Research in Higher Education, Vol. 45, No. 6, September 2004 (© 2004)

A COMPARISON OF ATHLETES AND NON-ATHLETES AT HIGHLY SELECTIVE COLLEGES: Academic Performance and Personal Development

Elizabeth Aries*,§ Danielle McCarthy** Peter Salovey† and Mahzarin R. Banaji‡

Student-athletes were studied over 4 years at a highly selective liberal arts college and an Ivy League university. Students spending 10 or more hours per week in athletic activities had lower entering academic credentials and academic self-assessments than non-athletes, but the academic performance of athletes was not below what would be expected based on their entering profiles. Athletes surpassed non-athletes on sociability/extraversion and self-reported well-being in each annual wave of the study. Athletes were not isolated from the rest of the student body; they spent over 50% of their time with non-group members and belonged to non-athletic extracurricular groups every year. Athletes perceived group membership to pose greater difficulties to academic performance and involvements outside the group than did members of other types of extracurricular groups. Athletes drank more heavily on weekends that non-athletes, but did not differ in growth or well-being. Comparisons by athletic status were similar for men and women.

KEY WORDS: college athletes; academic achievement; growth and well-being.

INTRODUCTION

Many investigators and educators have debated the place of athletics at colleges and universities. Some have argued that important skills and qualities are developed through participation in sports that are not acquired through the academic curriculum. They argue that athletic

*Department of Psychology, Amherst College, Amherst, MA.
**Department of Psychology, University of Wisconsin-Madison, Madison, WI.
†Department of Psychology, Yale University, New Haven, CT.
‡Department of Psychology, Harvard University, Cambridge, MA.
§Address correspondence to: Elizabeth Aries, Department of Psychology, Amherst College, Amherst, MA 01002-5000. Phone: 413-542-2793. Fax: 413-542-2145. E-mail: ejaries@amherst.edu

0361-0365/04/0900-0577/0 © 2004 Springer Science+Business Media, Inc.

participation relates positively to growth in interpersonal skills, peer relationships and leadership abilities (Astin, 1993; Ryan, 1989), to students' personal and social well-being (Cantor and Prentice, 1996) and to students' commitment to their academic institutions (Astin, 1993). Athletic programs can provide opportunities for building communal bonds among students, faculty and alumni despite differences in race/ethnicity, social class and geographic background (Wolf-Wendel, Toma, and Morphew, 2001).

On the other hand, according to some researchers, the time demands of athletic programs force student-athletes to sacrifice attention to academics (Meyer, 1990; Parham, 1993), making it difficult for them to devote time to study or earn good grades (Cantor and Prentice, 1996). Greater commitment to the athletic role and less to academics is associated with lower grade point averages in college (Simons, Van Rheenen, and Covington, 1999). Furthermore, recruited athletes are often given an admissions advantage, entering college with less impressive academic records (Hood, Craig, and Ferguson, 1992; Purdy, Eitzen, and Hufnagel, 1985; Shulman and Bowen, 2001; Stuart, 1985). When pre-college differences are controlled for, some researchers find that the academic achievement of intercollegiate athletes and non-athletes does not differ (Hood et al., 1992; Pascarella and Smart, 1991; Stuart, 1985), but other researchers find more negative consequences for college athletes. For example, Shulman and Bowen (2001) found athletes who played all types of sports to under-perform academically, but the underperformance was more pronounced for athletes who played high-profile sports (i.e., football, basketball and hockey). Differences in measures of cognitive skills between males in revenue producing sports (i.e., football and basketball) and non-athletes appear freshman year (Pascarella, Bohr, Nora, and Terenzini, 1995), and have been found to increase over the course of college (Pascarella et al., 1999).

Athletes may be ''underachieving'' outside the academic realm as well. Self-reports of overall ''growth as a person'' during college were negatively related to time with teammates on and off the field in one study (Cantor and Prentice, 1996). When compared to male non-athletes, male athletes in non-revenue producing sports made smaller net gains during the first 3 years of college in openness to diversity and challenge, and in levels of learning for self-understanding (Wolniak, Pierson, and Pascarella, 2001).

Some evidence suggests that athletes form a separate subculture (Parham, 1993; Prentice, 1997; Sedlacek and Adams-Gaston, 1992) that contributes to academic underperformance (Shulman and Bowen, 2001). Male football and basketball players report reading fewer texts or assigned books than male non-athletes (Pascarella et al., 1995). Athletes are more

likely than non-athletes to report that they binge drink (Leichliter, Meilman, Presley, and Cashin, 1998; Nattiv, Puffer, and Green, 1997; Nelson and Wechsler, 2001) and report that over 70% of their friends binge drink (Nelson and Wechsler, 2001). Research suggests that this athletic culture isolates athletes from their peers (Astin, 1977); student-athletes find it difficult to interact with peers outside athletic groups (Blinde and Greendorfer, 1992) thus curtailing opportunities for personal development.

Concerns have also been raised about the difficulties athletes themselves face once on campus. Student athletes at highly selective schools encounter greater academic challenges given their lower academic skill levels, and like members of other minority groups face prejudice and discrimination (Sedlacek and Adams-Gaston, 1992). Both faculty (Engstrom, Sedlacek, and McEwen, 1995) and students (Engstrom and Sedlacek, 1991, 1993) may perceive athletes negatively in academic competence. Negative stereotypes of athletes may help further to separate athletes from the rest of the student body.

Since the passage of Title IX, increased participation by women in athletics has been accompanied by intensified recruitment of women athletes, and the gap in entering Scholastic Aptitude Test scores (SAT) between women athletes and women non-athletes over time has become equivalent to that of men (Shulman and Bowen, 2001). Female athletes show less cognitive underperformance than males athletes (Pascarella et al., 1995, 1999), particularly when female athletes are compared to males who play high profile sports (Shulman and Bowen, 2001), or to males in revenue producing sports (Simons et al., 1999).

The role of athletics at highly selective colleges and universities may be more problematic than at large Division I universities, because while athletes make up only a small percentage of the student body at a large Division I university, athletes comprise a much larger proportion of the student body at smaller schools, at Ivy League universities, and at coeducational Division III liberal arts colleges in particular (Shulman and Bowen, 2001). The current study seeks to broaden our understanding of student-athletes at highly selective institutions through an examination of athletes and non-athletes in two major domains: academic performance and personal development. The study addresses the following research questions:

Academic Performance

1. Do student-athletes differ from non-athletes in their entering academic qualifications?

2. Do student-athletes see group membership posing greater difficulties to academic performance than members of non-athletic extracurricular groups?
3. Do athletes underachieve relative to students who enter college with similar backgrounds and academic credentials?

Personal Development

1. Do student-athletes differ from non-athletes in their entering self-perceived personal characteristics?
2. Do student-athletes differ from non-athletes in their personal development?
3. Do student-athletes form a separate "athletic subculture" that is:
   (a) characterized by values/practices that differ from non-athletes, and that are not in keeping with the mission of the college/university?
   (b) isolated from the rest of the student body?
4. Do student-athletes and non-athletes differ in their growth and well-being?

Because past research reveals differences between male and female athletes, this study also examined whether gender moderates the relationship between athletic status and the dependent variables, i.e., academic performance and personal development.

The current examination of athletes is part of a longitudinal study of the graduating class of 2000 carried out at two highly selective schools: an Ivy League university and a Division III liberal arts college. The study focused on the organizations students joined, and the relationships between group membership and students' academic performance and personal development.

METHOD

Participants

Participants in this study were students at two highly selective Northeastern schools, an Ivy League university and a small liberal arts college. Five waves of data were collected for this study. Data for Wave 1 were collected when students arrived for orientation in the fall of their first year, and data for Waves 2–5 were collected at the end of each academic year. The entering class size was 1395 at the Ivy League university and 422 at the college. At the university, the number of surveys completed included: Wave 1 ($N = 1061$, 76%), Wave 2 ($N = 556$, 41%), Wave 3

($N = 515$, 38%), Wave 4 ($N = 423$, 31%), and Wave 5 ($N = 521$, 38%). At the liberal arts college, the number of surveys completed included: Wave 1 ($N = 377$, 89%), Wave 2 ($N = 337$, 80%), Wave 3 ($N = 273$, 65%), Wave 4 ($N = 267$, 63%) and Wave 5 ($N = 353$, 84%). In the combined data sets for the two campuses at Wave 1, 62.6% of the students identified themselves as white, 19.2% as Asian, 5.3% as African American, 4.7% as Hispanic/Latino, 4.3% as mixed ethnic background, and 3.9% of as some other ethnicity. Students were similarly divided by sex: 49.7% male and 50.3% female. The average age was $M = 17.91$ years ($SD = 1.61$). In regard to religious affiliation, 24.9% identified themselves as agnostic or atheist, 50.3% indicated they were Christian, 18.5% Jewish, and other religious groups made up about 6.3% of the group (including Buddhists, Muslims, and Hindus). The mothers of 80% of the sample, and the fathers of 87.3% of the sample had completed college.

Procedure

Identical questionnaires were distributed to students on both campuses for each wave of data collection, with the exception of three items that were not relevant to this analysis of student-athletes. Participation was voluntary on both campuses.

At the university, at Wave 1, freshman counselors administered questionnaires during the first evening of orientation, and no compensation was offered. At Waves 2 and 3, student assistants were paid to distribute and collect completed surveys in sealed envelopes from their classmates. Compensation was contingent upon at least a 50% return rate. Raffles were instituted as an incentive for participation in Waves 4 and 5. A follow-up of non-respondents was done at each of Waves 2–5 of data collection. In the follow-up of non-respondents at Wave 5, students were sent a free gift (valued at $1) and paid $5 for completion of the survey.

At the college, resident counselors distributed and collected questionnaires in the dormitories for all waves of data collection. Students were entered into raffles for cash prizes upon the return of their questionnaires for Waves 1–4, and were paid $10 for participation in Wave 5. A follow-up of non-respondents was done at each wave of data collection. Entry into the raffle for cash prizes was used as an incentive for participation.

Measures

In the first wave of data collection, questions were framed in terms of students' expectations. In the following four waves of data collection, questions were framed in terms of students' actual experiences.

Demographics

Students were asked to report their gender, ethnicity, age, and religion.

Scholastic Aptitude Test Scores (SAT) and grades

Students were asked whether they were willing to release their grades and standardized test scores (specifically, SAT verbal and SAT math scores). Grades were measured on a 5-point scale (4 = A, 3 = B, 2 = C, 1 = D and 0 = F). 79% of students released their grades and SAT scores.

Self-assessments of Academic Abilities

Students rated their skill levels in writing, analytic ability, foreign languages, science, mathematics, and computers on a 9-point scale (1 = weak, 5 = average, 9 = outstanding). Scores for science, math, and computers skills were averaged to form a measure of quantitative skills (Cronbach's alphas in each year ranged from .64 to .74).

The following questionnaire measures were based upon the Sophomore Student Life Survey developed by Cantor and Prentice (1996):

Self-Perceived Characteristics

Students rated themselves on the extent to which each of 20 traits or characteristics described them on a 9-point scale (1 = does not describe me at all, 9 = describes me very well). Based on a principal components analysis, 17 of these characteristics loaded onto five factors. The five factors retained were not strongly inter-correlated (*r*'s ranged from .10 to .32). Scales based on four of these factors with unit item weightings were included in this study. The fifth factor, athleticism, was not included because athletes rated themselves higher on this factor, and its inclusion in any multivariate analyses would have skewed the results. The four factors used in this study included drive (i.e., "grade-conscious," "academically focused," "concerned about the future," "ambitious," and "manages time well"), talent (i.e., "smart," "intellectual," "artistic/creative"), sociability/extraversion (i.e., "socially skilled," "outgoing," "confident," "good leader"), and openness (i.e., "appreciative of diversity," "open-minded," "cooperative"). In addition, the item "drinks heavily on weekends," which did not load on any factor, was retained as a single-item variable. Across the five waves of data collection, alphas ranged from .73 to .78 for drive, alphas ranged from .61 to .65 for talent, alphas ranged

from .81 to .84 for sociability/extraversion, and alphas ranged from .71 to .75 for openness, all indicating adequate internal consistency.

Growth and Adjustment

Beginning at Wave 2, students were asked to indicate on a 5- point scale (1 = not at all, 2 = a little, 3 = somewhat, 4 = quite a bit, 5 = a lot) whether up to this point in their college career they had grown as a person, gotten to know people from different backgrounds, found a place at the college, and pursued new activities and interests.

Political Beliefs

Beginning in Wave 3, students were asked to rate their political beliefs on a 7-point scale (1 = extremely liberal to 7 = extremely conservative). Higher scores reflect more conservative beliefs.

Overall Well-being

Scores on four measures, psychological well-being, social life, self-esteem, and perceived control were averaged to form an overall measure of well-being (alphas ranged from .75 to .80 across waves).

Psychological Well Being and Social Life

Single items were used by students to rate their "current" psychological well-being, and their social lives "during the last month or so" on a 5-point scale (1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent).

Self-esteem

Students rated their self-esteem on 6-items from the 8-item Rosenberg (1965) self-esteem scale (alphas ranged from .85 to .87 across waves). Items were worded such that the ratings were made regarding the self in relation to the average student at their college in order to avoid possible ceiling effects. The items were rated on a 5-point scale (1 = completely disagree, 5 = completely agree).

Perceived Control

Students rated 4-items on a 5-point scale (1 = never, 2 = almost never, 3 = sometimes, 4 = fairly often, 5 = very often) indicating the extent to

which in the last month they felt "you were coping effectively with important changes in your life," "confident about your ability to handle your personal problems," "you were unable to control the important things in your life," and "difficulties were piling up so high that you could not overcome them." The latter two items were reverse scored, and these four items were averaged to create a measure of perceived control (alphas ranged from .76 to .80 across waves).

Group Memberships

Students were asked to indicate the types of extracurricular groups they had joined from a list of 14 types of groups. Students indicated how many hours per week they spent in each group (at meetings, practices, events). The only type of extracurricular group to which students committed on average more than 10 h a week was athletic teams. Based on the number of hours students spent on athletics, members of athletic teams were identified as high-commitment athletes if they spent more than 10 h a week on athletics (i.e., varsity teams, club sports). Ten hours a week was chosen as the cutoff point because it is the equivalent to the major time commitment demanded of students for work-study jobs, and thus demands a substantial portion of students' time. Members of athletic teams made up a sizeable proportion of the samples at both schools but particularly at the college. Each year high-commitment athletes made up close to 50% of the class at the college, and 25% at the university. Students who were not members of athletic teams each year were identified as non-athletes. The percentage of non-athletes at Waves 2 through 5 was close to 30% at the college, and a third at the university every year. Students who were members of athletic teams but committed less than 10 h a week to athletics (e.g., members of intramural teams and some club sports) were not included in the group of non-athletes, and were not included in the analyses.

Consequences of Group Membership

Students were asked to list the two groups they joined that they considered most important to them. Students rated 8-items on a 9-point scale (1 = much easier, 5 = neither easier nor more difficult, 9 = much more difficult) regarding whether being a member of each group made it "easier or more difficult" to: be taken seriously by professors, earn good grades, make friends outside of this group, make contacts for the future, join other extracurricular groups, find social support when things are going badly, attend cultural events, and find time to study. A principal

components analysis did not yield an interpretable solution, and the individual items were not highly inter-correlated. For these reasons, each item regarding consequences of group membership was considered separately.

Time With Group Members

Based on the two extracurricular groups that students identified as most important to them, students were asked five questions about how much time they spent with members of each group. They were asked first to indicate: "outside of meetings/practice/events, how many hours in a typical week do you spend with members of this group." They were then asked to report the percent of time they spent with group members "when attending large parties on campus," "when eating with other people at the dining hall," "when hanging out with others," and the percentage of their close friends who were group members. This cluster of four variables was highly correlated and was averaged into a single measure of percentage of time/friendships with group members (alphas ranged from .91 to .93).

Time Studying and Attending Cultural Events

Students were asked to indicate on the following 8-point scale (0 = none, 1 = less than 1, 2 = 1–2, 3 = 3–5, 4 = 6–10, 5 = 11–15, 6 = 16–20, 7 = more than 20) the number of hours "in a typical week (including the weekends)" that they spent studying/working on course assignments, and attending cultural events.

RESULTS

Data Analysis

Although a repeated measures analysis that included wave would have been ideal, wave could not be used as a within-subjects variable because the sample of students who completed questionnaires varied considerably from year to year. For example, less than half of the high-commitment athletes from Wave 2 filled out questionnaires every year. An analysis including only those participants with complete data would have been based on a greatly reduced and potentially biased sample of athletes. Nor could wave be treated as a between-subjects variable because of the non-independence of a considerable number of participants from year to year. Thus, the data were treated cross-sectionally and were analyzed separately for each wave. Analyses focused on the contrast between high-commitment

athletes and non-athletes at each wave. Only 3 of 26 variables showed significant differences between schools for high-commitment athletes across the 4 years of college. At the university, athletes found it significantly more difficult to find time to study and to earn good grades, and significantly easier to get to know people from different backgrounds. Given the paucity of campus differences, these analyses report data combined across the two schools.

Outcomes for both athletes and non-athletes in academic performance and personal development showed remarkable stability across the 4 years of college. In order to simplify the presentation, only the findings for the end of the first (Wave 2) and last (Wave 5) year of college are reported. Similarly, our interest in gender was specifically in the interaction of gender and athletic status, i.e., on the ways in which gender moderated the relationship between athletic status and the dependent variables. Because no gender by athletic status interactions were found to be significant across waves, the results for gender are not reported here. Results for all waves of the data and by gender are available from the first author.

Academic Achievement

Question 1. Do Student-Athletes Differ From Non-Athletes in their Entering Academic Qualifications?

Two-by-two multivariate analyses of variance (MANOVAs) were calculated with gender (male/female) and athletic status (high-commitment athlete/non-athlete) as between-subjects variables for two sets of dependent variables: SAT scores at Wave 1 (SAT verbal, SAT math) and self-assessment of four skill levels at Wave 1 (writing, analytic, foreign language, quantitative skills). Means and standard deviations for these variables are presented in Table 1.

SAT Scores

The multivariate analysis for SAT scores revealed a significant effect for athletic status: (Pillai's Trace = .125, F (2, 438) = 31.42, $p < .001$). Discriminant analysis was conducted to identify the linear combination of SAT math and verbal scores that best discriminated high-commitment athletes from non-athletes. The contribution of each variable to the discriminant function is reflected by its correlation with the canonical variate formed by combining the weighted dependent variables. Correlations above .30 are considered substantive and meaningful (Hair, Anderson, Tatham, and Black, 1998). Both SAT math and verbal scores correlated

TABLE 1. Means and Standard Deviations for Differences Between High-Commitment Athletes and Non-Athletes on Academic and Personal Development Dependent Variables by Wave

	High-commitment Athletes			Non-athletes			High-commitment Athletes			Non-athletes		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
	Freshman year (Wave 1)											
SAT verbal	207	691.5	69.06	236	736.0	55.05						
SAT math		702.5	61.91		724.3	57.74						
Analytic skills	221	6.72	1.54	279	6.86	1.57						
Writing skills		6.36	1.67		6.79	1.62						
Foreign language skills		5.70	2.13		6.23	2.04						
Quantitative skills		5.74	1.34		5.77	1.32						
	Freshman year (Wave 2)						Senior year (Wave 5)					
Be taken seriously by profs	237	5.61	1.24	445	4.81	1.09	224	5.92	1.39	480	4.64	1.32
Find time to study		6.76	1.37		5.91	1.27		6.45	1.24		5.89	1.24
Earn good grades		6.11	1.30		5.14	1.01		5.87	1.38		5.24	1.22
Talent	267	6.29	1.31	343	6.70	1.34	267	6.43	1.26	242	7.00	1.28
Openness		7.10	1.28		7.27	1.28		7.26	1.30		7.27	1.11
Sociability/extraversion		6.81	1.34		6.29	1.57		7.15	1.16		6.61	1.38
Political beliefs							239	3.26	1.36	213	2.90	1.27
Attend cultural events	237	5.91	1.39	445	4.05	1.64	224	5.70	1.35	480	4.03	1.83
Make friends outside group		5.04	1.43		4.89	1.13		5.16	1.41		4.91	1.31
Join other groups		6.58	1.82		5.17	1.45		6.33	1.59		5.45	1.51
Find support when things are going badly		3.39	1.74		3.68	1.68		3.35	1.77		3.53	1.71
Make contacts for the future		3.94	1.38		4.07	1.36		3.90	1.31		4.11	1.49
Drive	259	6.42	1.29	339	6.40	1.40	262	6.53	1.25	238	6.45	1.33

TABLE 1. (*Continued*)

	High-commitment Athletes			Non-athletes			High-commitment Athletes			Non-athletes		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Time studying		5.21	1.29		5.48	1.30		4.72	1.54		5.00	1.39
Time attending cultural events		1.29	1.11		1.71	1.11		1.24	0.98		1.65	1.18
Drinks heavily on weekends		4.02	2.69		2.53	2.22		4.78	2.68		3.22	2.48
Hours outside meeting/practice/ events with group members	234	8.21	7.80	439	3.85	6.94	219	8.60	12.87	469	5.46	7.61
Percent time/friendships with group members		43.90	29.26		22.26	25.36		40.14	26.01		27.39	25.34
Found a place at the college/university	267	3.69	1.04	342	3.46	1.16	123	4.23	0.87	156	3.79	1.12
Got to know people of different backgrounds		3.73	0.98		3.75	1.04		4.48	0.64		4.14	0.90
Grown as a person		3.82	0.92		3.79	0.91		4.55	0.59		4.52	0.71
Pursued new activities and interests		3.16	1.11		3.10	1.06		3.63	1.03		3.62	1.13
Overall well being	267	3.70	0.75	344	3.49	0.75	265	3.92	0.71	240	3.76	0.72

highly with the canonical variate (.58 and .98, respectively), but the variate reflected primarily verbal performance on the SAT. The high commitment athletes scored 12.48 on the discriminant function, whereas non-athletes scored 13.16, indicating that the athletes entered college with lower SAT scores, particularly verbal scores.

Skill Levels

The multivariate effect for athletic status was significant for perceived entering skill levels: (Pillai's Trace = .029, F (4, 493) = 3.69, $p < .01$). A canonical variate reflecting general lack of skill, especially in the area of writing, was constructed based on discriminant analysis. The writing item correlated very highly and negatively with the variate (−.83), followed by foreign language ability (−.60), analytical ability (−.50), and quantitative skill (−.42). High commitment athletes scored −5.81 on the discriminant function whereas non-athletes scored −6.19, indicating that high commitment athletes rated themselves lower on academic skills than non-athletes.

Question 2. Do Student-Athletes See Group Membership Posing Greater Difficulties to Academic Performance than Members of Non-Athletic Extracurricular Groups?

Three variables were used to assess academic difficulties associated with group membership: self-assessments of whether group membership made it easier or more difficult to be taken seriously by professors, to find time to study, and to earn good grades. Two-by-two MANOVAs were run with gender and athletic status (high-commitment athlete/member of non-athletic group) as the between-subjects variables with the set of three variables measuring the consequences of group membership as the dependent variables for Waves 2 and 5. Means and standard deviations for these variables are presented in Table 1. The multivariate effect for athletic status was significant for academic difficulties posed by group membership freshman year (Pillai's Trace = .201, F (3, 678) = 56.77, $p < .001$), and senior year (Pillai's Trace = .184, F (3, 698) = 52.41, $p < .001$). Discriminant function analysis generated a canonical variate that correlated moderately with all three of the academic consequences of group membership. Correlations between dependent variables and canonical variates significantly discriminating high commitment athletes from non-athletes can be found in Table 2. At both waves, the variate correlated most highly with be taken seriously by professors, followed by earn good grades, and at a lower, but substantial level with find time to study. Athletes scored lower (indicating greater academic difficulty due to

TABLE 2. Correlations Between Dependent Variables and Canonical Variates Significantly Discriminating High-Commitment Athletes from Non-athletes

Variate	Dependent variable	Wave 2	Wave 5
Academic consequences of group membership	Be taken seriously by professors	−.67	−.92
	Earn good grades	−.80	−.50
	Find time to study	−.61	−.45
Personal Characteristics	Talent	−.57	−.62
	Openness	−.24	−.03
	Sociability/extraversion	.53	.58
Personal developmental consequences of group membership	Make friends outside the group	.09	.16
	Join other extracurricular groups	−.06	−.12
	Attend cultural events	.64	.53
	Find social support when things are going badly	−.13	−.10
	Make contacts for the future	.35	.89
Values/practices in keeping with academic values	Drive	.07	.18
	Time spent studying	−.27	−.23
	Time spent attending cultural events	−.55	−.55
	Drinks heavily on Saturday nights	.83	.83
Group involvement	Hours outside of meetings/practice/ events	.73	.63
	Percentage of time/friendships with group members	.98	.98

group membership, particularly earning good grades and being taken seriously by professors), each year (freshman year athletes = −7.38, non-athletes = −6.32; senior year athletes = −5.99, non-athletes = −5.21).

Regarding question 2, high-commitment athletes reported more academic difficulty each year associated with group membership than did non-athletes, particularly with regard to earning good grades and gaining respect from professors.

Question 3. Do Athletes Underachieve Relative to Students who Enter College with Similar Backgrounds and Academic Credentials?

Hierarchical multiple regression analyses were run separately for each school (due to differences in grade distributions and entering SAT scores)

TABLE 3. Effects of Gender, Race, SAT Scores, Parents' Education and Greater than 10 h per Week Participation in Extracurricular Groups on Final Grade Point Average[a]

	Step1				Step2				Step3			
	College		University		College		University		College		University	
	β	t	β	t	β	t	β	t	β	t	β	t
Female	.16	2.70**	.09	1.70	.16	2.79**	.18	3.35**	.14	2.45*	.17	3.15**
African-American	−.28	4.67***	−.24	4.28***	−.14	2.22*	−.19	3.59***	−.13	2.18*	−.20	3.71***
Asian	.00	0.07	.04	0.64	−.03	0.46	−.05	0.99	−.03	0.51	−.07	1.35
Hispanic	−.12	1.89	−.08	1.44	−.07	1.19	.04	0.75	−.07	1.14	.02	0.31
Mixed race	−.08	1.37	.03	0.59	−.05	0.87	.05	0.99	−.05	0.92	.03	0.64
No BA[b]	−.08	1.37	−.15	2.61**	−.04	0.67	−.09	1.56	−.04	0.63	−.09	1.61
One BA[b]	−.09	1.52	−.20	3.47**	−.02	0.39	−.12	2.18*	−.02	0.35	−.11	2.01*
SAT verbal					.27	4.43***	.16	2.82**	.25	3.96***	.13	2.23*
SAT math					.20	3.03**	.34	5.55***	.20	3.04**	.34	5.45***
Athlete[c]									−.06	0.86	−.10	1.66
Active[d]									.07	1.04	−.03	0.59
Adjusted R^2	.11		.13		.23		.26		.23		.27	

*$p < .05$, **$p < .01$,***$p < .001$.

[a]The base group for all regressions was a white male with two parents having completed a B.A.

[b]One B.A. signifies that only one parent has completed at B.A. No B.A. signifies that neither parent has completed a B.A.

[c]Athlete signifies student who devoted more than 10 h a week to an athletic team freshman year.

[d]Active signifies student who devoted more than 10 h a week to a non-athletic extra-curricular group freshman year.

to predict final grades, as indicated in Table 3. At step 1, demographic variables were entered into the regression models, specifically dummy variables for gender, race (African-American, Asian, Hispanic, mixed race), and parents' education (neither or one parent completed a B.A., both parents completed a B.A.) Together, these variables accounted for 11% of the variance in final grade point average at the college, and 13% at the university. Being female contributed significantly and positively to final grades, and being African-American contributed significantly and negatively to final grades at both schools.

At step 2, math and verbal SAT scores were added to the regression models, significantly increasing the percentages of variance explained to 23% at the college ($F(2, 259) = 21.09$, $p < .001$), and 26% at the university ($F(2, 288) = 25.56$, $p < .001$). Both verbal and math SAT scores were significant predictors of final grades, reducing the beta for African-American ethnicity (because African-Americans entered college with lower SAT scores). The contributions of gender and race remained significant.

Finally, in Model 3, participation of more than 10 h per week in a non-athletic extracurricular group, and participation of more than 10 h per week on an athletic team were added to the regression models. These variables did not significantly improve the prediction of final grades: at the college ($F(2, 259) = 0.63$, ns), and at the university ($F(2, 286) = 2.45$, ns). Though there was evidence for academic underperformance for high-commitment athletes relative to other students who entered college with similar SAT scores and demographic backgrounds, the effect was not statistically significant (for high-commitment athletes $\beta = -.06$ at the college and $\beta = -.10$ at the university). Students who devoted over 10 h per week to non-athletic group activities performed similarly academically relative to other students who entered college with similar SAT scores and demographic backgrounds. In the final models, the variables that contributed significantly and positively to final grades at both the college and the university were being female, not being African-American, SAT verbal, and SAT math scores.

Personal Development

Question 1. Do Student-Athletes Differ from Non-Athletes in their Personal Characteristics?

Two-by-two multivariate analyses of variance (MANOVAs) were calculated with gender (male/female) and athletic status (high-commitment athlete/non-athlete) as between-subjects variables for self-description

of three personal characteristics (talent, openness, sociability/extraversion) at Waves 2 and 5. In addition, 2 × 2 univariate analyses of variance were calculated with gender and athletic status as between-subjects variables for political beliefs at Wave 5. Means and standard deviations for these variables are presented in Table 1.

Personal Characteristics

The multivariate effect for athletic status was significant for self-assessments of personal characteristics every year: freshman year (Pillai's Trace = .086, F (3, 603) = 19.00, $p < .001$); and senior year (Pillai's Trace = .124, F (3, 503) = 23.73, $p < .001$). In both waves, the canonical variate correlated moderately strongly and positively with sociability/extraversion and negatively with talent (see Table 2). Openness was not strongly related with the variate either year. Freshman year, high-commitment athletes scored higher on the variate than non-athletes, reflecting greater sociability but lower talent (freshman year athletes = −0.92, non-athletes = −1.46). Senior year, the ordering was reversed (athletes = −0.31, non-athletes = 0.24), with non-athletes scoring higher on the discriminant function than athletes.

Political Beliefs

High-commitment athletes reported being significantly more politically conservative than non-athletes in senior year (F (1, 448) = 6.30, $p < .05$, $\eta^2 = .014$). Males were significantly more politically conservative than females (F (1, 448) = 21.46, $p < .001$, $\eta^2 = .046$).

Question 2. Do Student-Athletes Differ from Non-Athletes in their Personal Development?

Five measures were used to assess the challenges posed by group membership to social growth and personal development: self-assessments of whether group membership made it easier or more difficult to make friends outside the group, to join other extracurricular groups, to attend cultural events, to find social support when things are going badly, and to make contacts for the future.

Two-by-two MANOVAs were run with gender and athletic status (high-commitment athlete/member of non-athletic group) as the between-subjects variables with the set of five variables measuring the consequences of group membership as the dependent variables for Waves 2 and 5.

Means and standard deviations for these variables are presented in Table 1.

The multivariate effect for athletic status was significant: freshman year (Pillai's Trace = .295, F (5, 675) = 56.37, $p < .001$), and senior year (Pillai's Trace = .202, F (5, 697) = 35.35, $p < .001$). The discriminant function reflects primarily increased difficulty attending cultural events and making contacts for the future across waves. The canonical variate was not related to making friends outside the group, joining other extracurricular groups, or finding support when things are going badly (see Table 2). Athletes indicated greater personal difficulties associated with group membership than non-athletes every year (freshman athletes = 2.41, non-athletes = 2.02; senior athletes = 1.96, non-athletes = 1.83).

Question 3a. Do Student-Athletes form a Separate "Athletic Subculture" that is Characterized by Values/Practices that Differ from Non-Athletes, and that are not in Keeping with the Mission of the College/University?

Three variables were taken to be indicators of values/practices in keeping with the mission of colleges and universities, i.e., self-description of drive, time studying, and time attending cultural events. One variable was taken to be an indicator of values/practices at odds with the mission of the college/university: self-description on drinks heavily on the weekends. Two-by-two MANOVAs were calculated for data from Waves 2 and 5 with gender and athletic status (high-commitment athlete vs. non-athlete) as the between-subjects variables on this set of four dependent variables. Means and standard deviations are presented in Table 1.

The multivariate effect for athletic status was significant freshman year (Pillai's Trace = .096, F (4, 591) = 15.78, $p < .001$) and senior year (Pillai's Trace = .106, F (4, 493) = 14.63, $p < .001$). Group centroids on the discriminant function indicated that each year, high-commitment athletes reported heavier drinking and less time at cultural events (see Table 2) than did non-athletes (freshman year athletes = 1.16, non-athletes = 0.38; and senior year athletes = 2.15, non-athletes = 1.43). The canonical variate was not related to drive or time spent studying (see Table 2).

Question 3b. Do Student-Athletes form a Separate "Athletic Subculture" that is Isolated from the Rest of the Student Body?

Two types of measures addressed this hypothesis. First, two variables were used as measures of the extent to which athletes were isolated from

the rest of the student body: hours outside of meetings/practice/events with group members each week, and percentage of time/friendships with group members. Two-by-two MANOVAs were calculated for data from Waves 2 and 5, with gender and athletic status (high-commitment athlete/member of non-athletic extracurricular group) as the between-subjects variables and hours outside of meetings/practice/events with group members, and percentage of time/friendships with group members as dependent variables reflecting group involvement. Means and standard deviations are presented in Table 1. The second assessment of isolation from the student body was the percent of high-commitment athletes who participated in non-athletic extracurricular groups in Waves 2 and 5.

The multivariate effect for athletic status was significant for measures of group involvement both freshman year (Pillai's Trace = .135, $F(2, 668) = 52.33$, $p < .001$) and senior year (Pillai's Trace = .050, $F(2, 683) = 17.82$, $p < .001$). The canonical variate correlated very highly with the percentage of time and friendships with group members and highly with hours outside of meetings and practices with group members (see Table 2). Athletes scored higher on the discriminant function than non-athletes (freshman athletes = 1.65, non-athletes = 0.82; senior athletes = 1.57, non-athletes = 1.07), indicating that high-commitment athletes reported spending more time with group members than non-athletes.

The vast majority of high-commitment athletes belonged to non-athletic extracurricular groups. Freshman year, 75% of high-commitment athletes joined other extracurricular groups. The percentages increased in the following years with 91% of high-commitment athletes showing involvement in non-athletic groups senior year.

Question 4. Do student-athletes and non-athletes differ in their growth and well-being?

Three types of analyses were conducted to address Question 4. First, regression models were calculated for high-commitment athletes at Waves 2 and 5 with growth as a person as the dependent variable, and gender, hours in meetings/practice/events, hours outside meetings/practice/events with group members, percentage of time/friendships with group members, and the interaction of each of the latter three variables with gender as the independent variables. Together these variables accounted for less than 4% of the variance in growth as a person (freshman year adjusted $R^2 = .034$, and senior year adjusted $R^2 = .015$).

Second, 2×2 MANOVAs were calculated with gender and athletic status (high-commitment athlete/non-athlete) as the between-subjects variables, and five variables measuring growth and well-being as the

dependent variables: grown as a person, found a place at the college/university, pursued new activities and interests, gotten to know people from different backgrounds, and overall well-being. Means and standard deviations are reported in Table 1.

The 2 × 2 between groups MANOVAs revealed that the multivariate effect for athletic status was significant senior year only: freshman year (Pillai's Trace = .009, F (4, 602) = 1.36, ns); and senior year (Pillai's Trace = .090, F (4, 272) = 6.71, $p < .001$). Because these effects were not consistent over time, they are not interpreted.

Two-by-two univariate analyses of variance were calculated with gender and athletic status (high-commitment athlete/non-athlete) as the between-subjects variables and overall well-being as the dependent variable. Means and standard deviations are reported in Table 1. High-commitment athletes gave themselves significantly higher ratings on overall well-being: freshman year (F (1, 607) = 8.86, $p < .01$, $\eta^2 = .014$), and senior year (F (1, 501) = 6.30, $p < .05$, $\eta^2 = .012$).

DISCUSSION

Close to half the students at the Division III college, and 25% at the Ivy League university in this study were high-commitment athletes, devoting over 10 h a week to participation on athletic teams. Thus, athletes clearly had a major presence on these campuses. The question, then, is whether high commitment athletes differed from non-athletes in their academic performance and personal development, and whether high-commitment athletes influenced the student body and campus ethos of these schools. In regard to academic achievement, there were differences between the high-commitment athletes and non-athletes in this study in their entering academic profiles. High commitment athletes had lower verbal SAT scores, to a lesser degree lower math SAT scores, and lower self-assessments of their academic skills, in particular, their writing and foreign language skills. Athletes, then, given their proportions in the overall student body, had an impact on the overall academic profile of the student body at these schools.

When compared to members of non-athletic extracurricular groups, high-commitment athletes experienced group membership as posing more obstacles to academic performance, specifically to being taken seriously by professors and to earning good grades. It cannot be determined from these data whether professors on these campuses actually held more negative attitudes about the academic potential of athletes, but professors have been found to hold negative attitudes about athletes' academic competence at other universities (Engstrom et al., 1995). Perceived discrimination

by professors has the potential to contribute to performance anxiety and lowered performance by athletes (e.g., Steele and Aronson, 1998).

Although high-commitment athletes on these campuses entered college at an academic disadvantage and with less confidence in their skill levels, and although they reported more challenges to academic performance, these student athletes showed no significant academic underperformance compared to other students who entered college with similar demographic profiles and SAT scores. Other researchers have also found no differences between the academic achievement of intercollegiate athletes and non-athletes when pre-college differences were considered (Hood et al., 1992; Pascarella and Smart, 1991; Stuart, 1985), or between the academic performance of athletes in non-revenue producing sports (who made up the majority of athletes in this study) and non-athletes (Pascarella et al., 1995, 1999).

High-commitment athletes were distinguished from non-athletes by their lower perception of themselves throughout college as smart, intellectual, and artistic/creative, and higher perception of themselves as socially skilled, outgoing, confident and good leaders. In addition, high-commitment athletes rated themselves as more politically conservative, a finding also reported by Shulman and Bowen (2001), though the effect size was small. Therefore, high-commitment student athletes differ from other students in terms of their self-perceptions as well as their academic profiles.

High-commitment athletes were distinguished from members of non-athletic extracurricular groups at the beginning and end of college by the greater personal difficulties they associated with group membership, particularly in attending cultural events and making contacts for the future. However, the time high-commitment athletes spent together on and off the field showed no negative relationship to personal growth. High-commitment athletes were as likely as non-athletes to report every year that they had grown as a person, pursued new activities and interests, gotten to know people from different backgrounds, and found a place at the college/university. They also had slightly higher levels of overall well-being. These findings are similar to those reported by Richards and Aries (1999), but contrast with those of other investigators (Cantor and Prentice, 1996; Parham, 1993; Stone and Strange, 1989).

Some educators have argued that athletes create a unique culture characterized by values/practices that are not in keeping with the mission of the college/university and isolation from the rest of the student body (Parham, 1993; Shulman and Bowen, 2001). Such a culture is potentially harmful to athletes because it may diminish opportunities for personal development through interactions with non-athletes and participation in

other types of extracurricular groups, and may promote detrimental behaviors. The behaviors that discriminated high-commitment athletes from non-athletes and supported the notion of an "athletic subculture" were drinking heavily on weekends, and to some extent spending less time attending cultural events. These data suggest that a culture of heavy drinking exists that may pose serious health risks for high-commitment athletes. There was no evidence, however, that athletes devoted less time to studying, that they were any less ambitious, grade conscious, or concerned about the future than non-athletes.

High-commitment athletes were not found to be isolated from the rest of the student body. High-commitment athletes differed from members of other non-athletic extracurricular groups in the amount of time they spent with group members both inside and outside of meetings/practice/events. Slightly under half of the time and friendships of high-commitment athletes were with team members, but for members of other groups the percentage of time and friendships with group members ranged from 20 to 30% each year. It is important to note, however, that every year, high-commitment athletes spent the majority of their time with students who were not team members. In addition, the vast majority of high-commitment athletes belonged to non-athletic extracurricular groups every year. High-commitment athletes were less likely to join additional extracurricular groups in their first year relative to non-athletes, which may be due to concerns about adjusting to college, or the need to learn how to cope with academic and athletic demands before taking on other commitments. But in subsequent years, approximately 90% of the high-commitment athletes were members of non-athletic extracurricular groups. Thus high-commitment athletes were involved with non-athletes both socially and in extracurricular activities, and could not be described as an insular group.

It is important to note that while only the data from the end of freshman and senior year are reported here, the outcomes for athletes and non-athletes in academic performance and personal development were supported by the data from the end of sophomore and junior years as well. In addition, our interest in gender was specifically on the ways in which gender moderated the relationship between athletic status and the dependent variables. Differences between athletes and non-athletes were found to be similar for men and women. Shulman and Bowen (2001) found that gender differences for athletes have decreased over time. The results of this study provide further evidence in support of their findings.

The analyses reported data combined across the Division III college and Ivy League university because few significant differences between schools emerged for high-commitment athletes across the 4 years of college. Given that close to half the students at the Division III college, compared to 25%

at the Ivy League university were high commitment athletes, the lack of substantive differences between the schools suggests that the proportion of athletes at a school may not have a strong relationship to the actual outcomes of participating in athletics. However, given the differences that were found between the academic and personal characteristics of athletes and non-athletes, the proportion of athletes at a school has an effect of the overall composition of the study body and student culture of a school.

The findings of this study have important implications for faculty and administrators at highly selective colleges and universities. A recent report on student-athletes has concluded that athletes are underperforming academically, and that they form an athletic subculture that contributes to their failure "to take full advantage of the educational opportunities that these colleges and universities are there to provide" (Shulman and Bowen, 2001, p. 270). The data in this study suggest these conclusions do not generalize to the full range of athletes considered in this study, and may be more specific to recruited athletes, or portions of those athletes. Thus faculty and administrators need to re-examine negative stereotypes about student-athletes in general. In addition, highly selective schools that choose to admit athletes with lower academic credentials, and whose athletic programs make great time demands on these students, need to provide the support and assistance these students need once on campus. Although, relative to non-athletes with similar qualifications, athletes graduate with comparable grades, they may struggle more to find time to study and achieve.

One limitation to this study is that most of the data collected were self-reported by students. No social desirability scales were included to control for response biases, and it is impossible to tell whether these estimates reveal objective reality, or whether they are biased assessments. Another regrettable limitation to this study is that although the data were derived from a 4 year longitudinal study over the course of college, a different, albeit overlapping, sample of students completed questionnaires every year, and only a portion of students completed all five waves of the survey. As a consequence, the data were treated as cross sectional, rather than longitudinal. In addition, a considerable number of participants dropped out of the study, particularly at the Ivy League university, introducing the possibility of a biased sample of highly committed athletes. However, the consistency between the findings from year to year is quite remarkable and suggests that there are no obvious sampling biases in the sample from year to year, and great stability over the course of college. Finally, while the discriminant analysis demonstrated that high commitment athletes and non-athletes were distinguished by their entering self-perceptions and academic profiles, their experience of more personal

and academic difficulties associated with group membership, and their heavier drinking, it is important to note that the effect sizes were not large.

Unfortunately, data were not recorded by team membership for the high-commitment athletes in this study. The differences observed between athletes and non-athletes may be most evident for members of high-profile sports, and not for high-commitment athletes more generally (Pascarella et al., 1995, 1999; Shulman and Bowen, 2001). Scores for hours outside meetings/practice/events with team members, and percent of time/friendships with group members, for example, showed high variability that may be accounted for by team membership. Members of some sports teams may be more likely to form insular groups, to study less, be less academically focused and to drink more heavily than members of other sports teams.

The results of this study are based on schools with extremely high admissions standards, as indicated by average entering SAT scores over 1450. The students at these schools are predominantly white, and from well-educated families in which most parents have completed college. Caution must be exercised in generalizing these results beyond highly selective schools such as these. The entering credentials of athletes at these schools, while below those of other entering students, still place them in the top 6% nationally.

ACKNOWLEDGMENT

This research was supported by a grant from the Andrew W. Mellon Foundation. We thank William Cunningham for his statistical advice, and the many students involved in the data collection.

REFERENCES

Astin, A. W. (1977). *Four Critical Years: Effects of College on Beliefs, Attitudes, and Knowledge*. San Francisco: Jossey-Bass.

Astin, A. W. (1993). *What Matters in College? Four Critical Years Revisited*. San Francisco: Jossey-Bass.

Blinde, E. M., and Greendorfer, S. L. (1992). Conflict and the college sport experience of women athletes. *Women's Sports and Physical Activity Journal*, 1: 97–113.

Cantor, N. E., and Prentice, D. A. (1996). *The Life of the Modern-Day Student-Athlete: Opportunities Won and Lost*. Paper presented at the Princeton Conference on Higher Education, Princeton University, Princeton, NJ.

Engstrom, C. M., and Sedlacek, W. E. (1991). A study of prejudice toward university student-athletes. *Journal of Counseling and Development* 70 (1): 189–193.

Engstrom, C. M., and Sedlacek, W. E. (1993). Attitudes of residence hall students toward student-athletes: Implications for advising, training, and programming. *Journal of College and University Student Housing* 23 (1): 28–33.

Engstrom, C. M., Sedlacek, W. E., and McEwen, M. K. (1995). Faculty attitudes toward male revenue and nonrevenue student-athletes. *Journal of College Student Development* 36(3): 217–227.

Hair, J. F., Anderson, R. E., Tatham, R. L., and Black, W. C. (1998). *Multivariate Data Analysis* (5th edn.). Upper Saddle River, NJ: Prentice Hall.

Hood, A. B., Craig, A. F., and Ferguson, B. W. (1992). The impact of athletics, part-time employment, and other activities on academic achievement. *Journal of College Student Development* 33(5): 447–453.

Leichliter, J. S., Meilman, P. W., Presley, C. A., and Cashin, J. R. (1998). Alcohol use and related consequences among students with varying levels of involvement in college athletics. *Journal of American College Health* 46(6): 257–262.

Meyer, B. B. (1990). From idealism to actualization: The academic performance of female collegiate athletes. *Sociology of Sport Journal* 7(1): 44–57.

Nattiv, A., Puffer, J. C., and Green, G. A. (1997). Lifestyles and health risks of collegiate athletes: A multi-center study. *Clinical Journal of Sport Medicine* 7(4): 262–272.

Nelson, T. F., and Wechsler, H. (2001). Alcohol and college athletes. *Medicine and Science in Sports and Exercise* 33(1): 43–47.

Parham, W. D. (1993). The intercollegiate athlete: a 1990s profile. *The Counseling Psychologist* 21(3): 411–429.

Pascarella, E. T., and Smart, J. C. (1991). Impact of intercollegiate athletic participation for African-American and Caucasian men: Some further evidence. *Journal of College Student Development* 32(2): 123–130.

Pascarella, E. T., Bohr, L., Nora, A., and Terenzini, P. T. (1995). Intercollegiate athletic participation and freshman-year cognitive outcomes. *Journal of Higher Education* 66(4): 369–387.

Pascarella, E. T., Truckenmiller, R., Nora, A., Terenzini, P. T., Edison, M., and Hagedorn, L. S. (1999). Cognitive impacts of intercollegiate athletic participation. *The Journal of Higher Education* 70(1): 1–26.

Prentice, D. A. (1997). *The Student-Athlete*. Paper presented at the 250th Anniversary Symposium on the Student-Athlete, Princeton, NJ.

Purdy, D. A., Eitzen, D. S., and Hufnagel, R. (1985). Are athletes also students? The educational attainment of college athletes. In D. Chu, J. O. Segrave, and B. J. Becker (eds.), *Sport and Higher Education,* pp. 221–234. Champaign, IL: Human Kinetics.

Richards, S., and Aries, E. (1999). The division III athlete: Academic performance, campus involvement, and growth. *Journal of College Student Development* 40(3): 211–218.

Rosenberg, M. (1965). *Society and the Adolescent Self-image*. Princeton, NJ: Princeton University Press.

Ryan, F. J. (1989). Participation in intercollegiate athletics: Affective outcomes. *Journal of College Student Development* 30(2): 122–128.

Sedlacek, W. E., and Adams-Gaston, J. (1992). Predicting the academic success of student-athletes using SAT and noncognitive variables. *Journal of Counseling and Development* 70(6): 724–727.

Simons, H. D., Van Rheenen, D., and Covington, M. V. (1999). Academic motivation and the student athlete. *Journal of College Student Development* 40(2): 151–162.

Shulman, J. L., and Bowen, W. G. (2001). *The Game of Life*. Princeton: Princeton University Press.

Steele, C. M., and Aronson, J. (1998). Stereotype threat and the test performance of academically successful African-Americans. In C. Jencks and M. Phillips (eds.),

The Black-White test score gap pp. 401–427. Washington, D.C.: Brookings Institution.
Stone, J. A., and Strange, C. C. (1989). Quality of student experiences of freshman intercollegiate athletes. *Journal of College Student Development* 30(2): 148–154.
Stuart, D. (1985). Academic preparation and subsequent performance of intercollegiate football players. *Journal of College Student Personnel* 26(2): 124–129.
Wolf-Wendel, L. E., Toma, J. D., and Morphew, C. C. (2001). There's no "I" in "team": Lessons from athletics on community building. *The Review of Higher Education* 24(4): 369–396.
Wolniak, G. C., Pierson, C. T., and Pascarella, E. T. (2001). Effects of intercollegiate athletic participation on male orientations toward learning. *Journal of College Student Development* 42(6): 604–624.

Received February 28, 2003.