below illustrates the success of our matching procedure, which resulted in no statistically significant differences between the two groups on any matching variable.

Table 7: Middle School Outcomes and Demographics for Athletes and Non-Athlete Groups

		Athletes (Treatment Group)	Non-Athletes (Comparison Group)
Middle School Outcomes	Number of Students	1231	1231
	Average Middle School GPA	3.07	3.10
	Middle School MSCR Athletics Participation	47%	48%
	Average Grade 8 Attendance	94.6%	94.6%
	Average Grade 8 Out-of-School Suspensions	0.20	0.20
Grade 8 Demographics	Female	50%	50%
	African-American	18%	18%
	Hispanic	15%	15%
	Asian	10%	8%
	Multiracial	8%	8%
	Free/Reduced Lunch	42%	40%
	Special Education	17%	17%
	ELL	23%	21%
	Parent with bachelor's degree or higher	42%	44%
Single parent	34%	33%	

It is important to note that this table reflects nothing about student outcomes, and the numbers presented are shown only to demonstrate the baseline similarity of the groups created to answer Question #3.



Works Cited

- Bowen, D.H., & Greene, J.P. (2012). Does athletic success come at the expense of academic success? *Journal of Research in Education*, 22(2).
- Carlson, D., & Scott, L. (2005). *What is the status of high school athletes 8 years after their senior year?* [Statistics In Brief 2005-303]. Washington, DC: Institute of Education Sciences.
- Kniffin, K.M., Wansink, B., & Shimizu, M. (2015). Sports at work: Anticipated and persistent correlates of participation in high school athletics. *Journal of Leadership & Organizational Studies*, 22(2), 217-230.
- Marsh, H.W., & Kleitman, S. (2003). School athletic participation: mostly gain with little pain. *Journal of Sport & Exercise Psychology*, 25, 205-228.
- National Federation of State High School Associations (2015). *2014-15 high school athletics participation survey*. Retrieved from http://www.nfhs.org/ParticipationStatics/PDF/2014-15_Participation_Survey_Results.pdf.
- University of Chicago Crime Lab (2012). *BAM – Sports edition* [Research & Policy Brief]. Chicago, IL: University of Chicago Crime Lab.
- Videon, T.M. (2002). Who plays and who benefits: gender, interscholastic athletics, and academic outcomes. *Sociological Perspectives*, 45(4), 415-444.