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THE CAMPUS LIFE AND LEARNING PROJECT:

A REPORT ON THE COLLEGE CAREER

JUNE 2007

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1. Introduction¹

This is the second of two Reports on the Campus Life and Learning Project. As we noted in the first Report, this Project had its origins in the groundbreaking book *The Shape of the River* by Bowen and Bok (1999). Their work examined the flow of human talent through higher education, and centered on a group of highly selective colleges and universities at a national level. Among their major findings were that race and ethnicity were major determinants of how students experience college. Duke desired to know how those findings applied locally, and what implications they might have for university policy and practice. Hence, the Campus Life and Learning Project (CLL) was launched in 2000.

The CLL was designed to monitor the educational performance outcomes of a representative sample of Duke undergraduate students. The CLL design features a panel study of two cohorts of Duke students, first surveyed before coming to Duke and then in the second semester of their first, second, and fourth years in college. It permits comparisons across many groups of students, including racial ethnic and gender group comparisons. The study design allows hypothesis testing for differential education outcomes by group. It considers the pre-college, academic, social and residential domains of students' experiences. Finally, the design can help evaluate existing policies and inform the formulation of new policies.

The Research Design

This section summarizes the overall research design. The Methodological Appendix provides further technical detail on the sampling design, instrumentation, response rates, and

¹ Parts of this Introductory chapter and of the Methodological Appendix reproduce material initially presented in the first Report on the Campus Life and Learning Project (*The Campus Life and Learning Project: A Report on the First Two College Years*, May 2006, Anita-Yvonne Bryant, Kenneth I. Spenner, and Nathan D. Martin, Duke University. Available at: http://www.soc.duke.edu/undergraduate/cll/final_report.pdf)

issues of generalizability. The Campus Life and Learning Project centers on a multi-year prospective panel study of two consecutive cohorts of students enrolled at Duke University in 2001 and 2002 (graduating classes of 2005 and 2006). The target population was all undergraduate students in the Trinity College of Arts & Sciences and the Pratt School of Engineering. A prospective panel study is particularly strong for studying developmental processes, and is more powerful than a cross-sectional survey (i.e., a one-time survey) for untangling causal processes.

The sampling design provided for 1533 students, with the sample size selected to balance issues of statistical power with the available resources for a long-term project. The sampling design randomly selected 356 and 246 Whites from the first and second cohorts, respectively, all Black and Latino students, and about two-thirds of Asian students in each cohort. We used students' self-reported racial ethnic group from their Duke Admissions application form. This form also included a Bi-Multiracial category of response. The full design across both cohorts contains about 600 White respondents and over 900 non-White respondents. Figure 1.1 summarizes the design and data collection points, and highlights information that is gathered in most years. Comparisons in this report rely on responses to the pre-college, first- and second-, and fourth-year surveys, but concentrate on the in-college surveys.

First, each cohort was surveyed via mail in the summer preceding initial enrollment at Duke. Sample members were invited to join the study. They received and were asked to sign an informed consent document. Respondents were also given the option of providing confidential access to their student information records at Duke. The pre-college survey provided for detailed measurement of social and family background, prior schooling experiences, pre-college achievement orientations and identities, social networks, and expectations for college. About 78

Figure 1.1. Summary of Major Design Components, The Campus Life and Learning Project

<u>Pre-Collegiate Variables</u>	<u>Collegiate Wave 1 Variables</u>						<u>Post-Duke Variables</u>
<u>SURVEY</u> Demographic <ul style="list-style-type: none"> • Racial Ethnic Identity • Parental Racial Ethnic Identity • Citizenship • Religious Affiliation Family Structure Family Capital Cultural Capital Schooling Experiences Diversity Exposure Performance Expectations Performance Attributions Non-Cognitive Resources Identity Encapsulation Social Support Network Gender Roles College Expectations Admissions Resources SES Constellation Occupational Aspirations Psychological Stressors	Survey conducted during the sample's first year						Graduation Educational Attainment Occupational Attainment Income Attainment Life and Job Satisfaction Satisfaction with Duke
<u>SISS</u> High School Curriculum Test Scores (SAT, ACT, etc.) GPA Reader Rating Scores High School Extracurricular Financial Aid and Support	Academic <ul style="list-style-type: none"> • Record • Course difficulty • University academic climate general and diversity* • Classroom climate general and diversity • Integration** • Proposed major Social/interpersonal networks and support Residential Life <ul style="list-style-type: none"> • Climate and diversity • Integration Extracurricular Durham community College development <ul style="list-style-type: none"> • Stressful events and coping flexibility • Stereotype threat 						
	First Year Specialized Modules-Survey and qualitative research						
	<ul style="list-style-type: none"> • Transitions to college • Pre-major advising/academic risk assessment • Scholarship recipients • Student athletes • FOCUS Program 						
	* Diversity includes breadth of network and experiences of discrimination						
	** Integration is the degree to which a student is strongly affiliated with a given domain, resources and opportunities available in that domain.						
Application to Duke	2001	'02	'03	'04	'05	'06	
Design Timeline →							
Data Collection							
Class of 2005 (Cohort 1)	Wave - 1	W2	W3		W4		
Class of 2006 (Cohort 2)		W1	W2	W3		W4	

percent of sample members ($n = 1185$) completed the pre-college mail questionnaire. Well over 90 percent of respondents provided signed release to institutional records as well. Refusals were low at 1.8 percent of sample members.

Next, in the spring semester of the first, second, and fourth college years each cohort was surveyed by mail. The survey was not conducted in the third year as many Duke students are studying abroad during that year, creating logistical issues in locating them for survey response, and possible comparability issues for that year compared with years spent wholly in residence at Duke. These surveys contained a core set of questions that were replicated across all waves and were supplemented with questions regarding students' social networks, time-use, performance attributions, and the like. Additional modules included questions on advising, choice of major, residential and social life, perceptions of campus climate (in classrooms, dormitories and so on), support networks, faculty-student interaction, plans for the future and satisfaction with various aspects of their Duke education. Response rates to the in-school surveys ranged from about 56 percent to over 73 percent, depending on the cohort and wave.² The Methodological Appendix provides detailed response rates by cohort and wave, along with information on possible non-response biases.

For comparisons in this report, unless otherwise noted, we use so-called weighted data, assigning weights to cases based on the sampling fraction for a sample member's racial ethnic group (i.e., groups that were over-sampled are "weighted down" to their population frequencies). This permits unbiased and efficient estimates of population parameters for the Duke student population, taken as a whole. Unless otherwise noted, the figures and tables are based upon

² Response rates as a percentage of those still enrolled at Duke were 2-5 percent higher as some original sample members had left Duke, were on leave of absence, or academic probation and the like.

weighted data. Where we thought it might be helpful, we report the results of statistical tests of significance for differences among groups or across years of study.

Structure of the Report

The larger CLL database contains an enormous amount of information, and we necessarily had to select from a large number of possible comparisons. Nonetheless, we attempt a comprehensive portrait of the college years (pre-college comparisons were featured in the first report). Our principal audiences are the various Duke constituencies including administrators, trustees, faculty, staff, students, alumni and parents.

Most of the comparisons in the Report involve simple descriptive statistics, but in some cases we provide more detailed comparisons. For the most part, we do not engage in an extensive review of or dialogue with the scholarly literature in this Report, nor do we use the more high-end statistical models used in social science research. We save these exercises for the scholarly side of the larger project. Our principal goal is to accurately describe and understand Duke campus life and learning.

Section Two considers identity and personal development issues. This includes comparisons on self-rated academic and intellectual skills as they develop over the college career, developmental variations in various stressors, self-esteem, and locus of control, and several comparisons on self-reported pressures to conform and feelings of isolation and inadequacy over physical appearance. This section also features extended comparisons on variations in a number of key identities over the college career, including by racial ethnic group and gender.

Section Three considers important variations in time use and several indicators of academic achievement as they vary over the college career. This section contains two of the more important findings in this Report. First, we find that Duke undergraduates spend surprisingly modest amounts of time attending classes, studying or doing homework (on average, from 20-24 hours per week). Further, this finding is fairly general to students from different racial and ethnic groups, men and women, and Greek (i.e., fraternity, sorority) and non-Greek students. We report on new unpublished studies by economists that show between 1961 and 2004, time spent on class and studying among U.S. college students went from about 40 hours per week to 23-26 hours per week. The CLL data along with other unpublished comparisons from 1961 data show that Duke students are fully part of that much larger historical shift. This may have major policy implications.

Second, for the first time in the history of the CLL Project we report on student academic achievement as measured by grades taken over the full college career, including by gender and racial ethnic group (the so-called “achievement gap”). Importantly, the gap among racial ethnic groups substantially converges over the college career. For example, the Black-White grade differential in the first college semester was about one-half of a full letter grade. By second semester of the senior year, the gap had narrowed to less than two-tenths of a letter grade, a reduction of over 60 percent. Interestingly, young men outscore young women in the first college year, but then are overtaken by young women, who enjoy a grade advantage the remainder of the college career. These findings too are important indicators for Duke and may have policy implications.

The Fourth Section considers a number of comparisons aimed at capturing climate, from the classroom, to residential to social settings. The comparisons include perceived treatment by

Duke instructors, perceived discrimination in various settings as these vary over the college career, and a number of indicators of classroom environments and associated college career variations. As we found in the Report on the first two college years, through the senior year there are a number of ways in which the reality of academic, residential and social climate at Duke University are at variance with its aspirations as an institution of higher education.

The Fifth Section features college career comparisons of social life viewed through the lens of the racial ethnic diversity of social networks. As we found in the Report on the first two college years, social networks are highly stable (and relatively segregated) over the college career, and show little change over what students experienced in high school. At least on this dimension of social life, the undergraduate collegiate experience appears to have had little effect on diversifying social networks. The section also features several comparisons on the presence and importance of alcohol and drugs over the college career, and changes in the incidence of romantic relationships over college.

The Sixth Section highlights detailed measures of satisfaction with the Duke experience, and several indicators of students' future plans for one-year and five-years after leaving Duke, in arenas of schooling, labor force activities, and family. Overall, students report relatively high levels of satisfaction with their Duke career and most aspects of their undergraduate experience.

A final concluding section reviews key findings and explores policy implications of the research.

2. Identity and Personal Development

In this section we review student identities and personal development over the college career. We assume that students progress in a normative fashion with specific transition points including adjustment to university life, degree and major selection, identity crystallization, and career decision-making. Each year appropriate developmental tasks must be mastered.

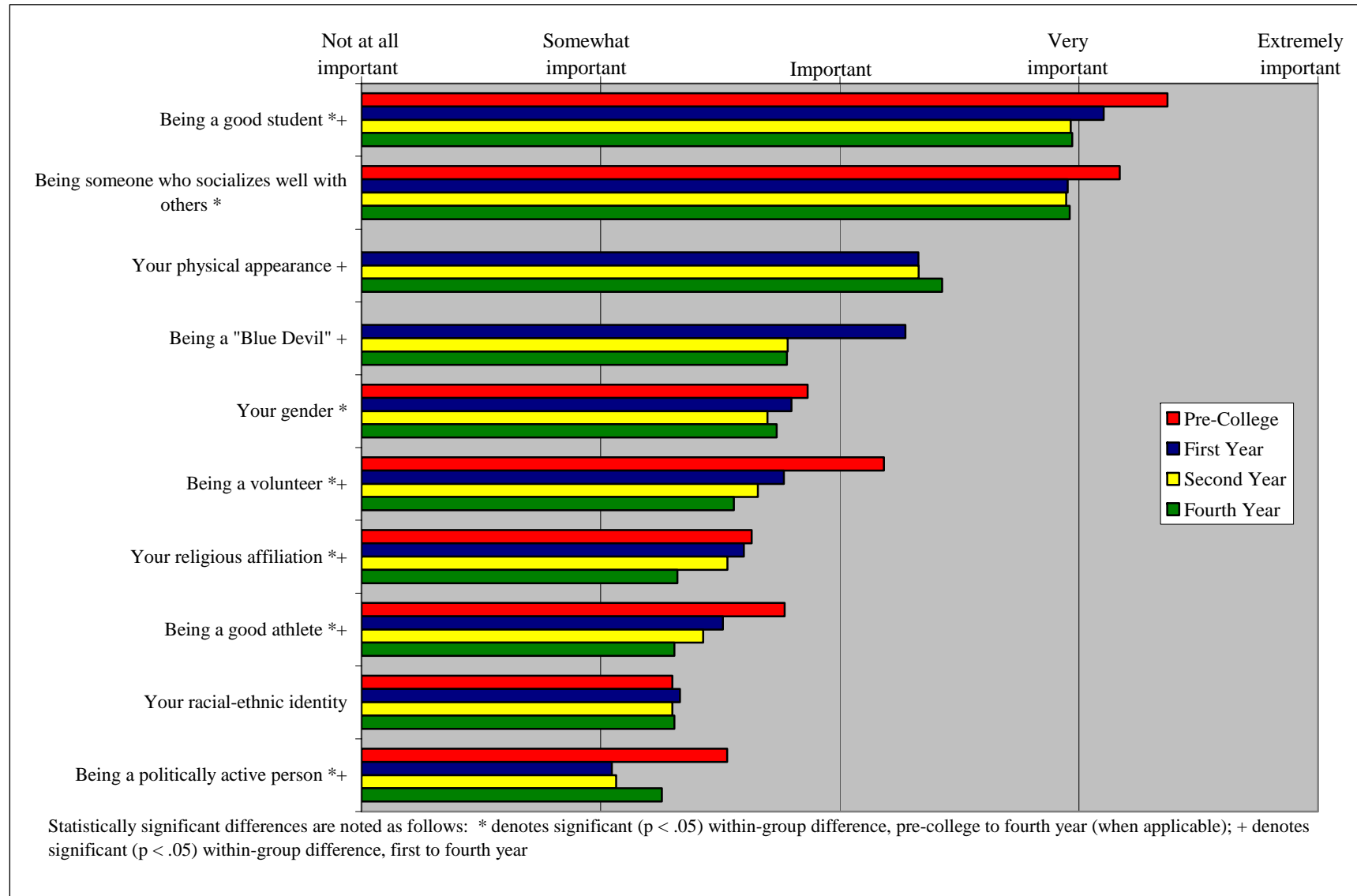
Simultaneously, upon arriving at Duke, students are proceeding on a trajectory characterized as a process of acquiring “collegiate capital.” This capital includes individual and institutional resources that promote or restrict positive educational outcomes. Generally, we view a student’s personal and identity development through these transactions with the university. However, additional salient domains for student maturation include peers and family.

Identity Transitions

Self (individual, ethical and character) and academic competency development are a central part of the first year experience. For sophomores, the focus is on deepening academic competencies and extracurricular involvement. For seniors, loss of attachments, unrealized goals, post-graduation plans and increased responsibility are central. These developmental tasks occur within the longitudinal context of attachment, individuation and identity development (Grayson and Meilman, 2006).

Figure 2.1 reports the self-rated importance of ten identities that were measured in each survey year. Overall, students are highly invested (rating it very important) in being a good

Figure 2.1. Importance of Selected Student Identities, Pre-College to Fourth Year
 “How important are each of the following sub-identities to your overall identity?”



student and being someone who socializes well with others, although both of these identities decrease in importance from high school into the college years. The importance of several other identities declined slightly over the college career, such as being a volunteer, religious affiliation and being a good athlete, while the importance of being a politically active person increased slightly.

Figure 2.2 reports gender variations in selected identities by college wave. Several identities were more important for Duke women than for Duke men, including: being a good student, gender, physical appearance, being a volunteer, and religious affiliation. Being a good athlete was significantly more important for men, although the importance of this identity decreased markedly across the college career for both men and women. The importance of physical appearance was significantly more important for female students in the first and fourth year, although this item increased in importance across the college career for both men and women.

Figure 2.3 provides information on some of the more pronounced differences in selected identities by racial ethnic group. Religious identity remained between important and very important for Black students across the college years. The same identity remained between somewhat important and important for Latino respondents, but decreased in importance from pre-college to the fourth year. Non-White students attach dramatically greater importance to their racial ethnic identity across the college career. For Black respondents, the importance of racial ethnic identity increased from pre-college to the first year and remained at this level of importance throughout college. Latino, Asian and Bi-Multiracial respondents reported shifts in the importance of this identity, increasing in some years and decreasing in others.

Figure 2.2. Importance of Selected Student Identities, by Gender, Pre-College to Fourth Year
 “How important are each of the following sub-identities to your overall identity?”

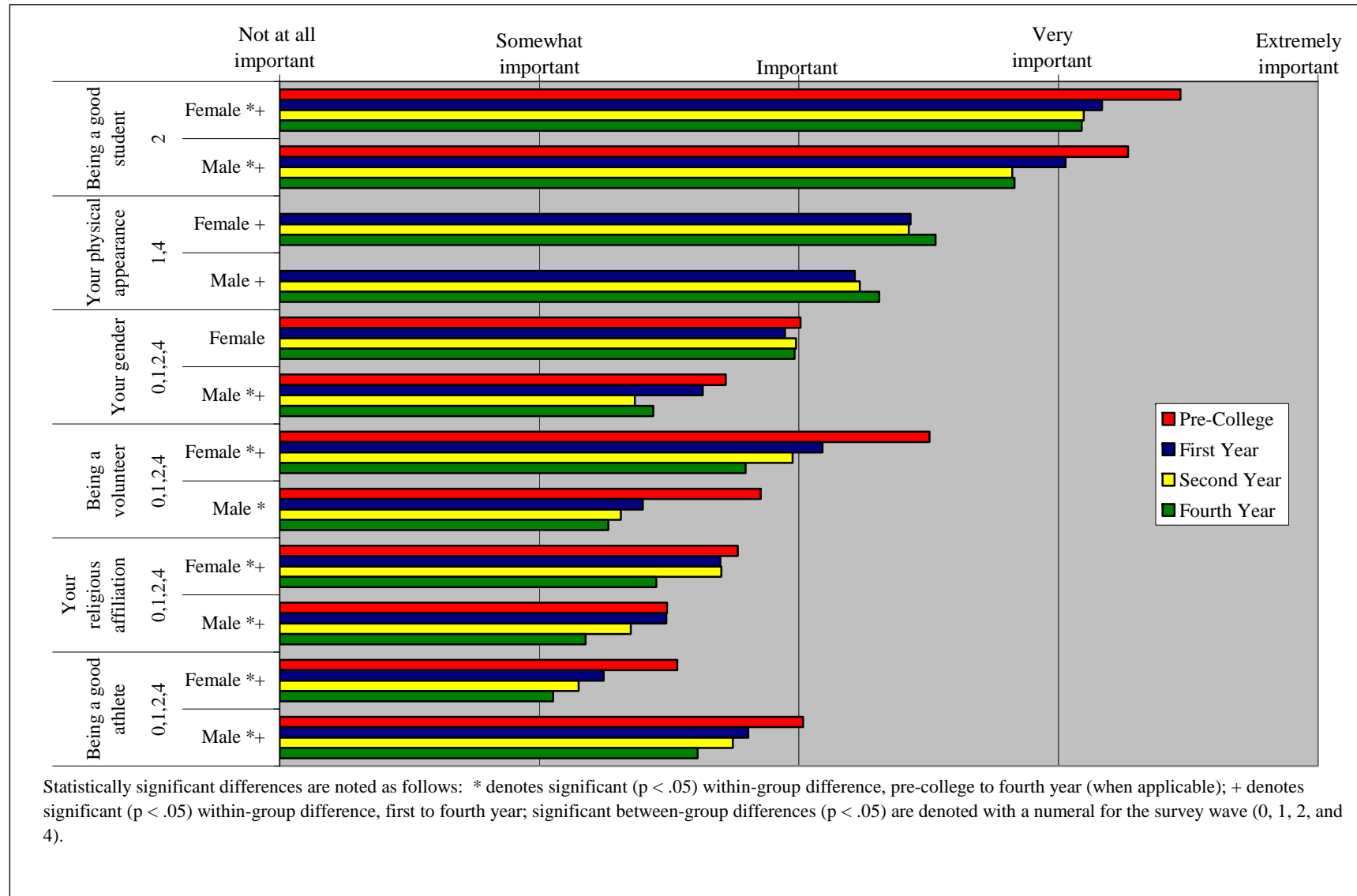
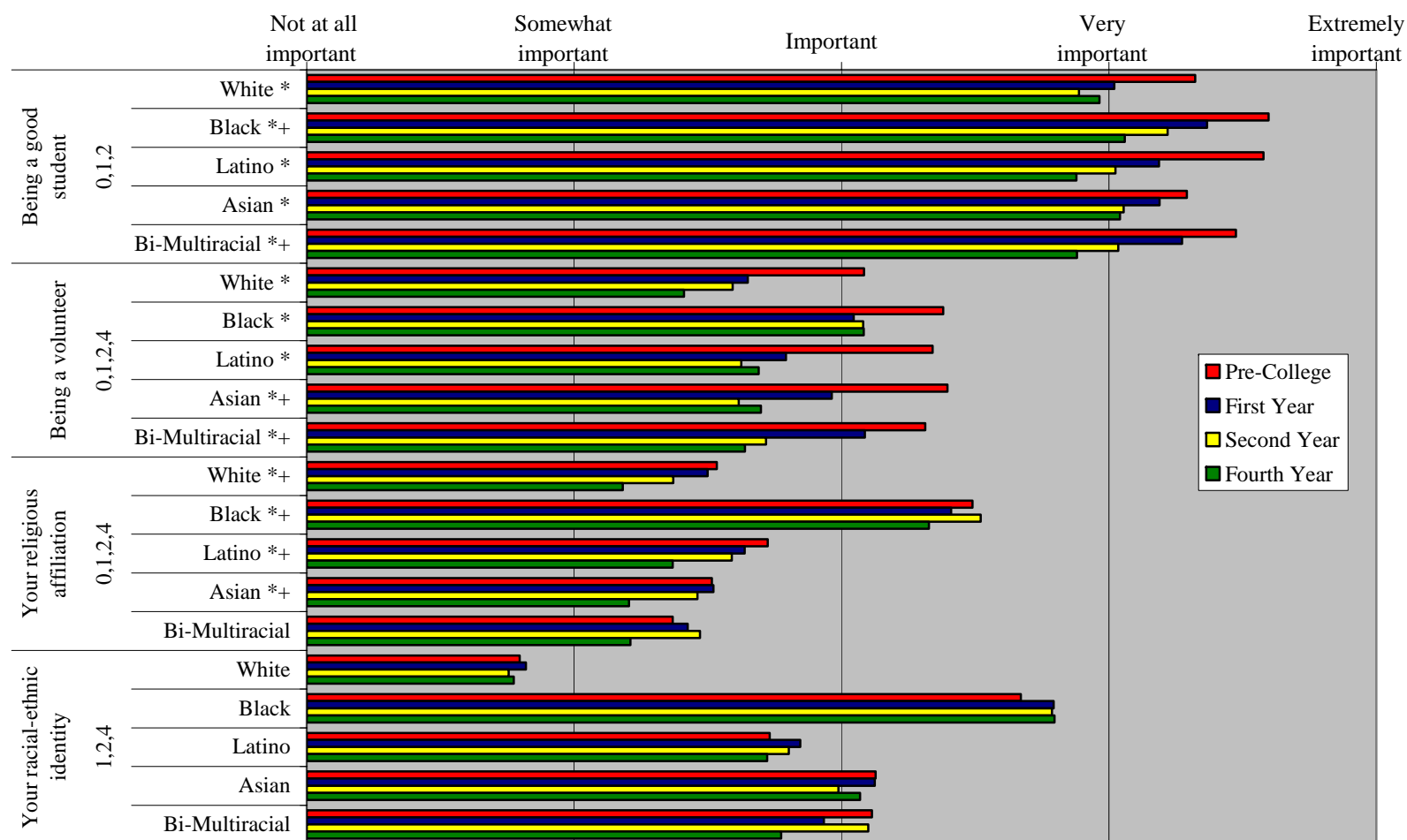


Figure 2.3. Importance of Selected Student Identities, by Racial Ethnic Group, Pre-College to Fourth Year
 “How important are each of the following sub-identities to your overall identity?”



Statistically significant differences are noted as follows: * denotes significant ($p < .05$) within-group difference, pre-college to fourth year (when applicable); + denotes significant ($p < .05$) within-group difference, first to fourth year; significant between-group differences ($p < .05$) are denoted with a numeral for the survey wave (0, 1, 2, and 4).

Questions of interest include whether students are disidentifying from their pre-college identities, and which identities gain salience over the college career? The data reveal that overall, students show a pattern of disidentification from most identity domains. The clearest exceptions are physical appearance and, for Black respondents, racial identity, both of which retain or slightly increase in salience over college. One could interpret the larger disidentification pattern as a sort of maturation effect, wherein strong sub-identities are brought into balance in the process of becoming an adult. Alternatively, one could argue that the stronger identities that were cultured in family of origin and pre-college schooling and peer group experiences are weakened somewhat by exposure to broader worldviews and interactions that come with college life. The descriptive data here do not allow us to decipher which of these processes (or others) might be at work.

Stress and Transition

Development is often characterized as managing the relationship between appropriate levels of stress or challenge, on the one hand, and levels of support or “scaffolding,” on the other hand. However we must also recognize that our cohorts are members of the “trauma generation” (Singer & Hall, 2007) and have experienced the Columbine school shootings, 9/11, and our younger (2006) cohort lived through the campus lacrosse crisis during the spring semester of their senior year. This could make them uniquely vulnerable to normative developmental stresses and strains.

In the first Report, when we reviewed the types of challenges or stressors that respondents faced prior to Duke, we saw that nearly 30 percent of all respondents reported severe physical illness or injury of a family member during high school. During the college career, the

corresponding percentage decreases to about 20 percent (see Figure 2.4). Some stressors were relatively common to Duke students, but were reported to have little effect on academic performance. For example, over 55 percent of the respondents experienced a relationship break-up, and over 30 percent experienced the death of a close family member or friend. Students rate both events as having a small to moderate negative effect on academic performance. Other stressors were less frequent, but had a larger negative impact on academic performance. Less than five percent report being a victim of violence or an assault, a parental divorce, or dismissal from the university. Less than five percent report the death of a parent or caregiver, yet they report this as having greater than a moderate impact on academic functioning. Being a victim of violence was rated as having a moderate negative effect on academic performance. The stressor with the largest reported negative effect on academic performance was being dismissed from the university. Finally, a serious medical or psychological condition was reported by almost one-quarter of respondents, and it had a greater than moderate negative effect on academic performance.

Personal Development

In each survey wave we assessed several areas of personal development, including self-esteem and locus of control. Figure 2.5 provides the trend data in these indicators over the college career, and where available, from pre-college onward. As detailed in our first Report, self-esteem levels decline from pre-college to the first year. Self-esteem rebounds in the second year and increases further by the senior year to levels comparable to pre-college levels. It appears that the first year is a relatively vulnerable time for the self-esteem of the respondents.

Figure 2.4. Incidence (bars) and Negative Effect on Academic Performance (line) of Selected College Career Stressors
 “Please indicate if you experienced any of the following during your college career. For those situations checked, rate the negative effect it had on your academic performance.”

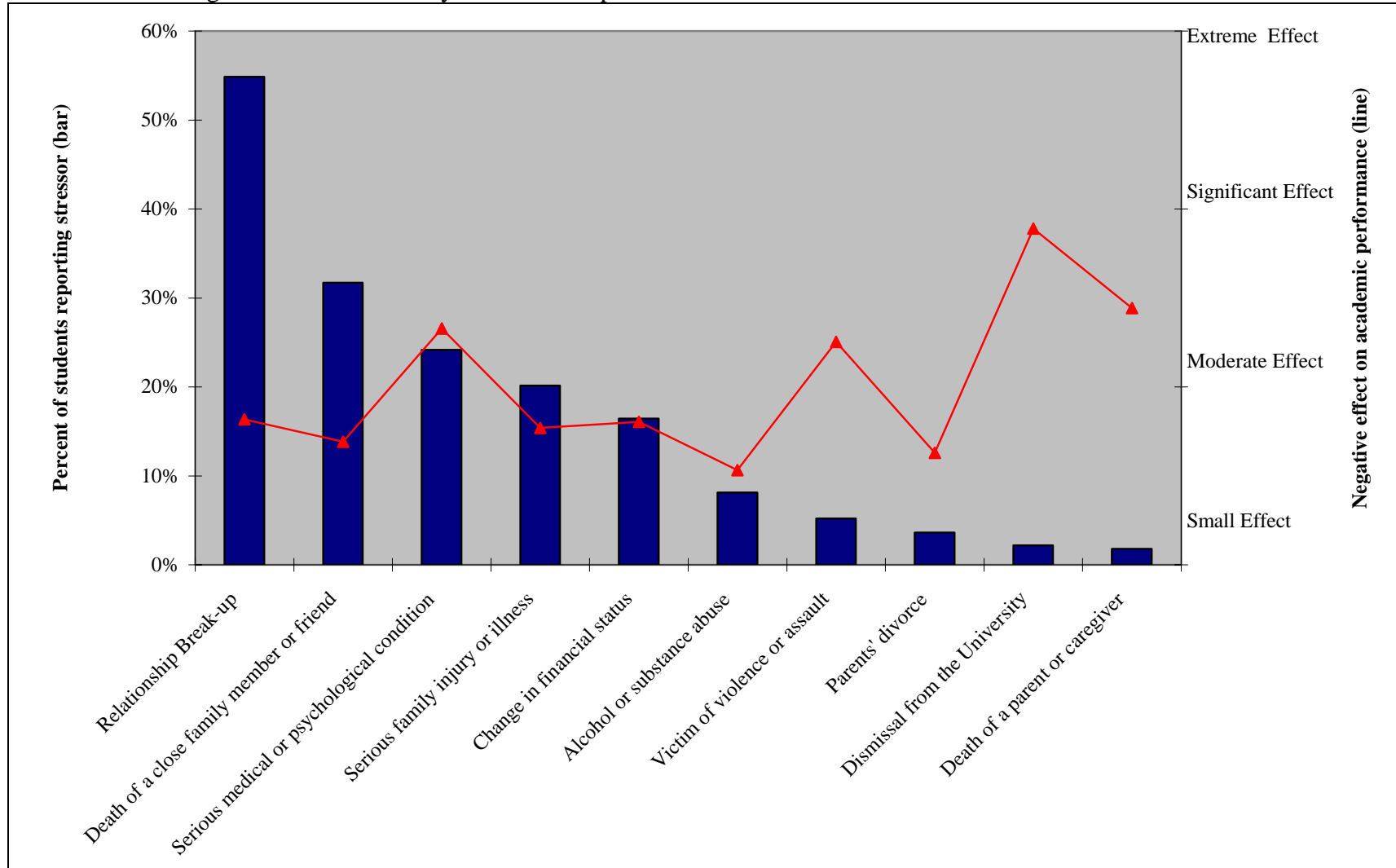
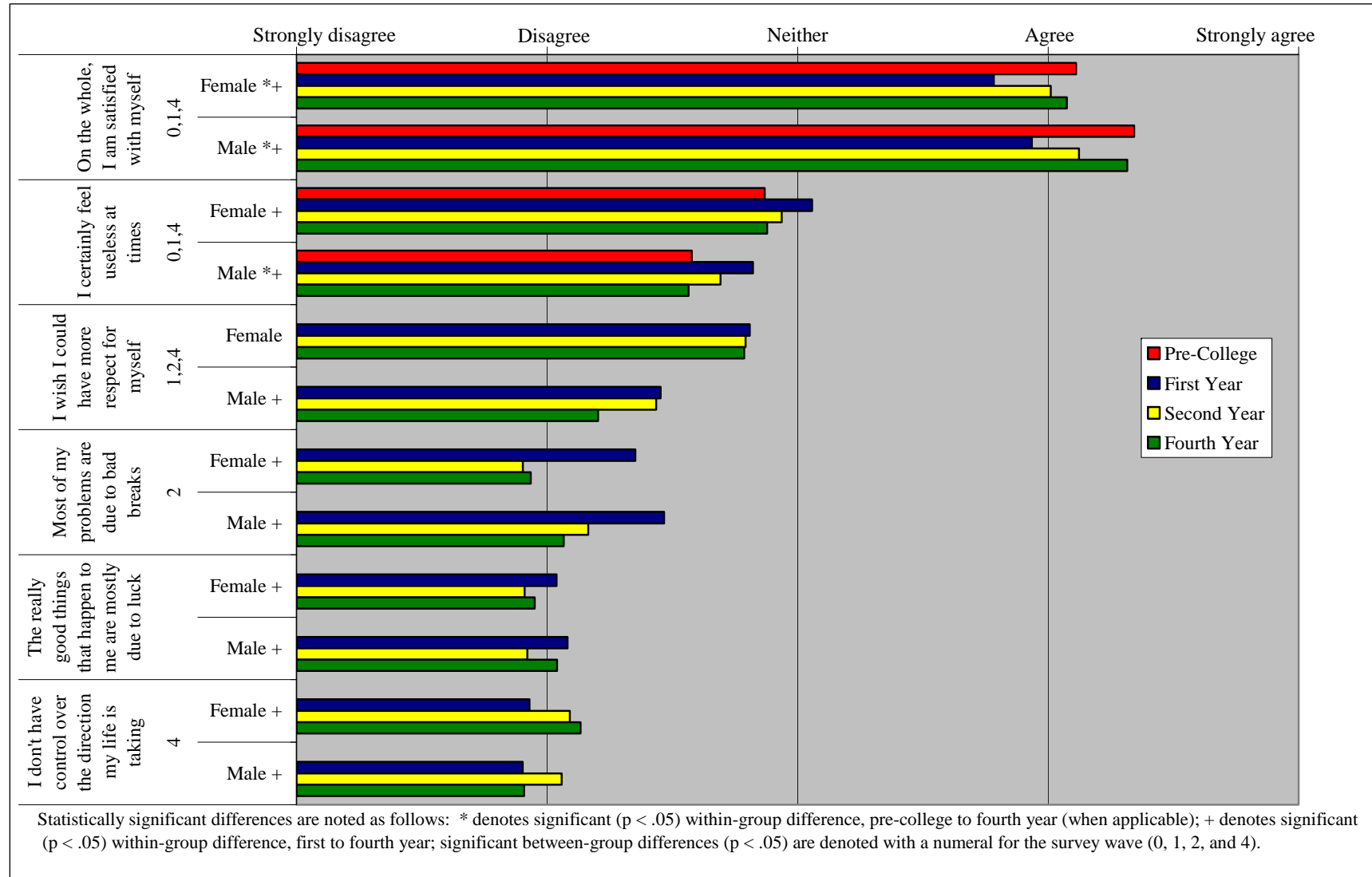


Figure 2.5. Selected Indicators of Self-Esteem and Locus of Control, by Gender, Pre-College to Fourth Year
 “For the following statements, please indicate the extent to which you agree or disagree”



Men enjoy a slight self-esteem advantage over women, and this difference is statistically significant in the pre-college, first- and fourth-year waves. The indicator for self respect (“I wish I could have more respect for myself;” reverse coded), shows males with slightly higher levels of self-respect, levels that increase slightly over the college career. Female levels of self-respect are virtually constant over the college career. The indicators for locus of control reveal few significant gender differences, and appear to suggest a rather modest shift in internal direction over the college career.

Figure 2.6 shows selected indicators of social pressures and social integration. Self-reported pressures to conform to beliefs and values of friends are low over the college career for men and women. Feelings of isolation from campus life are lowest in the first and fourth years and highest in the second year, for both men and women. Finally, the typical female respondent reports “sometimes” when asked how often she felt uncomfortable with her physical appearance during the past year. The typical male respondent reports midway between “sometimes” and “rarely,” a significantly lower level of discomfort with physical appearance compared with women. This difference is important. Recall, the earlier data on identities (Figure 2.1) showed that “your physical appearance” was the third highest rated identity during the college years for both young men and women, scoring between “important” and “very important.” We view this as reaffirming what others have observed concerning the strong pressures on college students, particularly women, concerning their physical appearance.³

³ http://www.duke.edu/womens_initiative

Figure 2.6. Selected Indicators of Social Pressures and Integration, by Gender, First to Fourth Year

“In the last year, how often did you feel:”

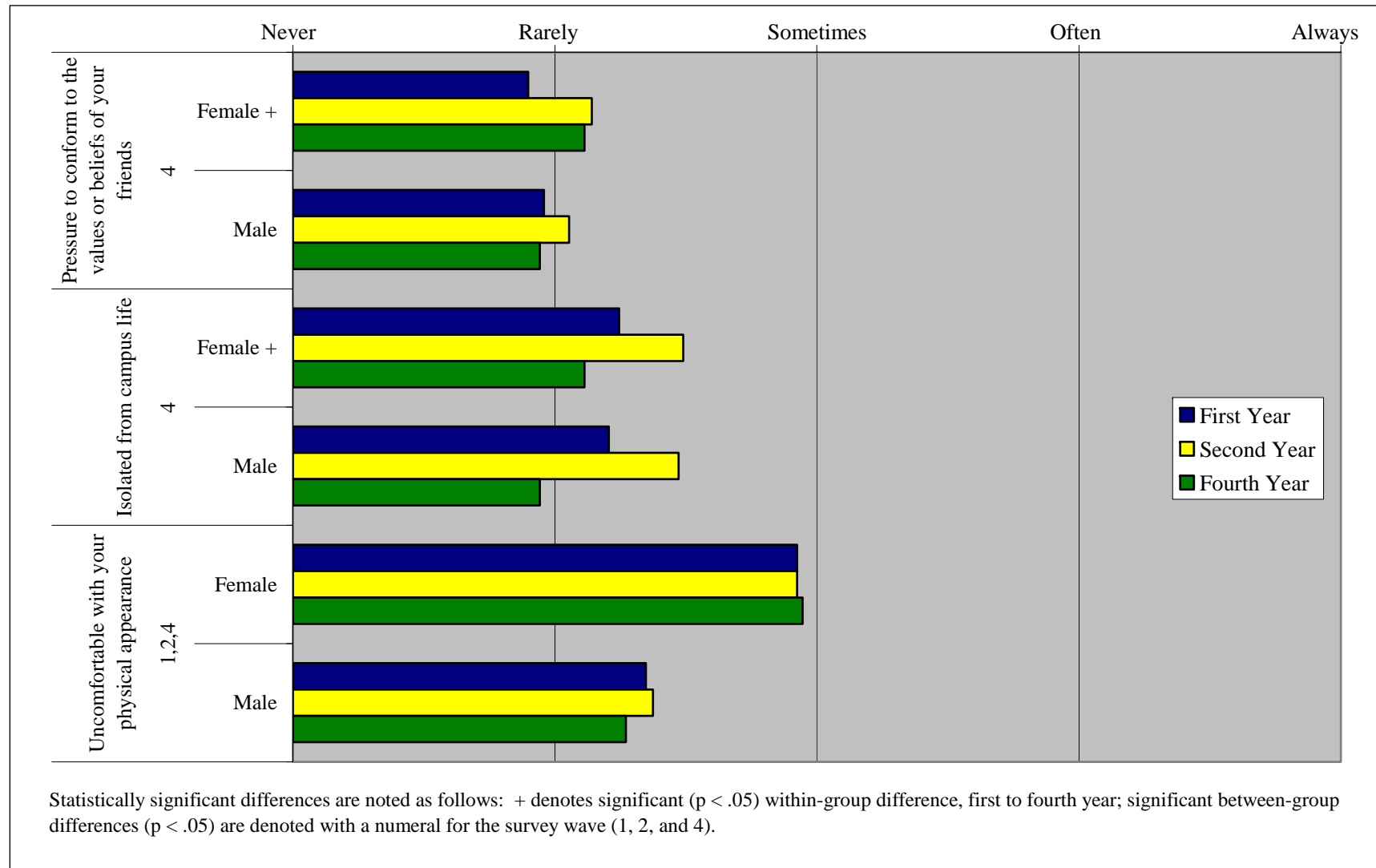
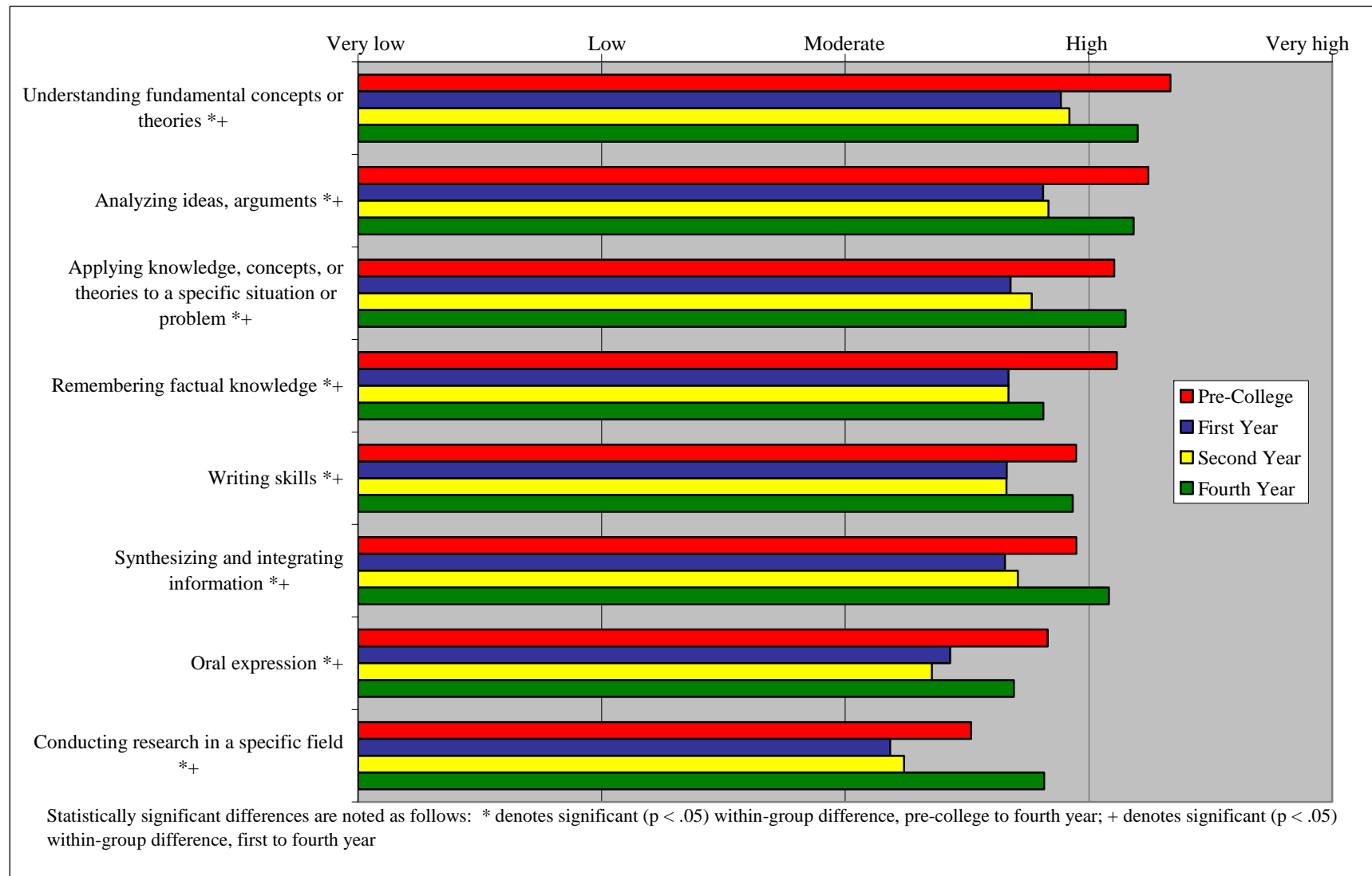


Figure 2.7. Self-Ratings on Selected Academic and Intellectual Skills, Pre-College to Fourth Year



Intellectual Development

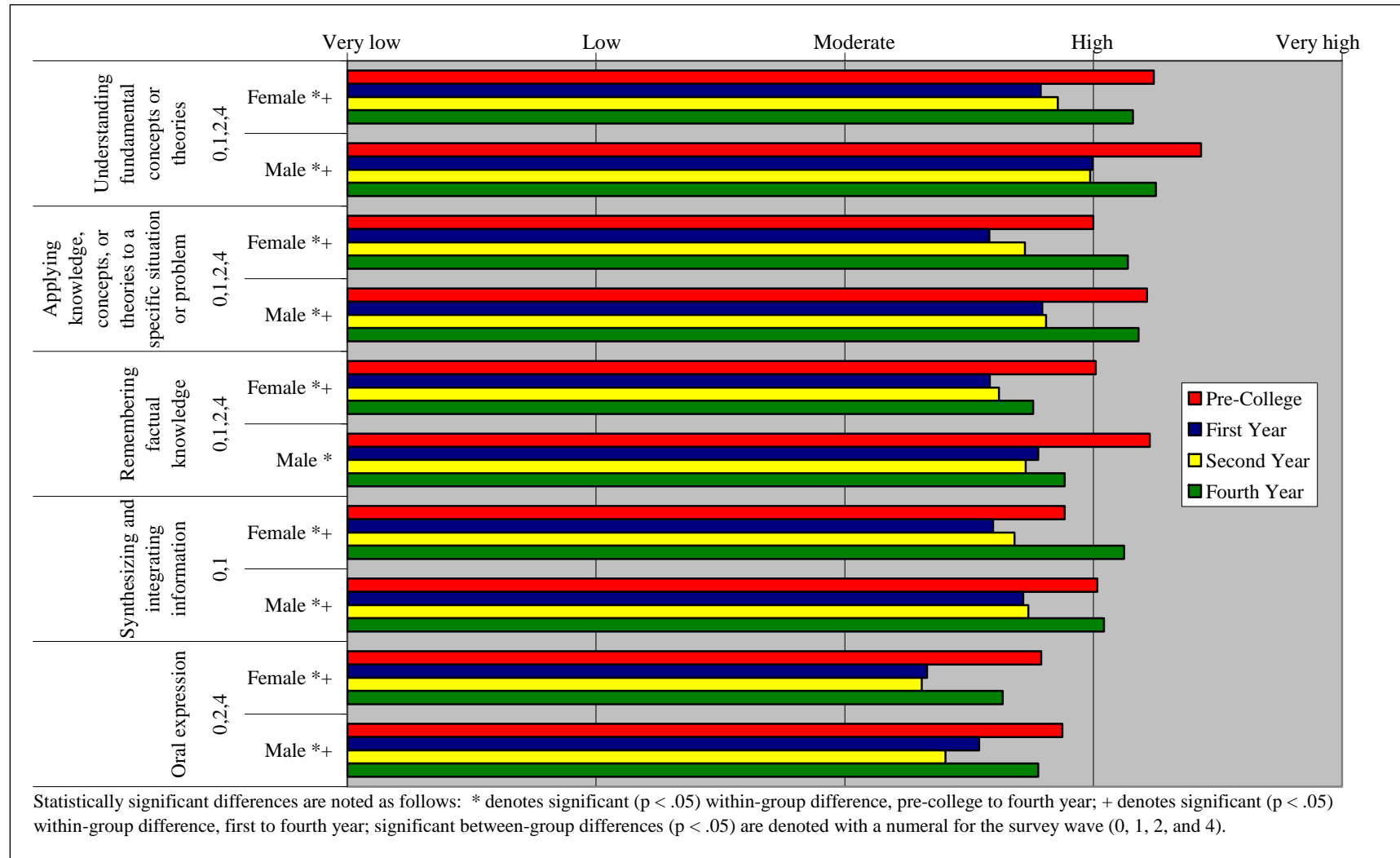
In each survey wave we asked respondents to rate themselves on a list of academic and intellectual skills. Figure 2.7 reports the summary data. Across all selected academic and intellectual skills, a pattern emerges of high self-assessments in the pre-college survey followed by a decrease during the first and second year before rebounding by the fourth year to levels near or exceeding pre-college levels. Several items demonstrated higher fourth-year ratings than in the pre-college year, including: “applying knowledge, concepts, or theories to a specific situation or problem,” “synthesizing and integrating information,” and “conducting research in a specific field.” We interpret these patterns to reflect a true intellectual development effect over the college years with students encountering a realistic shock between their pre-college and first year ratings and abilities.

Figure 2.8 reports self-ratings on selected academic and intellectual skills, by gender. While we find the same general temporal pattern of skill development for both male and female students, there appear to be enduring gender differences across the college years. For several items men report higher skill levels at each survey wave. In the senior year, men report significantly higher skills with “understanding fundamental concepts,” “applying knowledge and concepts,” “remembering factual knowledge” and “oral expression” than women.

Summary

As we review the patterns on identity, personal, and intellectual development among our respondents, it is not surprising that students attending a highly selective university are strongly identified with being a good student. Investment in interpersonal skills is also rated as very important. However, investment in these identities decreases over the college years with the

Figure 2.8. Self-Ratings on Selected Academic and Intellectual Skills, by Gender, Pre-College to Fourth Year



only increase being a greater identification with physical appearance for all students, and a growing importance of racial ethnic identity for Black respondents.

It is apparent that our respondents come to Duke having experienced significant life stressors. When students report in-college stressors and their impact on academic performance, the results are varied. Generally, the most frequent stressors have the smallest negative effect on academic performance. The largest negative impact on academic performance is for dismissal from the university, although the event and failing academic performance are likely highly related. While nearly one-quarter of students report experiencing a serious psychological or medical condition during the college years, this stressor has a relatively large effect on academic performance.

Finally, we witness the influence of the college career on the academic and intellectual development of respondents. Taking into account a first year “re-orientation” of self-ratings of ability, students report overall increases in their intellectual skill development over the college years.

3. Time Use and Academics

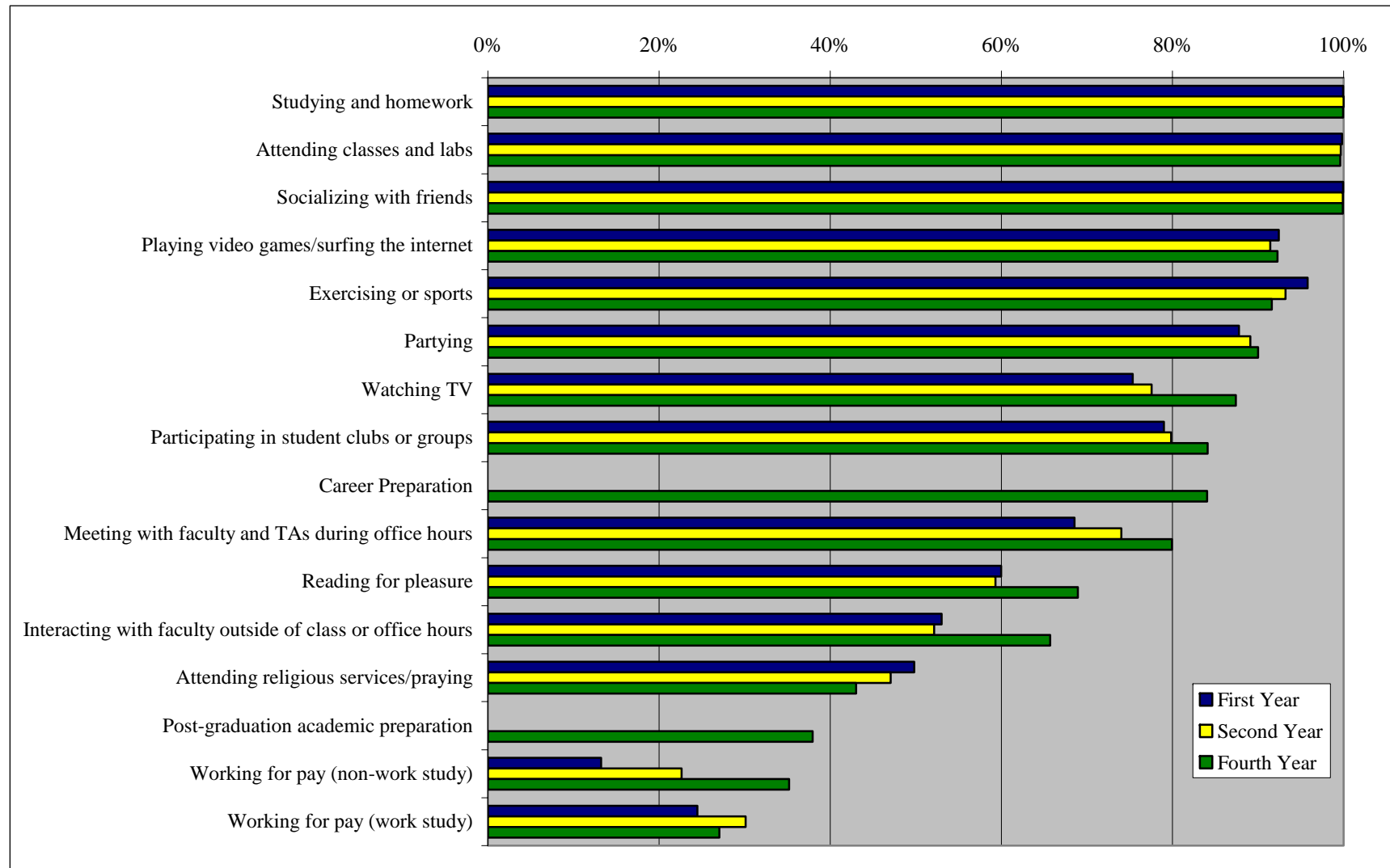
Time Use

Time use offers a window on how students organize their lives and the relative behavioral importance students assign to various activities. In each survey year we asked respondents to indicate the amount of time that they spent on various activities in a typical week during the previous semester. The response categories included “none,” “less than one hour,” “1-5 hours,” “6-10 hours,” “11-15 hours,” and “16 or more hours” per week.⁴ In the figures below we assigned the median value of the category to responses for purposes of calculating averages. In the Report on the first two college years, we included respondents who spent zero time on an activity in the calculation of average time spent on an activity. In this Report we use a different coding convention. We first report on the percent of students who spent any time at each activity. Later comparisons of averages include only respondents who spent at least some time at an activity (excluding those who spent zero time). Hence, the figures on time use are not fully comparable across the two Reports.

Figure 3.1 reports the percentage of students who participate in selected activities during the first, second, and fourth years of college. Virtually all students reported spending at least some time studying and doing homework, attending classes and labs, and socializing with friends in all three college waves. Nearly or just over 90 percent report playing video games/surfing the Internet, exercising or sports, or partying in a typical week. At the other end of the activity scale,

⁴ Inadvertently, in the first-year survey for one cohort, the upper response category was listed as “16-20.” In other waves it was “16 or more.” For this upper category in all waves we have assigned a value of 18 hours per week for the purpose of estimating mean time use. This probably has the effect of slightly to modestly underestimating the hours spent studying. Our pre-testing showed that very few students needed or used a category above 20 hours per week for study time.

Figure 3.1. Percent of Students Who Participate in Selected Activities in a Typical Week, First to Fourth Year



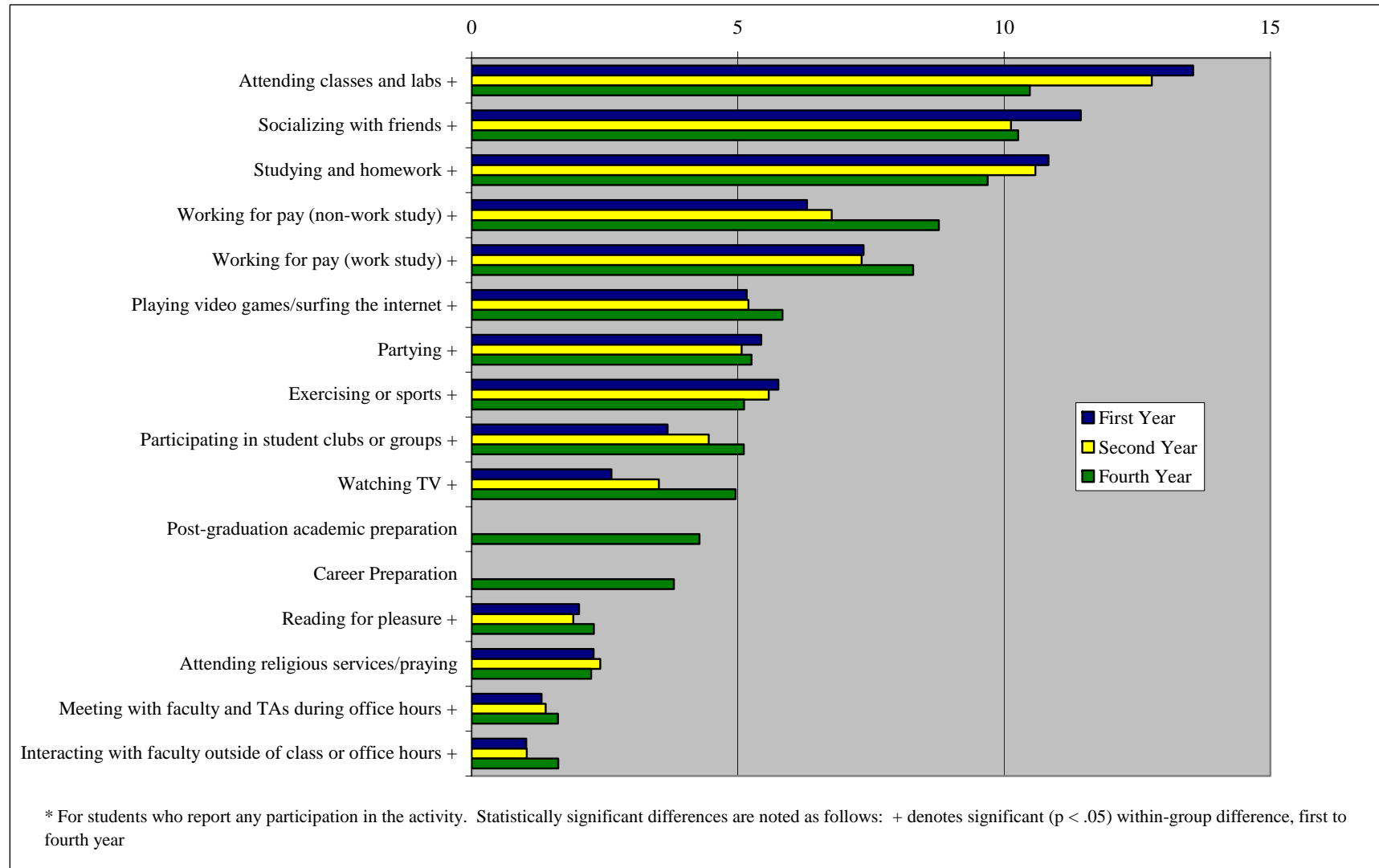
no more than one third of students in any college wave reported working for pay in a work-study or non-work-study job during college.

Figure 3.2 reports the average hours spent in selected activities in a typical week. Again, the calculation is based only on those respondents who reported spending at least some time on the activity. Attending classes and labs consumed the most time over the college career, ranging from about 13.5 hours per week in the first year, declining to just over 10 hours per week by the senior year. This activity was followed by socializing with friends (10-11 hours per week on average), and studying and homework (decreasing from less than 11 hours per week in the first year to less than 10 hours per week in the senior year).

Some activities declined in time spent over college: attending classes and labs, socializing with friends, and exercising and sports. Other activities increased in average time spent over the college career: working for pay (both work-study and non-work-study), playing video games/surfing the Internet, participating in student clubs or groups, and watching TV. Popular social networking sites, such as Facebook.com, went from non-existence to high popularity over the college careers of our respondents (2001-2006). Interestingly, watching TV showed one of the largest increases over the college career, from about 2.5 hours per week first year to about five hours per week senior year. Recall, about 15-25 percent of respondent report watching no TV in a typical week, hence this estimate refers only to those who watched at least some TV.

On average, seniors spent 3-4 hours per week in post-graduate academic preparation (among those who spent any time in such preparation) and 3-4 hours per week in career preparation during the fall semester of their senior year. Also, meeting with faculty or TA's

Figure 3.2. Hours Spent in a Typical Week in Selected Activities, First to Fourth Year*



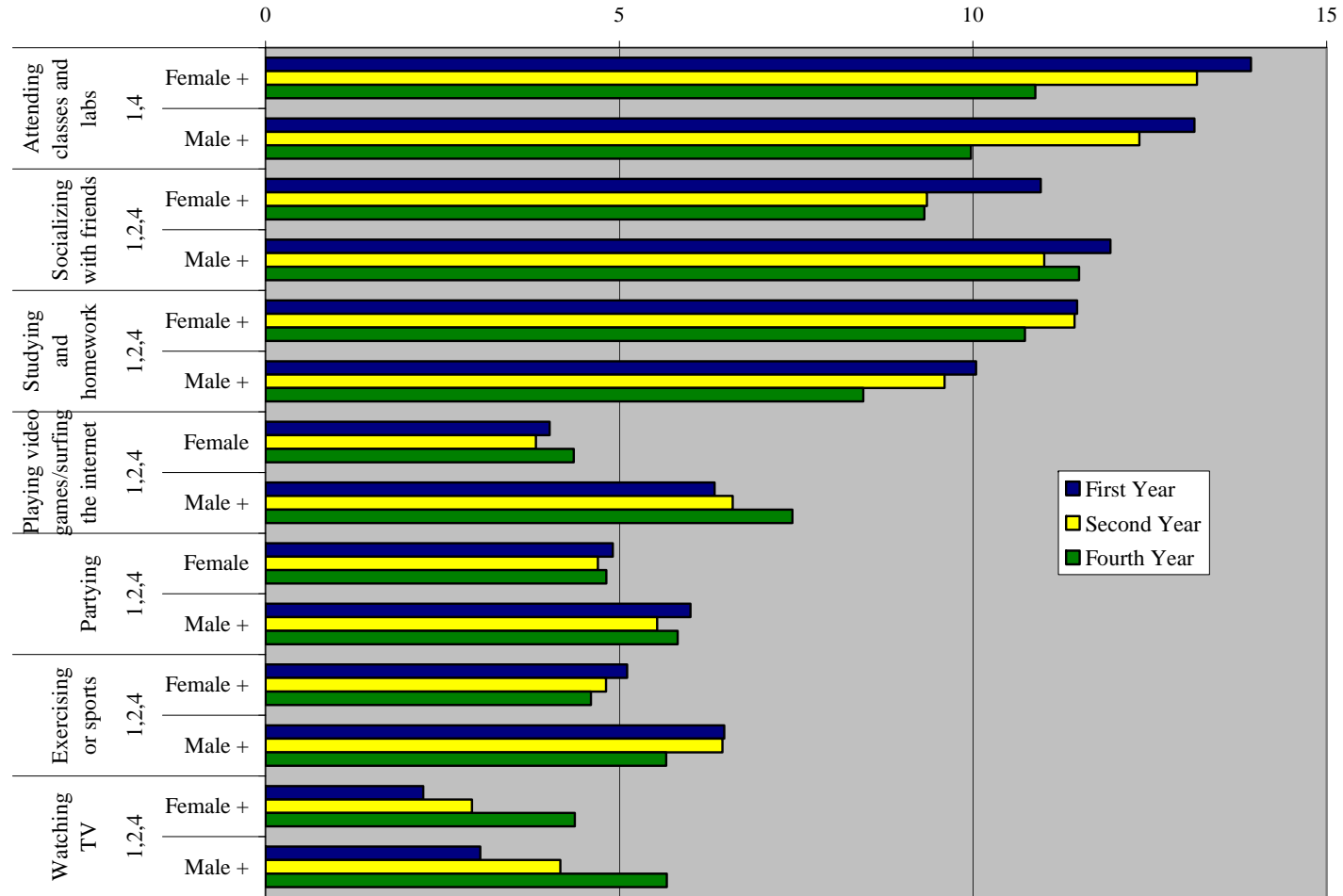
during office hours, or interacting with faculty outside of class or office hours consumed the lowest average time per week among the 16 measured activities.

Figure 3.3 lists activities that show statistically significant gender differences. For example, females were more diligent at attending classes and labs although the difference is significant only in the first- and fourth-year surveys. Further, females spent more time on studying and homework in all survey years. The descriptive data alone do not allow us to make judgments about efficiency and effort in time use. Conversely, in each survey year males spent significantly more time playing video games/surfing the Internet, partying, exercising and sports, and watching TV.

Figure 3.4 shows those activities that had the most pronounced and statistically significant differences in time use by racial ethnic group. White, Latino, and Bi-Multiracial students reported spending relatively more time socializing with friends and partying compared with Black and Asian students (for both socializing with friends and partying, the differences are about 2-3 hours a week on average). One other racial ethnic difference occurs (data not shown): Black students are much more likely to report working during college, although there are no significant racial ethnic differences among students who do report working. Other racial ethnic differences in time use, while perhaps statistically significant, are substantively small.

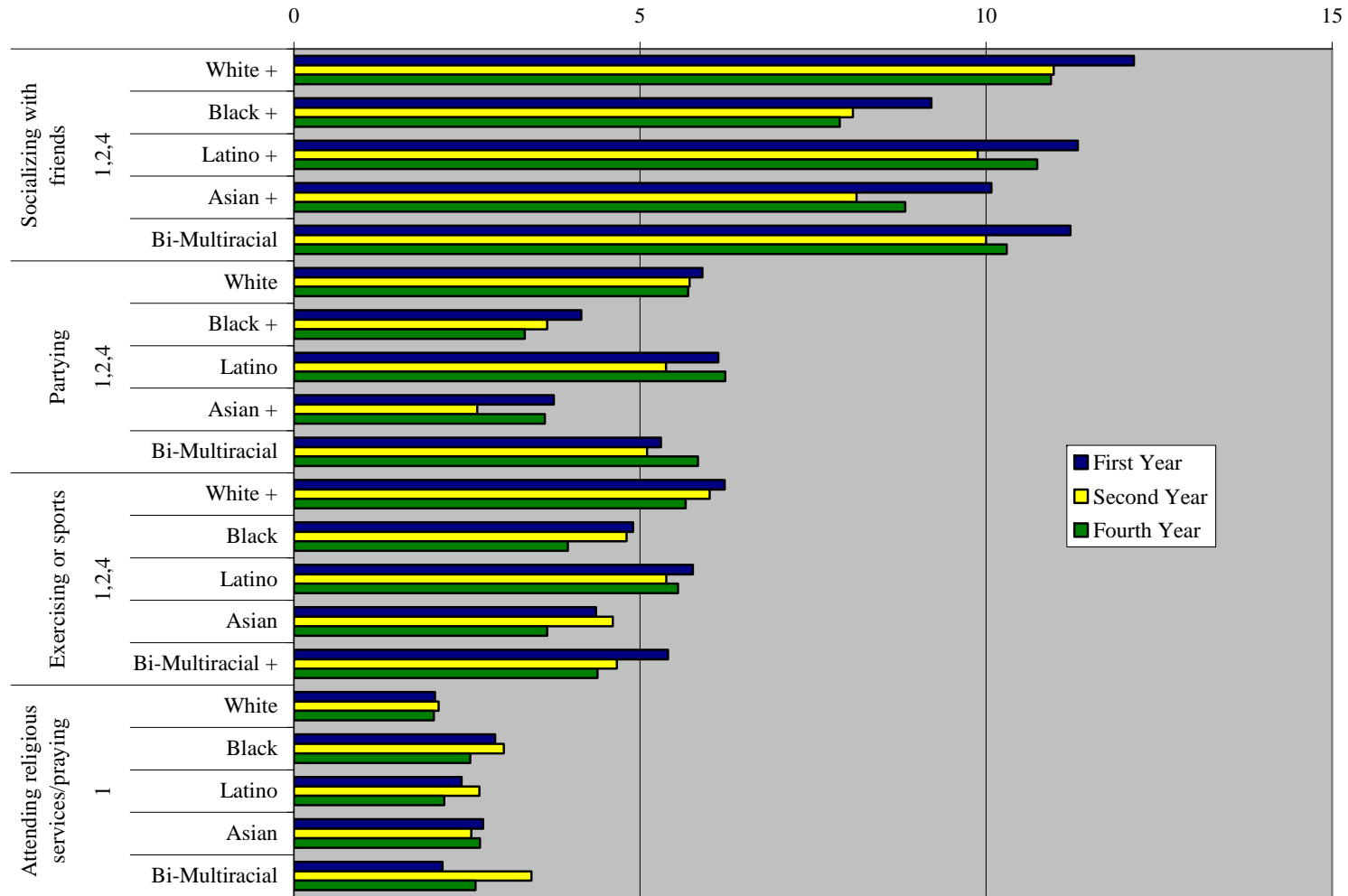
Figure 3.5 reports those activities that contained statistically significant Greek/non-Greek differences in time use for one or more in-college survey waves. Student members of fraternities and sororities reported spending more time socializing with friends and partying in all survey years. Their non-Greek student colleagues compensated by spending more time playing video games/surfing the Internet and watching TV. In the senior year only, Greek students reported

Figure 3.3. Hours Spent in a Typical Week in Selected Activities, by Gender, First to Fourth Year*



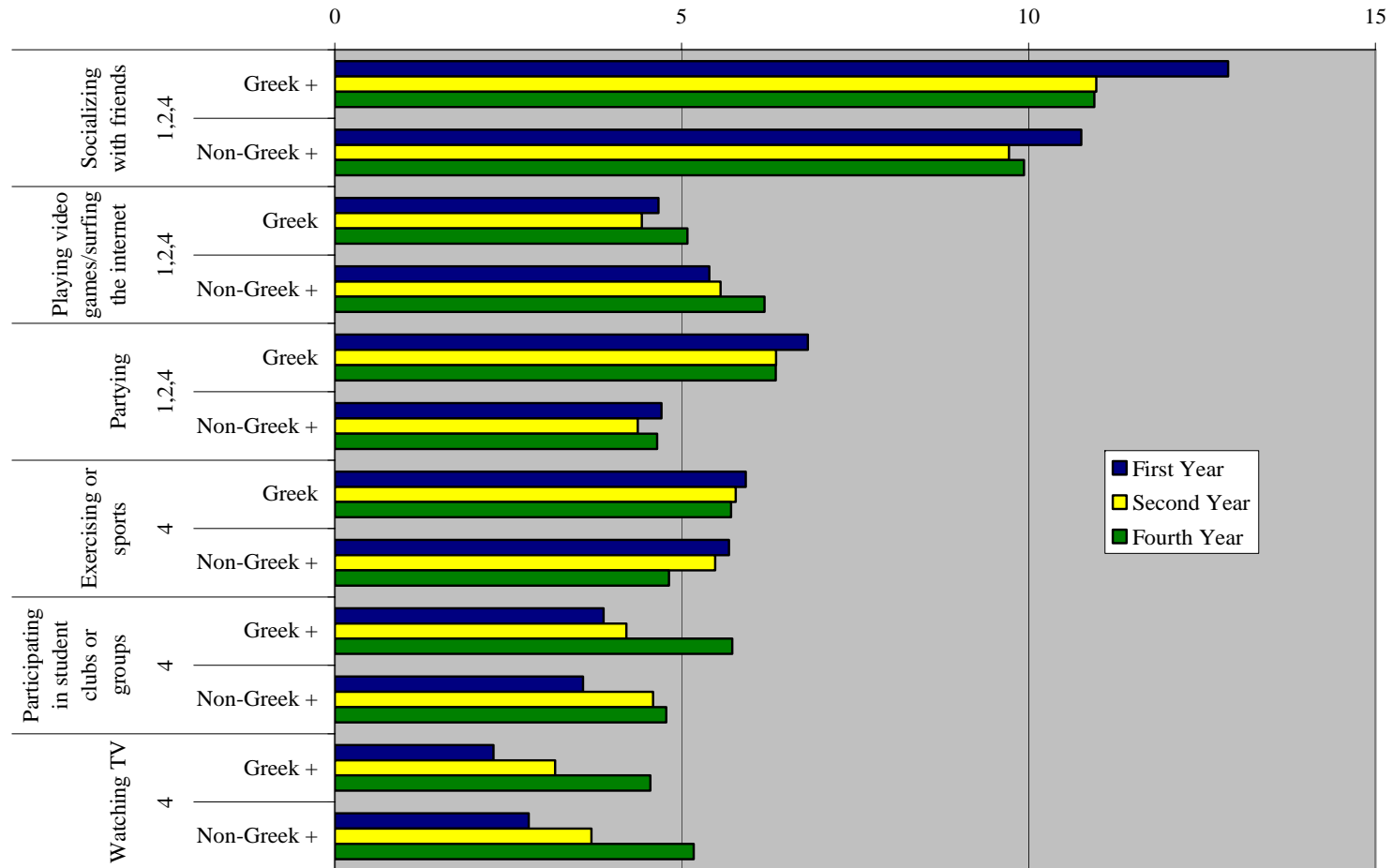
* For students who report any participation in the activity. Statistically significant differences are noted as follows: + denotes significant ($p < .05$) within-group difference, first to fourth year; significant between-group differences ($p < .05$) are denoted with a numeral for the survey wave (1, 2, and 4).

Figure 3.4. Hours Spent in a Typical Week in Selected Activities, by Racial Ethnic Group, First to Fourth Year*



* For students who report any participation in the activity. Statistically significant differences are noted as follows: + denotes significant ($p < .05$) within-group difference, first to fourth year; significant between-group differences ($p < .05$) are denoted with a numeral for the survey wave (1, 2, and 4).

Figure 3.5. Hours Spent in a Typical Week in Selected Activities, by Greek Membership, First to Fourth Year*



* For students who report any participation in the activity. Statistically significant differences are noted as follows: + denotes significant ($p < .05$) within-group difference, first to fourth year; significant between-group differences ($p < .05$) are denoted with a numeral for the survey wave (1, 2, and 4).

spending more time participating in student clubs or groups compared with non-Greek students (about 5.7 hours/week versus about 4.8 hours/week).

Taken as a whole, perhaps the most surprising finding from the time use data was the relatively modest amount of time Duke undergraduates spent at “academic” activities, defined as the combination of attending classes and labs, and studying and doing homework. If we combine those two categories, first year Duke students spent 24.4 hours per week on academic activities, second year students spent 23.4 hours per week on average on academic activities, and seniors spent 20.2 hours on academic activities. Recall, our specific measures (see note 3) may slightly underestimate this figure but probably not by a large amount. This is equivalent to a part-time job versus full-time employment.

Recent unpublished research by economists Philip Babcock and Mindy Marks (2007) places the Duke findings in broader comparative relief of other institutions nationally, and of historical changes in college students’ use of time. Babcock and Marks carefully parsed time-use data from six different waves of data from four different datasets that were gathered between 1961 and 2004 (the junior year for CLL’s oldest cohort; the sophomore year for the younger cohort). In our judgment, the researchers made careful adjustments and comparisons for sampling design and measurement differences between the studies and waves. They found large and continuous declines in academic time use (as defined above) over the roughly half century period. Full-time college students in the United States in 1961 reported spending about 40 hours per week in class and studying; by 2004, full-time college students spent between 23 and 26 hours per week in class and studying. Indeed, the student part of being in college appears to have shrunk from a full-time to a part-time job. The CLL measures and response scales are similar but not identical to those in a number of the studies used by Babcock and Marks.

However, the time-use data reported here do not make adjustments for full- versus part-time student status, although a very small percentage of our sample members were part-time Duke students.⁵ In short, our data are fairly comparable to what Babcock and Marks are suggesting is the case for the nation in 2004.

But how about Duke students in 1961? Were Duke students then similar to their national counterparts? Professor Babcock kindly provided us with information on Duke first-year students who were included in the Project Talent Study (a national sample taken in 1961).⁶ The average Duke first-year student reported studying 32.8 hours per week in 1961. Compare this average with our CLL respondents who reported studying 10.8 hours per week in their first college year (2001-02 and 2002-03 respectively for the first and second cohorts), a decline of 22 hours of study time per week over the past 40 years. Project Talent did not include class time data for 1961. Assuming Duke students attended class at least as much time as the average college student in 1981 (15.8 hrs/week based upon data from other of the studies) produces an estimated average of 48.6 hours of academic time investment for Duke first-year students in 1961. Comparing this estimate with the CLL figure of 24.4 hours per week on average in the 2001-2003 time period, we find a decline of 24.2 hours per week on academic activities. This is a substantial, indeed amazing, change.

⁵ In data not reported here we found that science/mathematics and engineering majors spent considerably more time (several hours per week on average) in classes and in labs. There were no statistically significant differences in hours spent studying and doing homework by major group (science/mathematics, engineering, humanities, social sciences). Students for each major group cut their class and lab time and increased their study hours over the college career.

⁶ Personal communication from Professor Philip Babcock, Department of Economics, University of California at Santa Barbara, May 15, 2007. We are grateful to Professor Babcock for his assistance, and to our colleague Charles Clotfelter for bringing the Babcock and Marks study to our attention.

Perceptions of Ability Compared with Peers

In every survey year, we asked students how smart they judged themselves relative to the average Duke student. Figure 3.6 reports the changes from pre-college to the senior year by racial ethnic group and gender. Each racial ethnic and gender group saw themselves as smart as average or above in almost every survey wave. Members of all racial ethnic groups, except Asian students, judged themselves as progressively smarter over the college career. Some groups, White, Asian, Latino and Bi-Multiracial, reported a drop in perceived smartness from pre-college to first year (but then successive growth in perceived smartness); Asian students reported a similar drop between the first and second college years, and then rebound by the senior year. At each survey wave, males reported they were smarter than the average Duke student compared with females' responses. This is the case even though, as we shall see in the next section, in every college year except the first, females record higher college grades in each semester than males.

Academic Achievement

One of the key objectives of the Campus Life and Learning Project is to map the academic achievement, as measured by grades, for different demographic groups, to understand their dynamics over time, and to understand reasons for any differentials in achievement by different groups. Figure 3.7 reports a full profile of semester-by-semester grades by racial ethnic group. Note the figures refer to grades earned in the semester in question and not to overall cumulative grade point average. Further, the information is taken from institutional records and not from respondent self-reports. Several patterns are apparent in the data. First, Duke student

Figure 3.6. Student Perceptions of Ability, Pre-College to Fourth Year

College Years: “How smart do you think you are compared to the average Duke student?”

Pre-College: “Compared to other students in your last challenging Math class, would you say you are:”

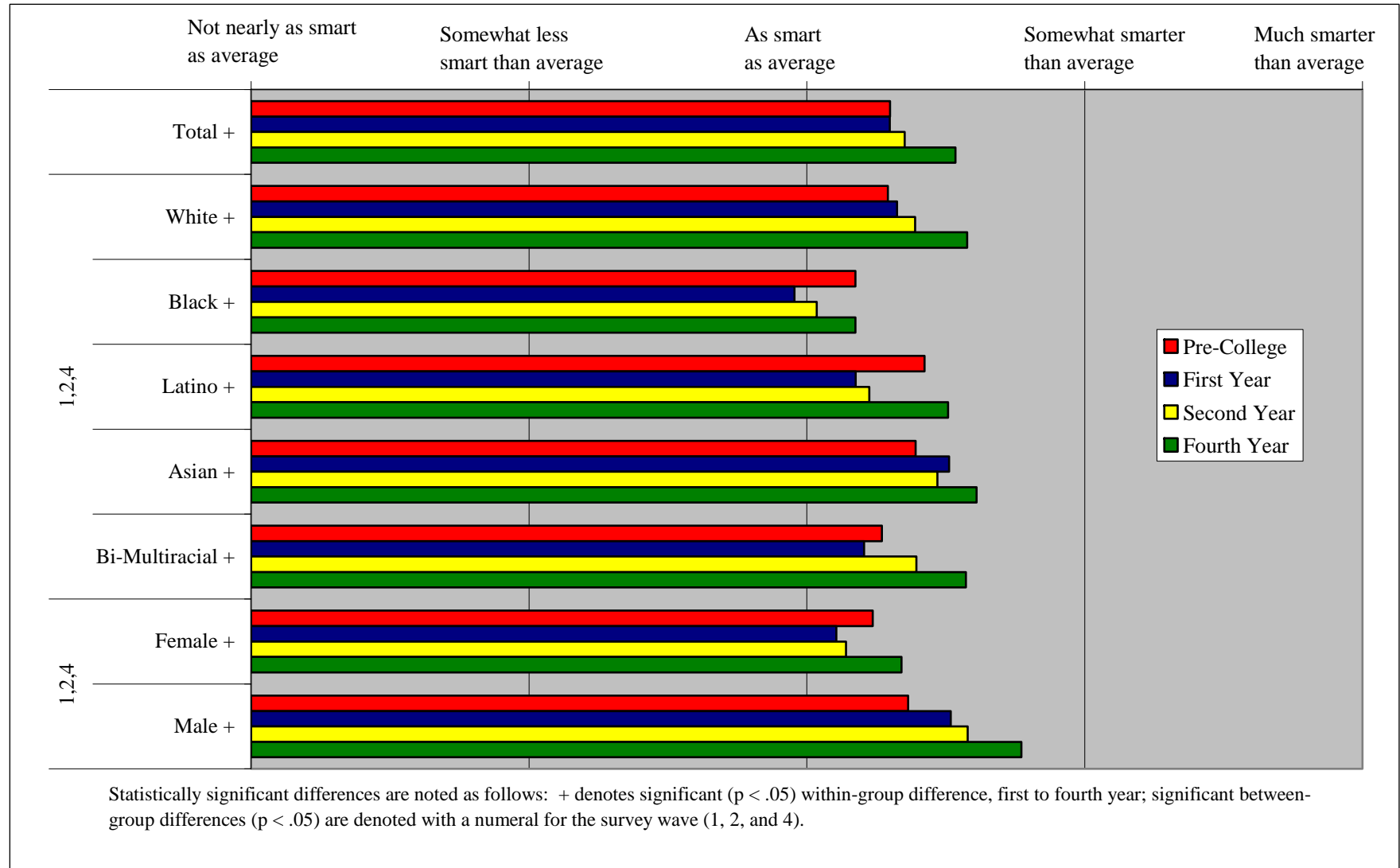
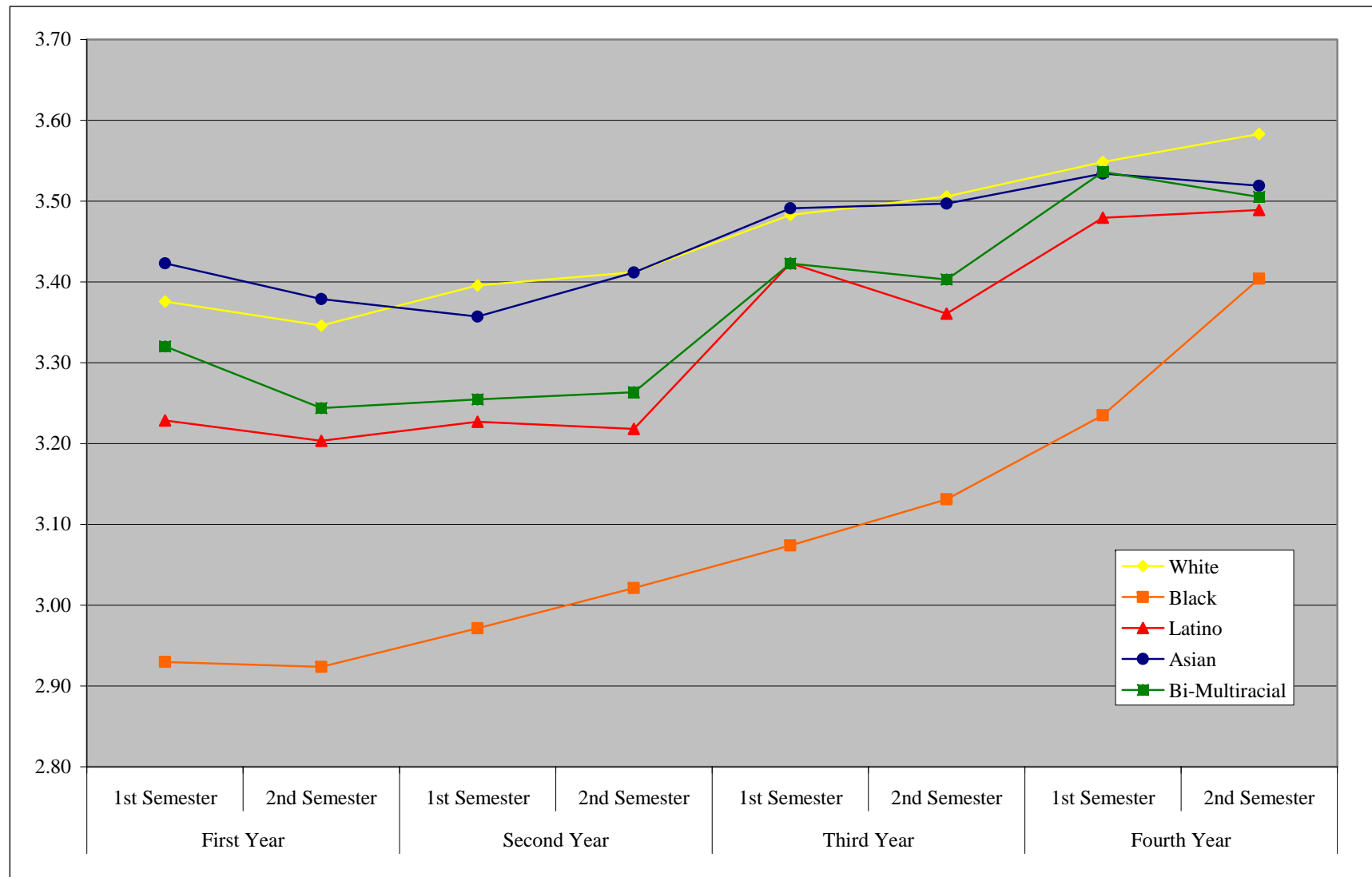


Figure 3.7. Semester Grade Point Averages, by Racial Ethnic Group



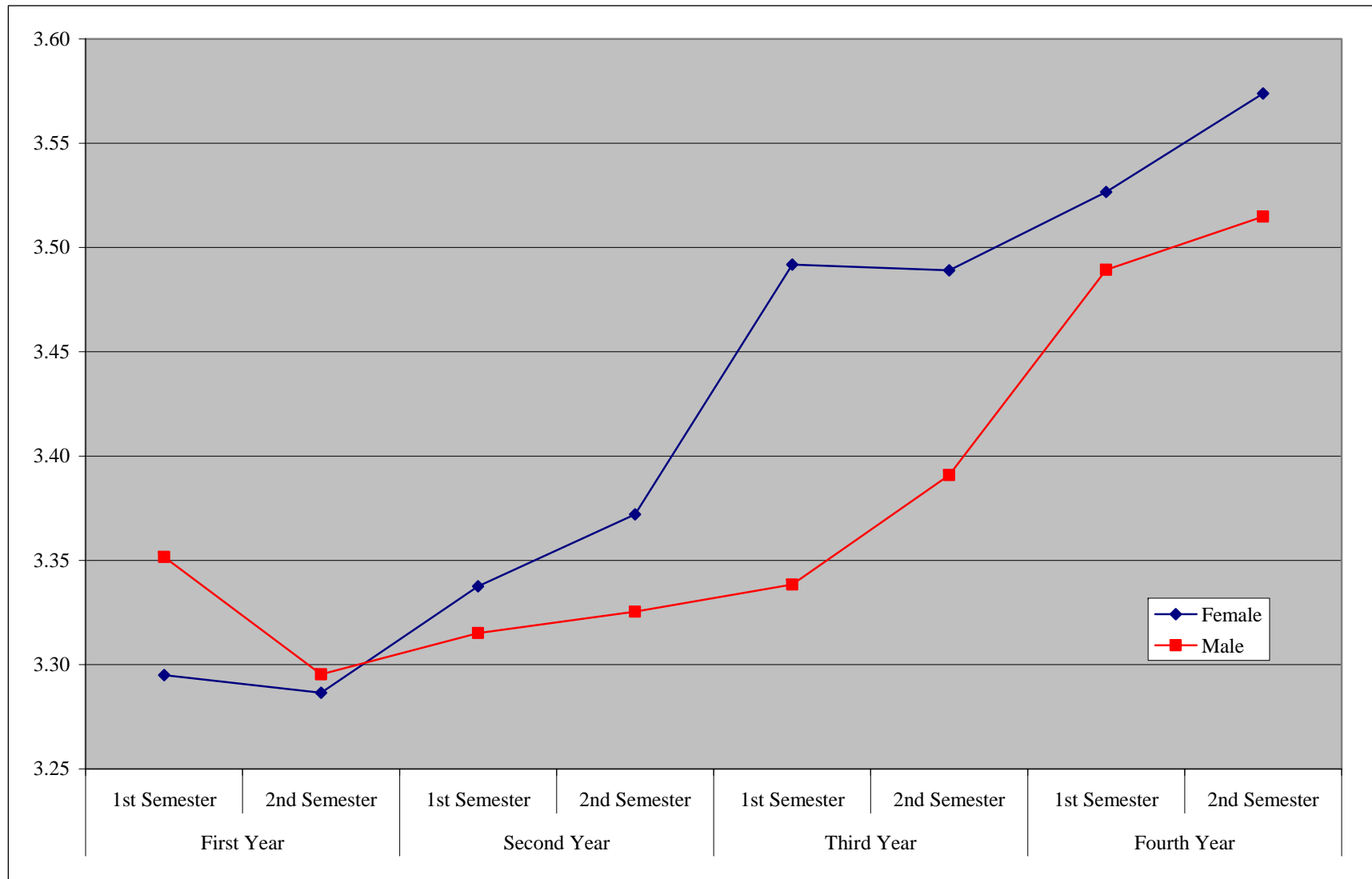
achievement replicates well-known national differences in college grades (Bowen and Bok 1999; Massey et al. 2003). In the first college year, Asian and White students score from one-tenth to two-tenths of a letter grade higher than Bi-Multiracial and Latino students, and four-to-five tenths of a letter grade higher compared with Black students.

Second, racial ethnic differences in grades are at their maximum in the first college year, and the gaps narrow progressively over the remainder of the college career. The decline in the gap is quite dramatic. For example, by second semester of the senior year, the achievement gap between Black and White students has narrowed from .45 of one letter grade to .18 of a letter grade, a reduction of 60 percent. Gaps between other groups have also narrowed and were less in the senior year compared to the first and second college years.

Third, most of the narrowing of the gap occurs in the second and third college years, a time when students have settled into college majors, minors, and certificate programs, and students' experiences with large classes have largely ended. It is important to remember that these figures are unadjusted for test scores, social and pre-college academic background, and college major(s). Further, we have not adjusted for differential attrition from college by students of different racial ethnic groups. Some of our later comparisons address these possibly confounding factors, and our scholarly research will address them in great detail.

Figure 3.8 presents the corresponding semester grade point averages over the college career by gender. Men outperform women in the first college semester by a small margin. The two groups are statistically even in the second college semester, and women outperform men over the remainder of the college career by very small (a few hundredths of a letter grade) to more modest differences (about one-seventh of a letter grade first semester of the junior year). The most marked change in Figure 3.8 is the steady increase in college grades after the first college

Figure 3.8. Semester Grade Point Averages, by Gender

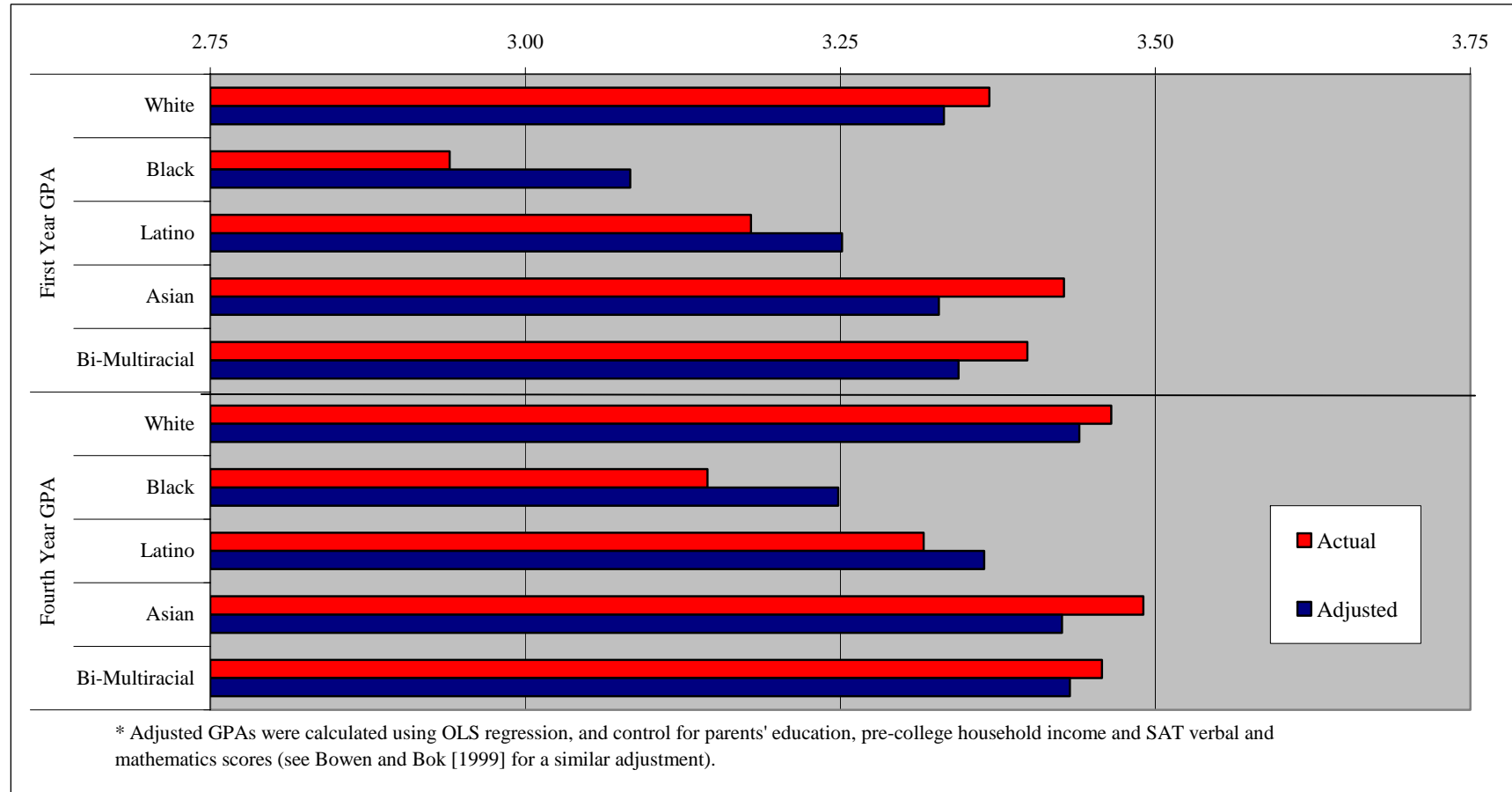


year, from about a 3.30 semester GPA (non-cumulative) at the end of the first year to more than 3.5 by the end of the senior year. A number of factors are likely explanations, including smaller class sizes, settling into college majors, selective attrition of low scorers, learning how to do college academics and negotiate the course/instructional system, and perhaps even strategic selection of courses that students take.

In a final set of comparisons on academic achievement, we make an initial set of adjustments for social and academic background. Figure 3.9 shows actual and adjusted cumulative grade point averages for the end of the first and fourth college years by racial ethnic group. The adjustments come from simple regression equations that include measures for parents' education levels, pre-college household income (senior year in high school), and SAT verbal and mathematics scores; these measures were taken from admission files and the pre-college survey. These initial adjustments help us understand the gap in several ways. We focus on the gap between Black and White students as that has received the most attention in the policy and research fora. First, the gross gap between White and Black first-year grades is .428, and the gap after adjusting for social background and test scores is .249. The difference (.179) suggests that 42 percent of the actual grade gap in the first year appears to be associated with differences in social background and test scores. In other words, a little less than half of the Black-White gap is due to pre-college factors. A little more than half of the gap appears to be due to in-college processes.

Second, by the end of the senior year, the actual gap in cumulative GPA (not semester-by-semester GPA) had shrunk to .32, and the adjusted gap had shrunk (from .249) to .192. By senior year, the portion of the gap attributable to pre-college factors had declined slightly to 40 percent of the Black-White gap. More importantly, the smaller difference between the actual and

Figure 3.9. Actual and Adjusted Cumulative Grade Point Averages, by Racial Ethnic Group, First and Fourth Year



adjusted gaps in the senior compared with the first college year suggests that some in-college processes are at work in the “gap shrinkage” between Black and White students. This equation does not tell us what those processes are; they could be individual level (for example, differential adjustment to college), group level (for example, a larger majority of Black students are female, and we know from the previous figure that women outperform men over most of the college career), or system level (for example, various support services operate and are effective, or the undergraduate instructional system does a better job in the upper-class years in educating students from all racial and ethnic groups compared with the first college year). Deciphering which mixture of forces is at work is beyond the scope of this report. We will be pursuing these in our future scholarly work.

Summary

Our portrait of the academic college career of the Classes of 2005 and 2006 shows a number of prominent features. The most striking feature of time use was the relatively modest amounts of time spent on academic activities (classes, labs, studying, and homework), by our estimates, 20-24 hours per week, the equivalent of a part-time job. We report on national data that shows a dramatic decline in the time spent by college students on academic activities: from over 40 hours per week in the early 1960’s to 23-26 hours per week by just after the new millennium. Duke students appear to be fully part of this larger trend.

Class time decreased over the college years for the Duke sample while study time increased. Other activities increased in time use over the college career, including working for pay, playing video games/surfing the Internet (non-existent in the 1960’s), participating in student clubs or groups, and watching TV. One obvious policy question is whether the

pendulum of academic time use has swung too far in the direction of underinvestment in academic matters. Should some of the time that used to be spent in academic time use be reclaimed by academic endeavors? What are the consequences of this shift for individuals, their careers, higher education and the national economy?

In a comparison reminiscent of the fictitious Lake Wobegon in Minnesota, the vast portion of Duke students rate themselves as smart as or smarter than the average Duke student. Further, male students rate themselves as significantly smarter relative to the average Duke student compared with females, even though we later find that Duke women out-perform Duke men in terms of grades over most of the college career.

In one of the more important findings, student grades converged by racial ethnic group over the college career. For example, the achievement gap between Black and White students was nearly one-half of a letter grade in the first college year but had shrunk to less than two tenths of a letter grade by the senior year, a reduction of some 60 percent. One of the key challenges for our future work is to determine the mixture of specific processes that are generating the shrinkage of the gap. More refined policy prescriptions are likely to come from such analyses.

4. Classroom and University Climate

Classroom Environment

We asked Duke students to evaluate their classroom environments on eight different dimensions, ranging from feeling respected in class, to class size, to an instructor or students making prejudiced comments, to feeling like they did not fit in. Figure 4.1 provides summary data from these measures. The response scale ranged from “never” to “rarely” to “sometimes,” “often” and “always.” Four out of eight items average between “never” and “rarely” in their occurrence for the first, second and fourth years. Only one item occurred in the region of “sometimes” in the response scale: class size made it difficult to ask questions. This was more so in the second than in the first year, with the fourth year similar to the first.

In the first Report we found a trend in the direction of a less comfortable classroom environment between the first and second college years. This trend did not continue in the fourth-year survey. Feelings of safety to ask questions or express opinions increased significantly from the first and second to the fourth college year. Instructors or other students making prejudiced comments increased significantly over the college career, but it still remains between “never” and “rarely.” Selected indicators of classroom environments show a mix of gender and racial ethnic differences, as shown in Figures 4.2 and 4.3. Women report a greater frequency of instructors or students making prejudiced comments. Interestingly, this is the only item for which men and women note an increase across years. Other indicators generally show a more welcoming classroom environment over the college career. Women also report increases in being ignored, although again in both instances respondents characterized these experiences as occurring never to rarely.

Figure 4.1. Classroom Experiences, First to Fourth Year

“To what extent do the following generally characterize the classroom environment you have experienced at Duke?”

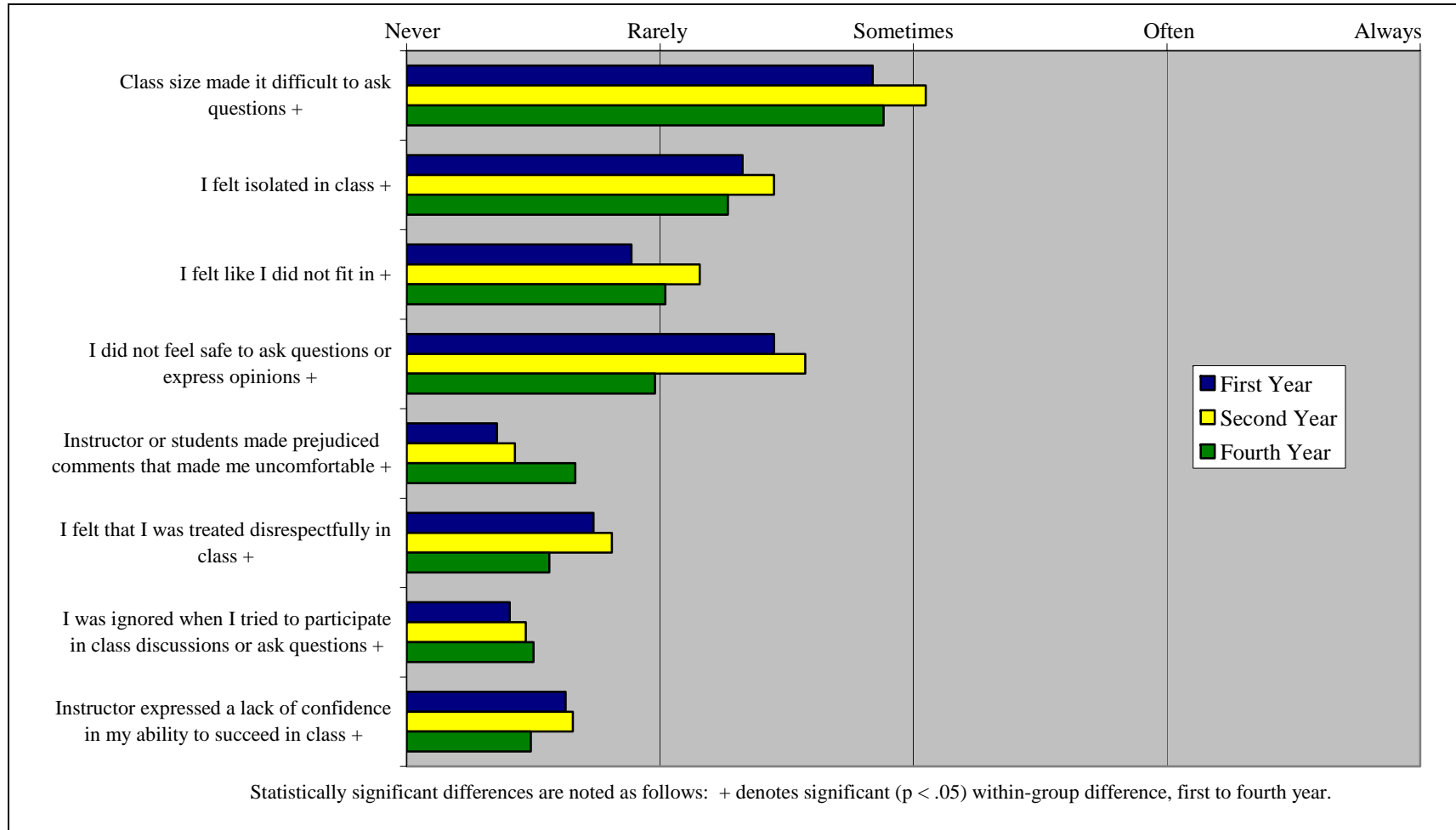


Figure 4.2. Classroom Experiences, by Gender, First to Fourth Year

“To what extent do the following generally characterize the classroom environment you have experienced at Duke?”

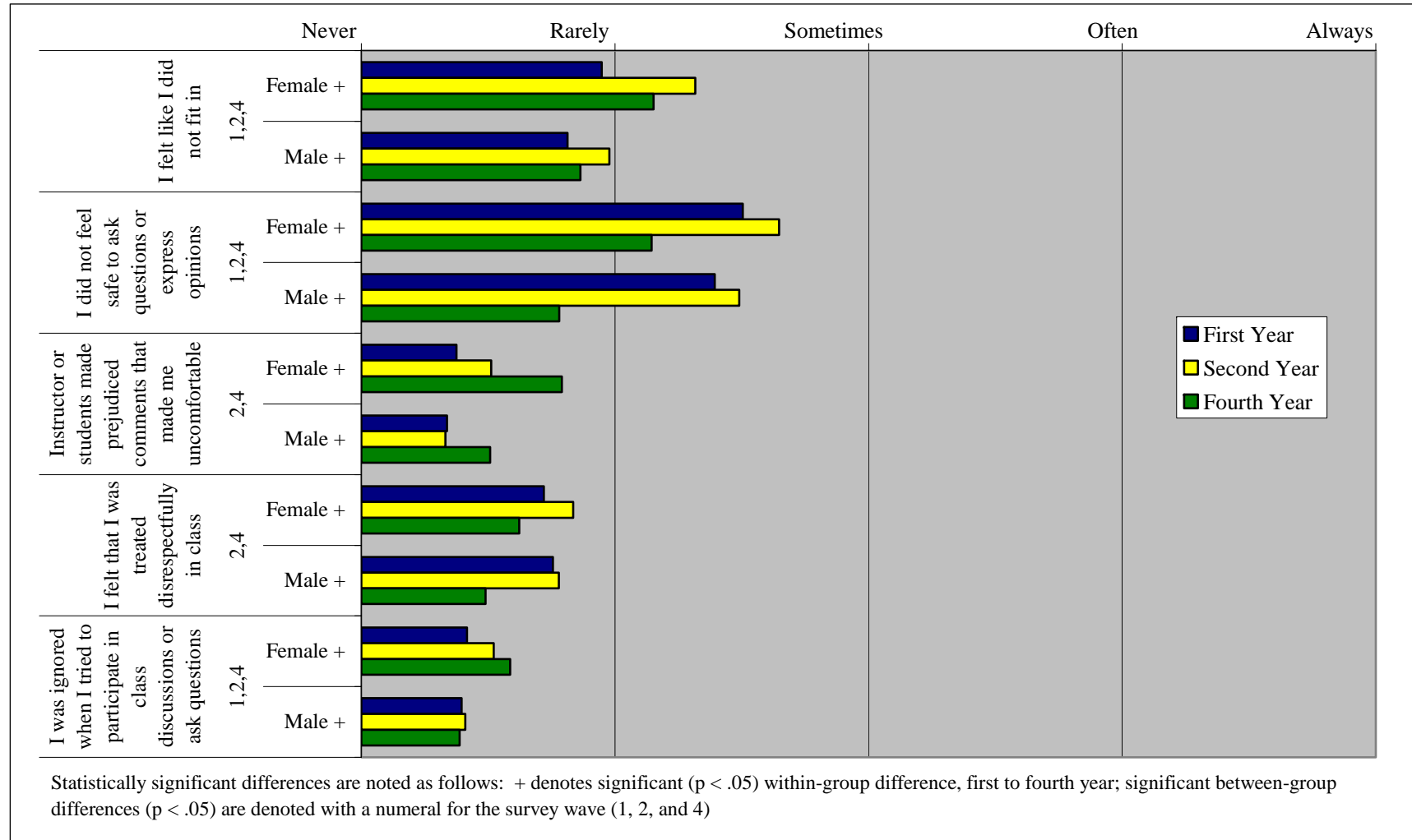
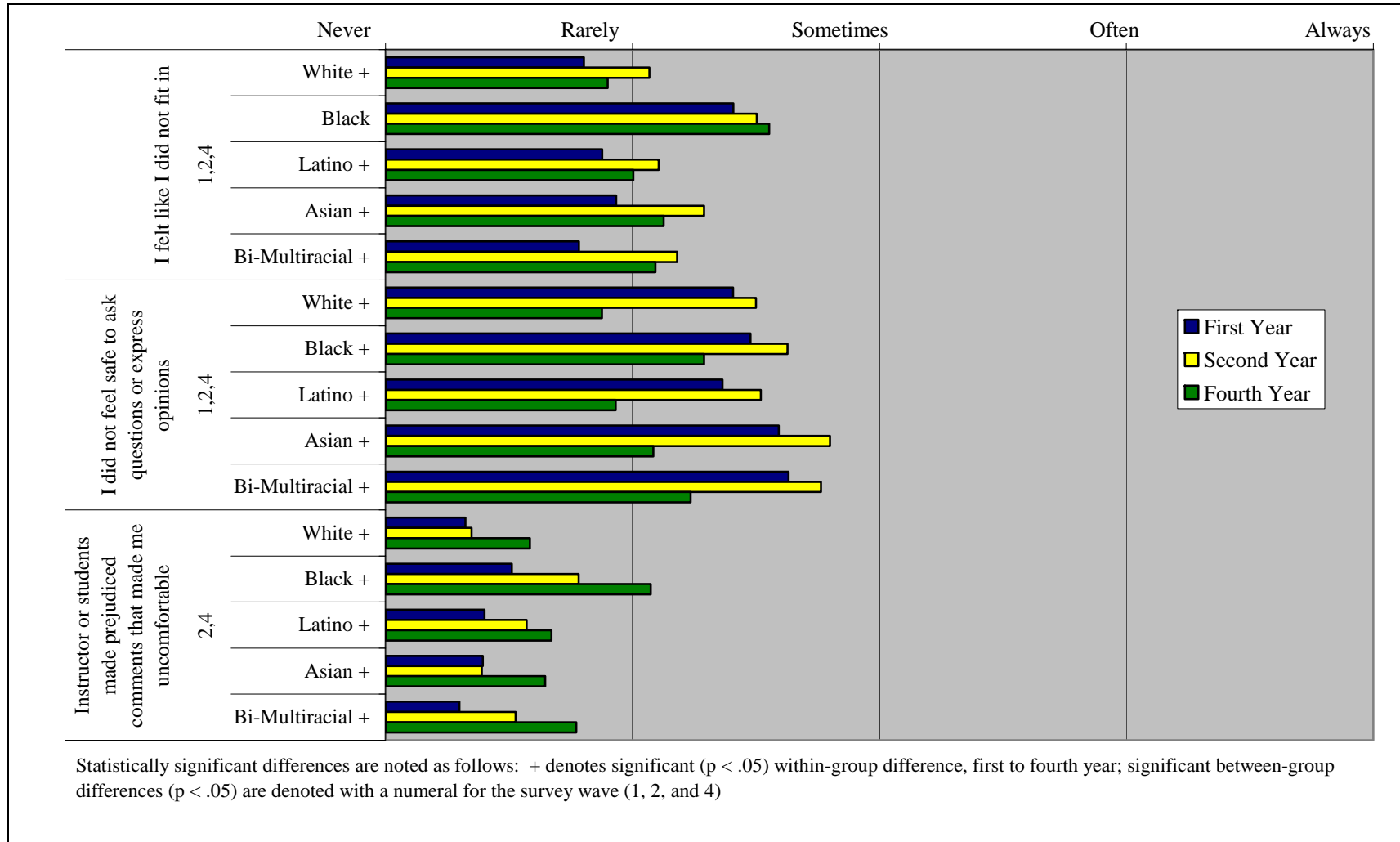


Figure 4.3. Classroom Experiences, by Racial Ethnic Group, First to Fourth Year

“To what extent do the following generally characterize the classroom environment you have experienced at Duke?”



An interesting finding emerges when viewing classroom environment across racial ethnic groups. Students in every racial ethnic group report a significant increase in instructors or students making prejudiced comments that make respondents feel uncomfortable. The other key indicators of the classroom environment (“I feel like I did not fit in” and “I did not feel safe to ask questions or express opinions”) showed a more welcoming classroom environment for every racial ethnic group with one exception. For the “fit in” indicator for Black students, there was not a statistically significant difference over time.

Figure 4.4 offers another indicator of climate, student perceptions of stereotyping by instructors. Being treated as a representative of a demographic group (racial/ethnic, gender, religious, social class, and so on) occurs rarely for all groups except Black respondents who reported occurrences between “rarely” and “sometimes.” Bi-Multiracial students, men, and members the 1st cohort (Class of 2005) did not report increased stereotyping from the first year to senior year, while other groups of respondents did report an increase over the college years.

Experiences of Discrimination

Other items more directly assess student reports of discrimination in the classroom and other on-campus locations. We ask respondents targeted questions about being treated badly by instructors and experiencing discrimination on the basis of several demographic characteristics (see Figure 4.5). Less than 10 percent of Duke students feel they were treated badly because of their English-language proficiency, sexual orientation, religion, social class, race or ethnicity. There are two exceptions. First, 10-13 percent of students in the Class of 2006 feel they were

Figure 4.4. Perceptions of Instructors, First to Fourth Year

“In the past year, how often have you felt that Duke instructors thought of you more as a representative of a group than as an individual person?”

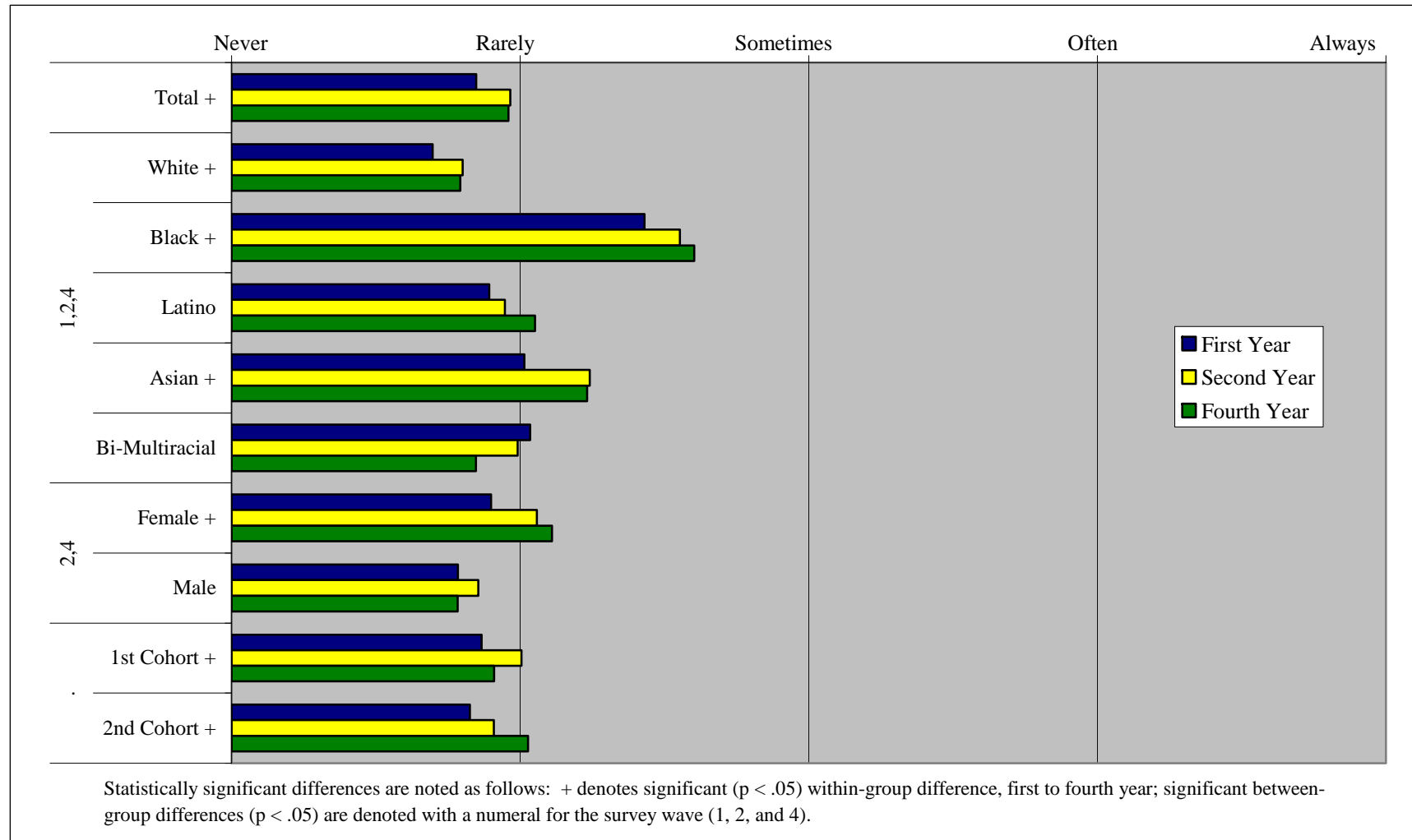
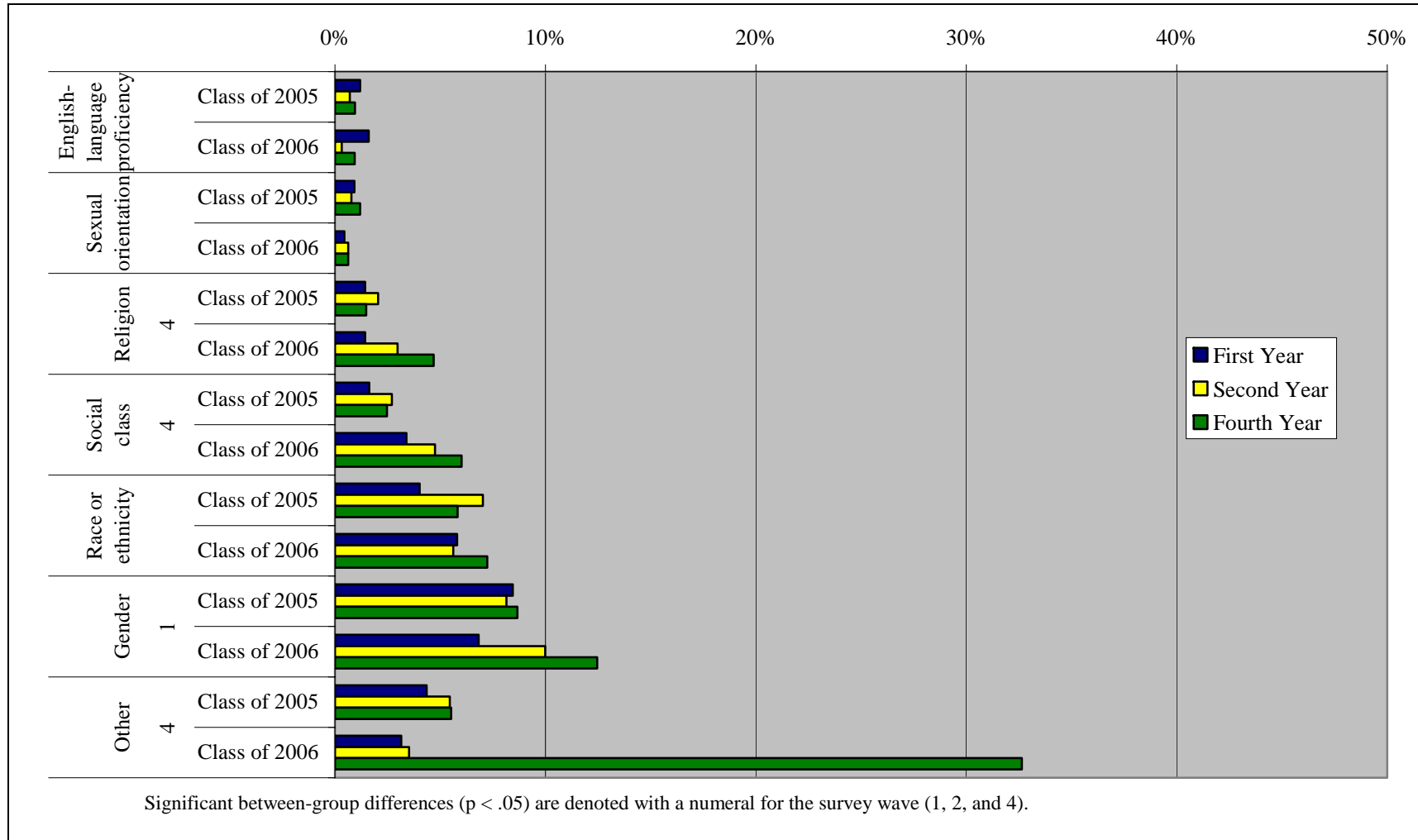


Figure 4.5. Experiences with Discrimination, by Class Graduation Year, First to Fourth Year

“In the past year, have you felt that Duke instructors treated you badly because of your (select all that apply):”



treated badly by instructors because of their gender in a trend of increasing perceived discrimination over the college years, a pattern not replicated by the Class of 2005. Second, and quite dramatic, one-third of the Class of 2006 feel they were treated badly by instructors for “other” reasons. We suspect that this effect is related at least in part to the so-called Duke lacrosse crisis. We were in the field with the 2006 senior survey during the spring. The news story broke in late March, and we estimate that about half of the respondents had not returned surveys and hence might have factored in events related to the lacrosse crisis into their judgments. The contrast with other issues and cohort ratings is quite striking, as were the events at the time in terms of their divisiveness and publicity.

Figure 4.6 reports perceived discrimination on the basis of one’s gender or racial ethnic group, by gender and racial ethnic groups respectively. Feelings of bad treatment because of gender are twice as high for women as for men, and for women, nearly double from the first to the fourth year (from about eight percent to nearly 15 percent). We are unsure what is driving this rather substantial increase over the college career. Perceptions of bad treatment by instructors because of race or ethnicity increase among Black students from 17 percent in the first year to 21 percent by the senior year. Asian students also report significant increases, from 10 percent in the first year to about 17 percent in the senior year.

When we ask a broader question about experiencing discrimination by faculty/staff, students or other members of the university community, from 37 percent (first year) to about 47 percent (fourth year) report discrimination in the past year (see Figure 4.7). Non-White students and women report higher levels of feeling discriminated against in each successive wave over the college career. As we reported in the first Report, this is an instance where Duke’s aspirations

Figure 4.6. Experiences with Discrimination, by Gender and Racial Ethnic Group, First to Fourth Year
 “In the past year, have you felt that Duke instructors treated you badly because of your:”

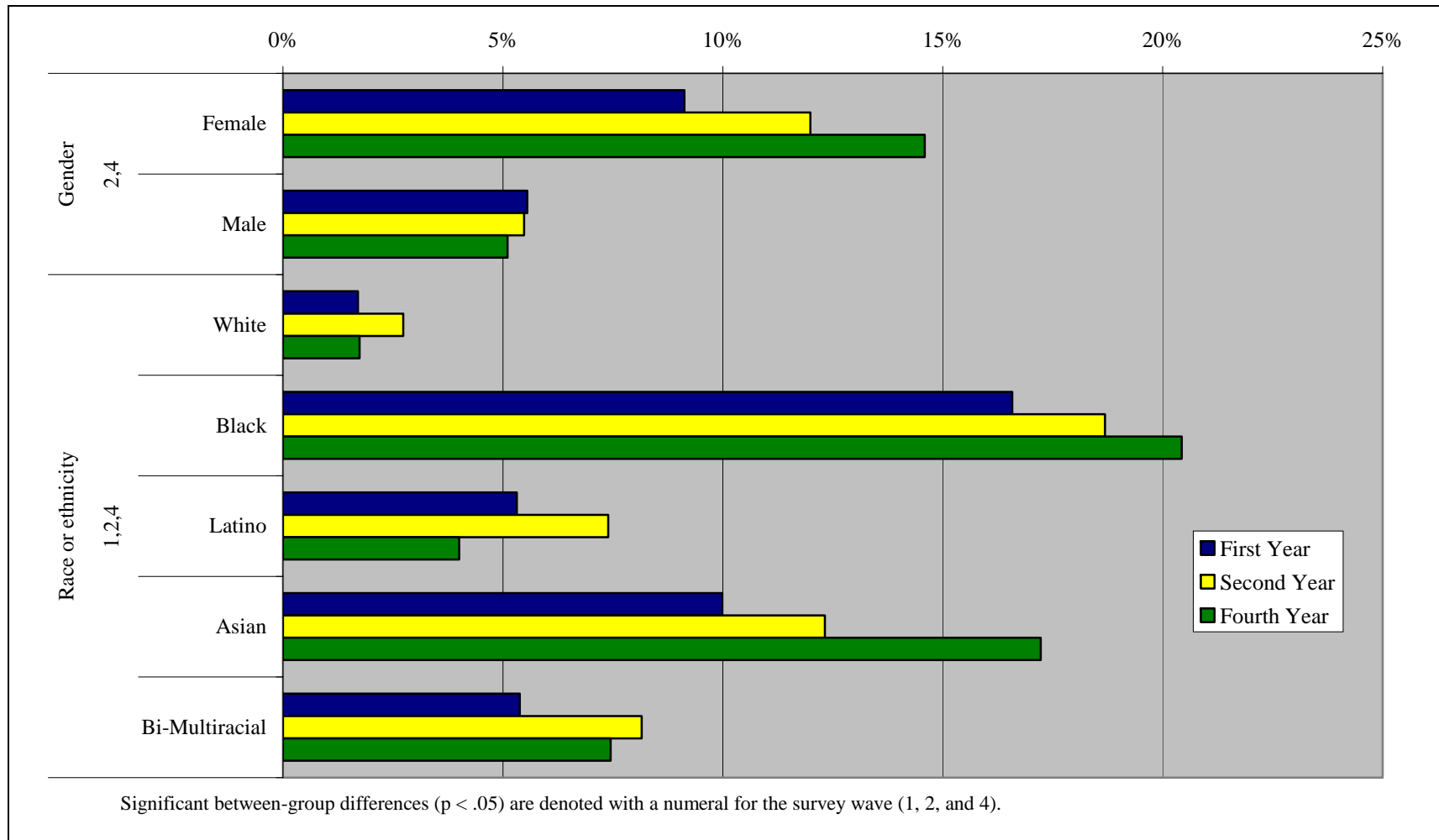
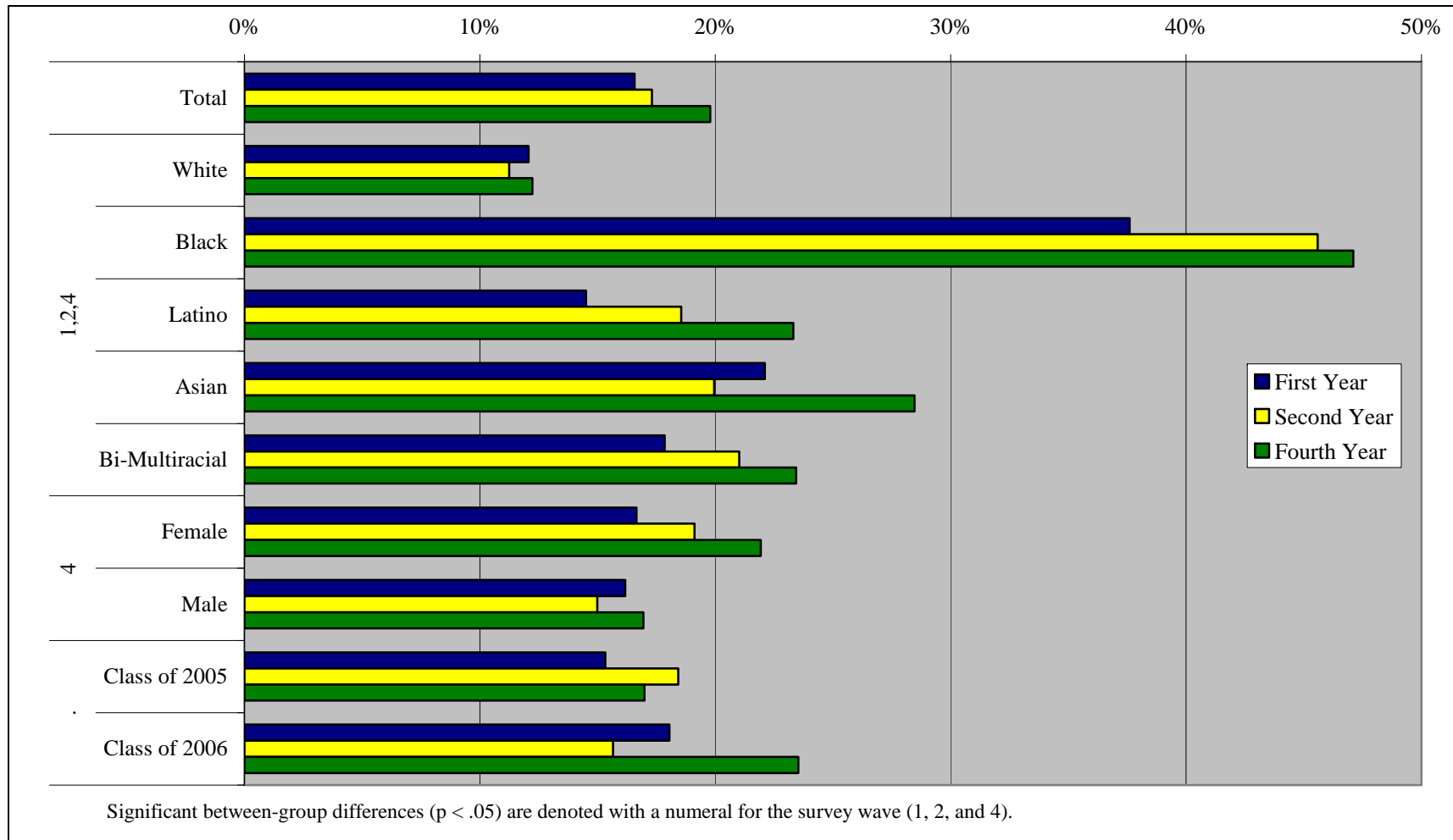


Figure 4.7. Experiences with Discrimination, First to Fourth Year

“In the past year, have you felt that you were discriminated against by faculty/staff, students or other members of the university community?”



are at clear variance with the reports of its students, and in a number of instances, increasingly so over the college career.

Interestingly, nearly 25 percent of the class of 2006 reports discrimination in the spring of 2006 (the temporal referent in the question was: “In the last year”). Again we hypothesize that this variant is related to the lacrosse crisis.

Summary

Various indicators of classroom environments generally suggest Duke’s undergraduate classroom environments are welcoming and not hostile, with the most problematic indicators being in the range of “rarely.” The single exception in all college waves was class size reportedly making it difficult to ask questions. Among six additional indicators, students generally report that they fit in, are treated respectfully, and are able to participate in class. The only exception was that some students report feeling unsafe to ask questions or express opinions, with the typical student scoring in the “rarely” to “sometimes” range.

Selected indicators of campus climate show a mix of racial ethnic and temporal differences. Generally, non-White students, especially Black students, report more negative climate experiences. When we ask a broader question about experiencing discrimination by members of the university community, we find that experiences with discrimination are more prevalent for many student groups.

5. Social Life and Relationships

In this section, we examine several aspects of students' social life at Duke, including the racial ethnic diversity of students' social networks, romantic relationships, and the role of alcohol and drugs to campus social events.

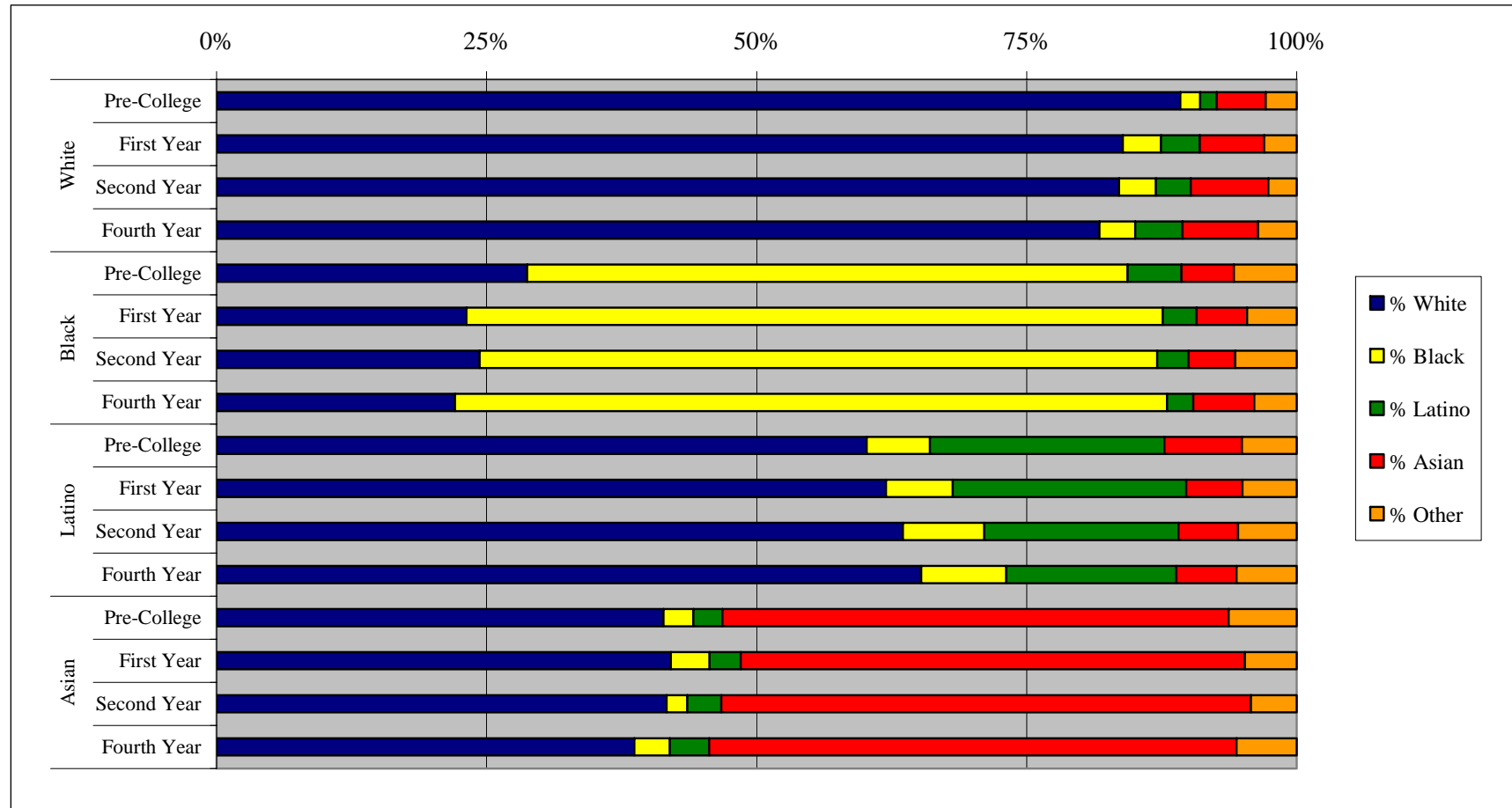
Friendship Network Diversity

Two sets of comparisons explore how the diversity of students' social networks changes across the college years. A first survey item, included in all four survey waves, asks students to list basic demographic characteristics for their closest friends.⁷ Figure 5.1 illustrates the racial ethnic diversity of students' closest-friends networks, by racial ethnic group, from the senior year in high school through the fourth year at Duke.

From high school through the college years, the racial ethnic diversity of students' closest-friends networks is remarkably stable. About 90 percent of White students' closest friends were also White in the senior year of high school, and their friendship networks become only slightly more diverse throughout the college years. Nearly 84 percent of White students' closest friends were also White in the first and second years, and about 82 percent were also White in the fourth college year. Conversely, less than two percent of White students' closest friends were Black in the senior year of high school, increasing to between three and four percent throughout the college years. The closest-friends networks of Latino students also become marginally more diverse at Duke. About 22 percent of Latino students' closest friends were also Latino in the pre-college and first college year, declining to about 16 percent by the fourth

⁷ For the pre-college survey, respondents could list up to five closest friends. For the first, second and fourth year survey, students could list up to eight closest friends.

Figure 5.1. Racial Ethnic Composition of Students' Closest Friends
Percent from Each Racial Ethnic Group, Pre-College to Fourth Year



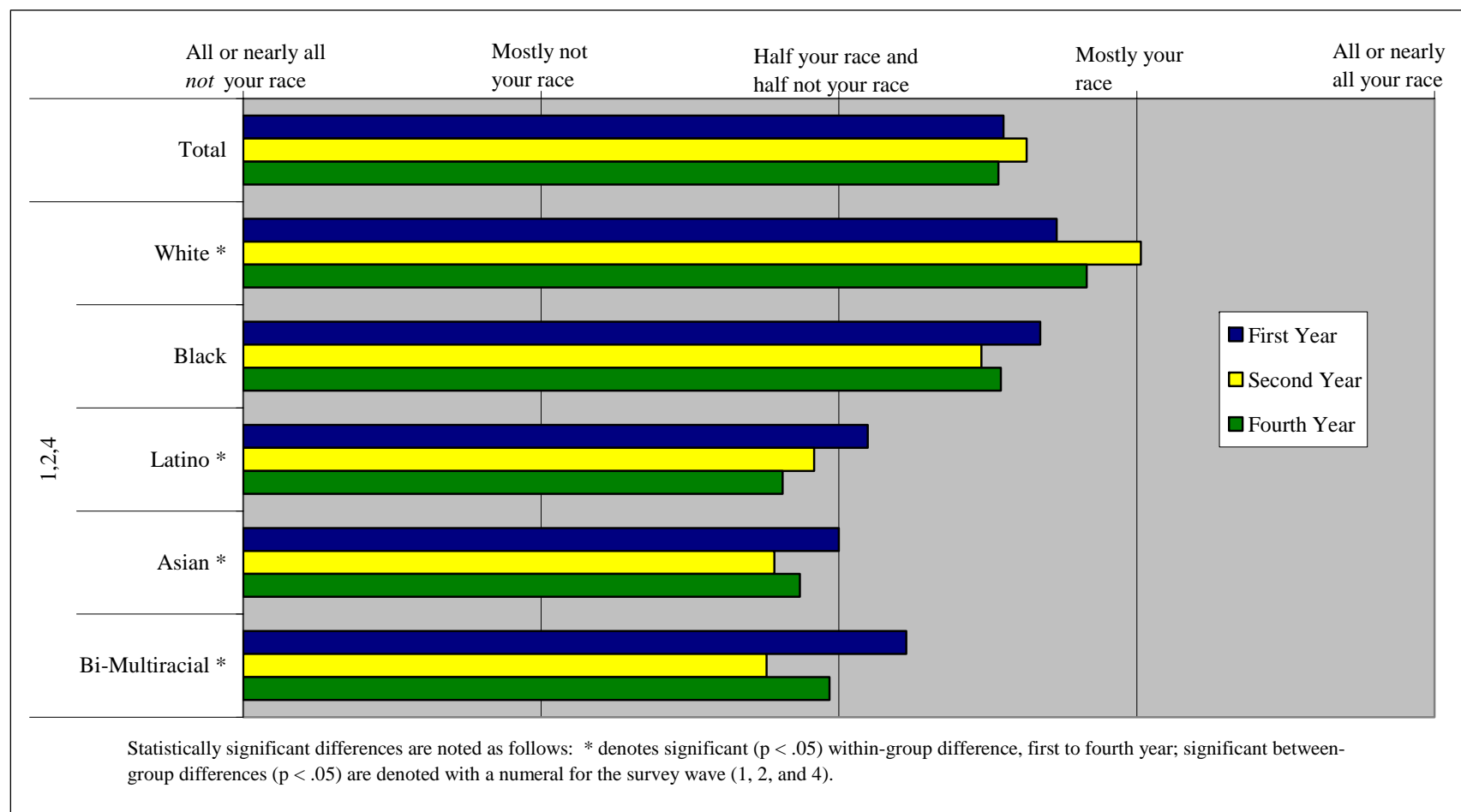
college year, while the proportion of closest friends who were White or Black increases slightly across the college years.

For Black and Asian students, closest-friends networks become slightly less diverse across the survey waves. In the senior year of high school, about 56 percent of Black students' closest friends were also Black, and this figure increases to more than 64 percent in the first college year and to about two-thirds by the fourth college year. The proportion of Black students' closest friends who were White declines from about 29 percent in the senior year of high school to about 22 percent in the fourth college year. For Asian students, less than 47 percent of their closest friends were also Asian during high school and the first college year, compared to about 49 percent in the second and fourth college years. In general, Asian and Latino students' closest-friends networks are more diverse than White and Black students, although all groups demonstrate considerable stability in the diversity of their social networks across the college years.

A second survey item expands the size of students' social networks to include all friends at Duke. For each college year, students were asked to describe the racial ethnic background of their friends at Duke through one of five categories, ranging from "all or nearly all not your race" to "all or nearly all your race" (see Figure 5.2). Overall, the pattern of responses is consistent with those for students' closest-friends networks. While the racial ethnic composition of students' friends at Duke is rather stable across the college years, these broader social networks can be considered to be slightly more diverse than the closest-friends networks.

For Black, Latino, Asian and Bi-Multiracial students, the proportion of friends of the same race or ethnicity declines across the college years. While all groups experience significant changes in the racial ethnic diversity of their friends at Duke, only Latino students show a

Figure 5.2. Race and Ethnicity of Students' Friends at Duke, First to Fourth Year
 "Which of the following best describes your friends at Duke?"



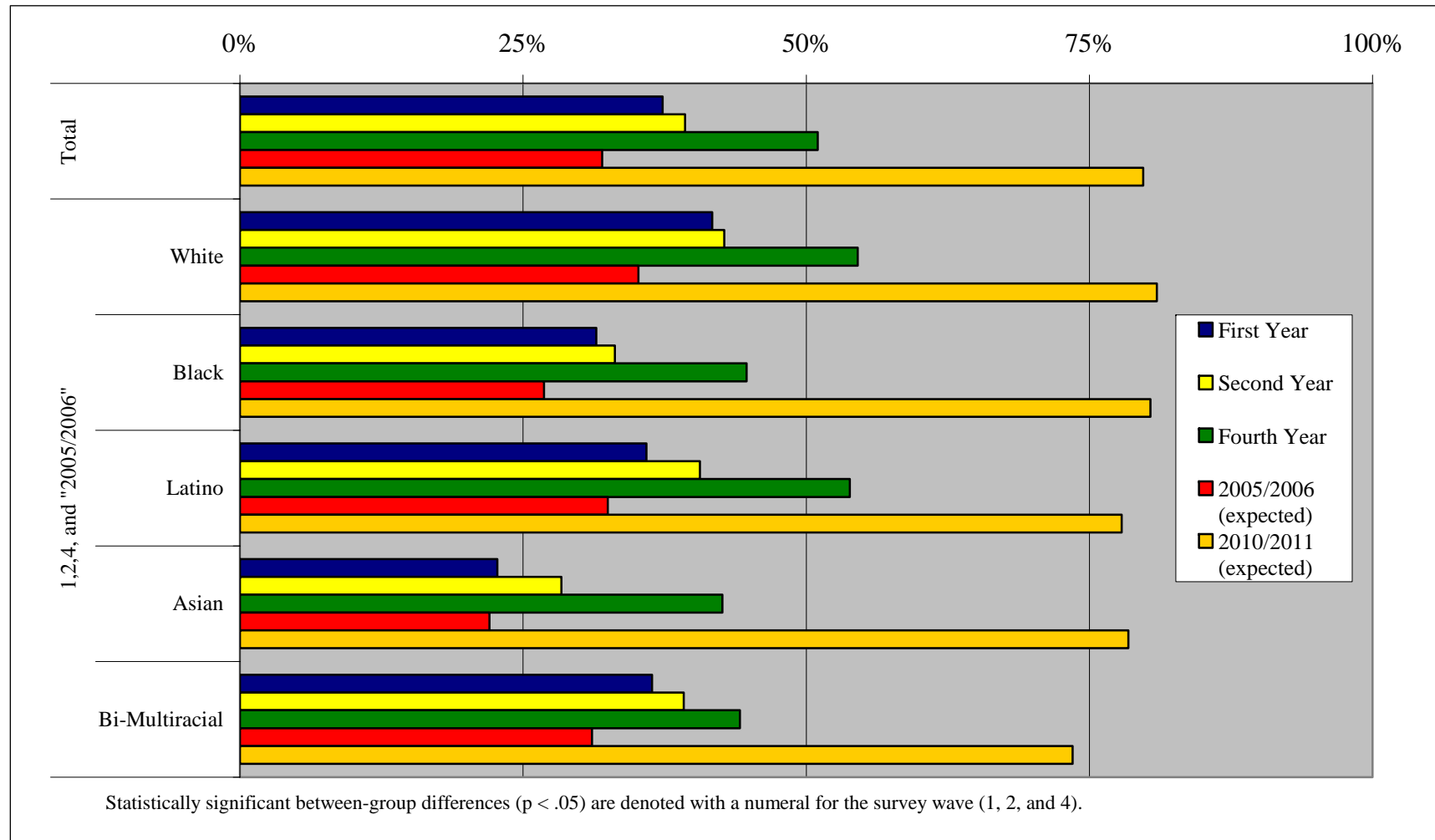
significant linear increase in network diversity over the college career. In contrast, White students' Duke networks become slightly less diverse across the college years. While from the second to the fourth college year White students' friends at Duke become slightly more diverse, in the senior year friendship networks are still slightly less diverse than in the first college year.

Romantic Relationships

In each college year survey students were asked if they were currently in a romantic relationship, and in the fourth year survey students were also asked to describe their expected relationship status about one and five years after leaving Duke. Figure 5.3 displays the percentage of students in romantic relationships, for the total sample and by racial ethnic group, from the first to fourth college year. It is interesting to note that there are no significant differences, for any survey wave, between male and female students or fraternity/sorority members and non-members in the incidence of romantic relationships. Significant racial ethnic differences are evident in each of the college years, generally mirroring students' previously rated importance of dating relationships (results not shown). In the pre-college survey, White, Latino and Bi-Multiracial students assign the highest level of importance to dating relationships. Concordantly, White students are the most likely to be in a romantic relationship for each of the college years, with about 42 percent in a relationship during the first year increasing to about 55 percent in the fourth year. Latino and Bi-Multiracial students report being in relationships at levels only slightly below White students for any college year.

In contrast, Asian students rate dating relationships as less important, relative to other racial ethnic groups, and are the least likely to report being in a romantic relationship for any college year. About 23 percent of Asian students were in a relationship in the first college year,

Figure 5.3. Percent of Students in Romantic Relationships, by Racial Ethnic Group, First to Fourth Year
 Senior Year: Percent of Students Expecting to be in a Relationship, One and Five Years after Graduation



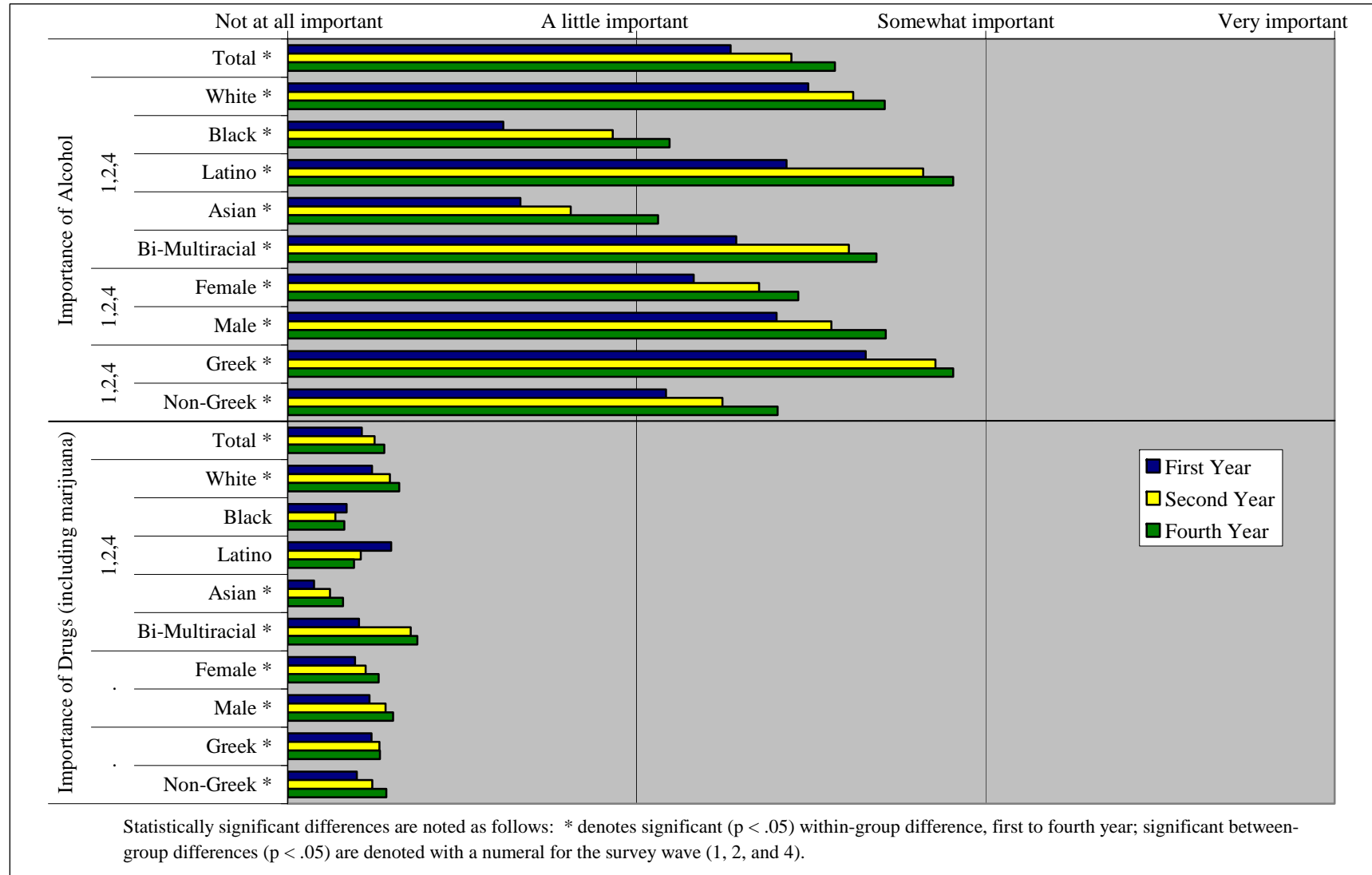
increasing to about 43 percent by the fourth year. Black students report being in romantic relationships more than Asian students, but less than White, Latino or Bi-Multiracial students. Overall, all students, from all racial ethnic groups, were more likely to be in a relationship as they proceeded along the college career, although patterns of dating behavior are marked by enduring racial ethnic differences.

This same racial ethnic pattern continues to be found in students' expected relationship status in the fall immediately following exit from Duke, yet all groups are considerably less likely to expect to be in a relationship than in the fourth college year. For example, while about 55 percent of White students report being in a relationship during the spring semester of their fourth year, only about 36 percent expect to be in a relationship during the next fall. For Asian students, about 43 percent report being in a relationship during the fourth year, yet only about 22 percent expect to be in a relationship the next year. However, looking five years beyond exit from Duke, most students expect to be in a relationship and there are no longer significant racial ethnic differences. About 80 percent of students expect to be in some sort of romantic relationship five years after graduation.

Importance of Alcohol and Drugs

While we do not ask students about drug and alcohol use directly, two survey questions included in each of the college year surveys allow us to indirectly examine the use and presence of drugs and alcohol in social life at Duke. First, students were asked to describe how important alcohol and drugs are to their enjoyment of campus life with a 5-point scale ranging from "not at all important" to "extremely important" (Figure 5.4). Second, students were asked to describe

Figure 5.4. Importance of Drugs and Alcohol in Students' Enjoyment of Campus Life, First to Fourth Year
By Racial Ethnic Group, Gender, and Fraternity/Sorority Membership

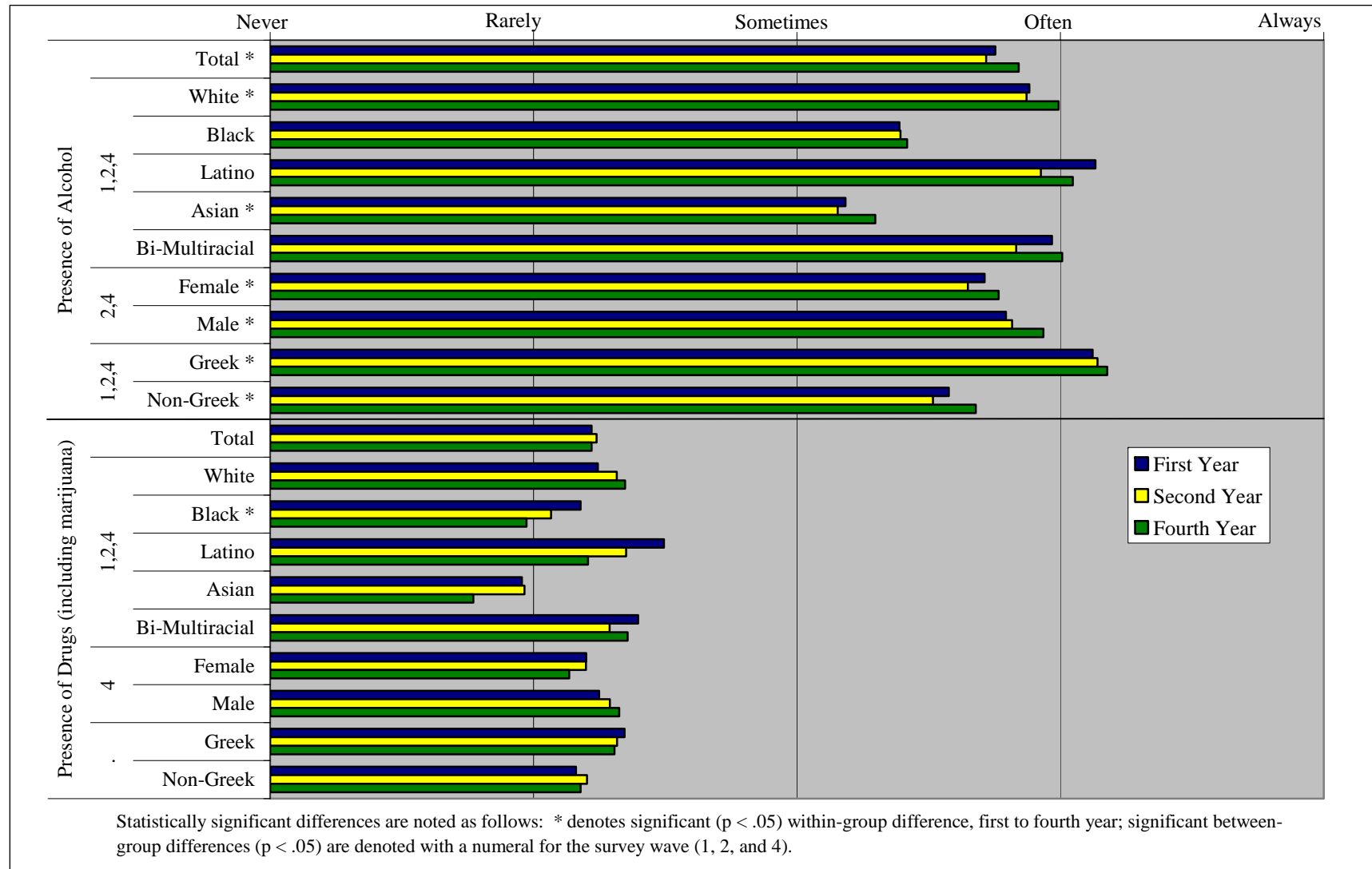


how frequently alcohol and drugs were present at social events they attend, again using a 5-point scale ranging from “never” to “always” (Figure 5.5). Generally, results indicate a continuation of patterns and trends highlighted in the first Report.

Overall, students report alcohol to be of moderate importance to their enjoyment of campus life, although significant group differences exist (see upper panel, Figure 5.4). Further, all groups report that alcohol becomes more important to their social lives as they move across the college years. For each of the three survey waves, male students rank alcohol as more important than female students, and White and Latino students consider alcohol to be more important to their social lives than Black or Asian students. Also, fraternity/sorority members consider alcohol to be more important than non-members. These between-group differences for each college year, as well as the within-group temporal trends, are all statistically significant at conventional levels. While racial ethnic, gender and Greek differences persist across the college years, all students report that alcohol becomes increasingly important to their enjoyment of campus life from the first to second to fourth college year.

Students consider drugs, including marijuana, to be considerably less important to their social lives than alcohol (see lower panel, Figure 5.4). For all racial ethnic groups, male and female students, and fraternity/sorority members and non-members, drugs are rated at slightly above “not at all important” to their enjoyment of campus life, although small, significant racial ethnic differences exist for each of the college years. White, Latino and Bi-Multiracial students consider drugs to be slightly more important than Black or Asian students in the first, second and fourth college year. Similarly, students report that drugs are rarely present at the social events they attend (see lower panel, Figure 5.5). Significant racial ethnic differences are evident for each of the college years, with White and Latino students reporting that drugs are present slightly

Figure 5.5. Presence of Drugs and Alcohol at Social Events, First to Fourth Year
By Racial Ethnic Group, Gender, and Fraternity/Sorority Membership



more frequently at campus events than Black or Asian students, but all groups report that drugs are present at campus events only rarely. It is possible that our measures of the importance and presence of drugs underestimate actual levels given the illegality of drug use.

Alcohol, in contrast, is present at campus social events relatively frequently (see upper panel, Figure 5.5). A similar racial ethnic pattern to that described above emerges, with White, Latino and Bi-Multiracial students reporting that alcohol is present at social events they attend more often than Black or Asian students across each survey wave. Of all the group comparisons highlighted in this figure, fraternity/sorority members report that alcohol is present at social events most often for the first, second and fourth college year. Additionally, for all groups, alcohol is present slightly more frequently in the fourth college year than it was in the first year. While alcohol is reported to be present slightly less frequently in the second college year in comparison to the first year, alcohol is present most frequently in the fourth year (when most students are of legal drinking-age).

Summary

Looking at these various aspects of Duke students' relationships and social life, the general theme that emerges is one of stability and enduring between-group differences across the college years. From the senior year to the first college year, as well as across the college years, students' social networks remain relatively stable, and rather homogenous, in terms of racial ethnic diversity. For White and Black students, most friends at Duke come from the same racial ethnic background. White students' closest-friends networks become slightly more diverse in the transition from high school to college, while Black students' closest-friends networks

become slightly less diverse. Yet, for both groups the racial ethnic composition of their friendship networks remains rather stable across the college years.

Patterns of dating relationships across the college years largely mirror the racial ethnic differences in pre-college importance of dating relationships. Asian and Black students rank dating relationships as relatively less important, and are also less likely to report being in a romantic relationship in each survey wave, than White or Latino students. Across all racial ethnic groups, students are more likely to be in a romantic relationship as they move along their college career, although considerably fewer students expect to be in a relationship in the fall immediately following exit from Duke.

As highlighted in the first Report, alcohol is often present at the campus social events students attend. Alcohol is present only slightly more often in the fourth college year than in the first. In contrast, drugs are considered to be rather unimportant to students' social lives, and are rarely present at social events. In each of the college years, Black and Asian students report that alcohol is significantly less important to their enjoyment of campus life, and is present less frequently at social events they attend, compared with White or Latino students. Fraternity/sorority members consider alcohol to be significantly more important to their social lives, and report that it is present more frequently at social events, than non-members.

6. Looking Back and Future Plans

The fourth college year survey included several items that ask students to reflect upon their experiences at Duke and to report their future academic, family, and work plans.

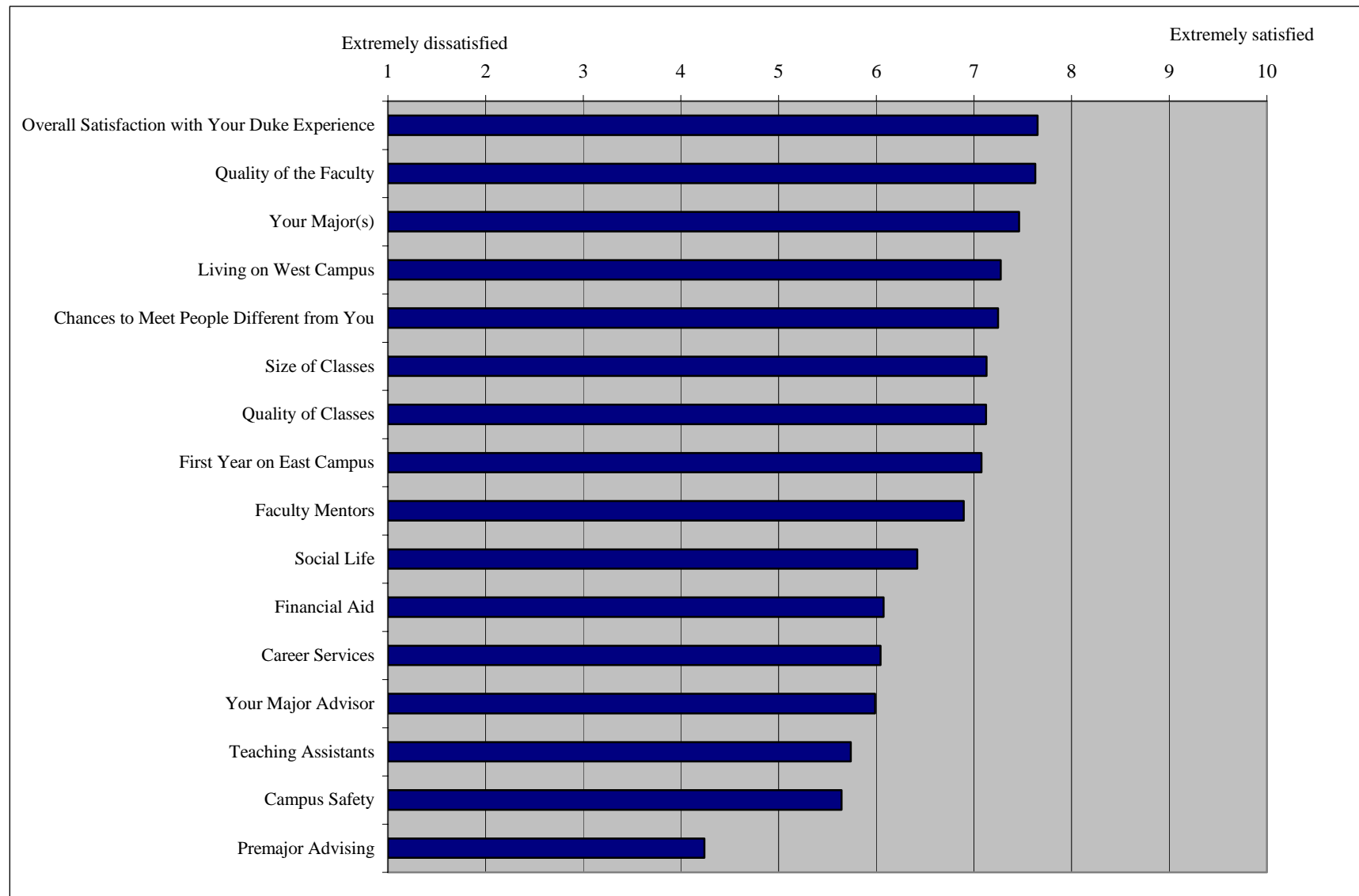
Satisfaction with the Duke Career

Students ranked their satisfaction with their experiences in each of sixteen areas of the undergraduate career on a scale of zero to 10. Also, students were asked to consider their overall satisfaction with the Duke experience. Figure 6.1 describes the results of these items for the total sample, displaying mean values in descending order of satisfaction.

Students report that they are very satisfied with their overall experiences at Duke, with a mean score of about 7.7 on the ten-point scale. It is notable that there are no significant differences in overall satisfaction across racial ethnic groups, as well as between male and female students or between the graduating classes of 2005 and 2006. Less than 10 percent of students report an overall satisfaction score between zero and five (“dissatisfied”), while over 90 percent report a score between six and ten (“satisfied”) and over 30 percent report a score of nine or ten (“extremely satisfied”). Also, students report greater satisfaction with their overall Duke experience than with any of the separate domains.

Other aspects of the Duke undergraduate experience with which students report relatively high levels of satisfaction include: the quality of the faculty, major field of study, living on West Campus, opportunities to interact with people of different backgrounds, and class size and quality. About 22 percent of students report that they were extremely satisfied with the size and quality of their classes, and between 29 and 36 percent were extremely satisfied with these other

Figure 6.1. Mean Levels of Student Satisfaction with Selected Aspects of the Duke Undergraduate Career



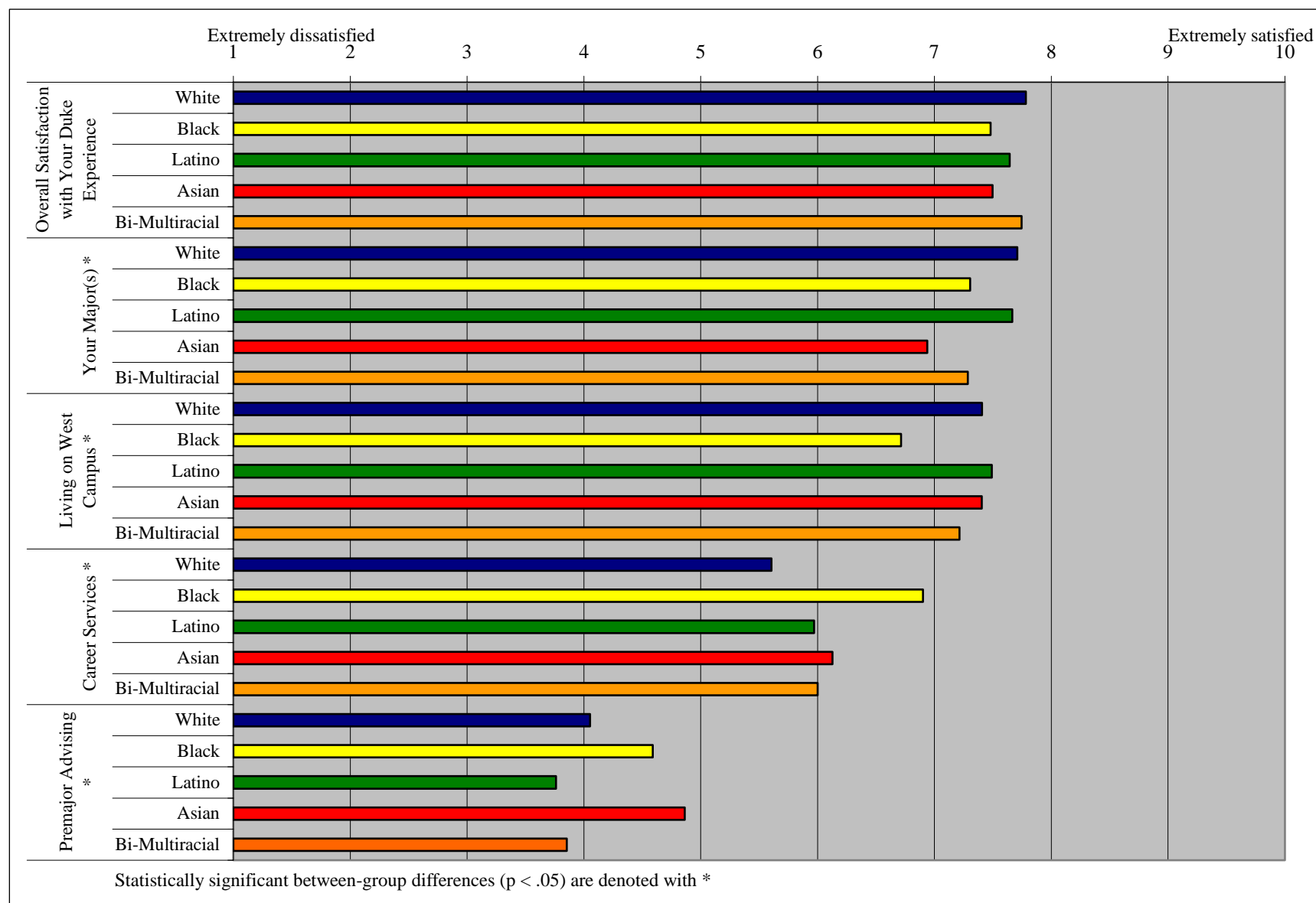
four aspects of campus life. For each of these items, between 11 and 20 percent of students report being dissatisfied, and only about one percent of students report a satisfaction score of zero or one (“extremely dissatisfied”).

Students report more moderate levels of satisfaction with living on East Campus during their first year and their faculty mentors. For these items, roughly one-quarter of students report dissatisfaction while about one-third report extreme satisfaction. Also, students are somewhat less satisfied with social life at Duke than they are with the quality of faculty, residential life and coursework. Social life receives a mean satisfaction score of about 6.4, with about 28 percent of students reporting dissatisfaction, while only about 17 percent of students report being extremely satisfied.

Two general aspects of the Duke experience towards which students express a sense of dissatisfaction include academic advising and campus safety. Pre-major advising, teaching assistants and major advisors are three of the four lowest rated areas. For pre-major advising, over two-thirds of students report being dissatisfied, with more than 19 percent reporting extreme dissatisfaction. Less than 10 percent of students reported that they were extremely satisfied with their pre-major advising. Students were relatively more satisfied with their major advisors, with over 27 percent reporting extreme satisfaction, though about 40 percent report dissatisfaction and more than 12 percent report extreme dissatisfaction. Similarly, over 44 percent of students report dissatisfaction with campus safety and less than 10 percent report being extremely satisfied. Female students report significantly less satisfaction with campus safety than male students (mean score of 5.32 versus 6.11).

Figure 6.2 highlights the most prominent racial ethnic differences in students’ satisfaction with their undergraduate career. White, Latino and Bi-Multiracial students report

Figure 6.2. Student Satisfaction with Selected Aspects of the Duke Undergraduate Career, by Racial Ethnic Group

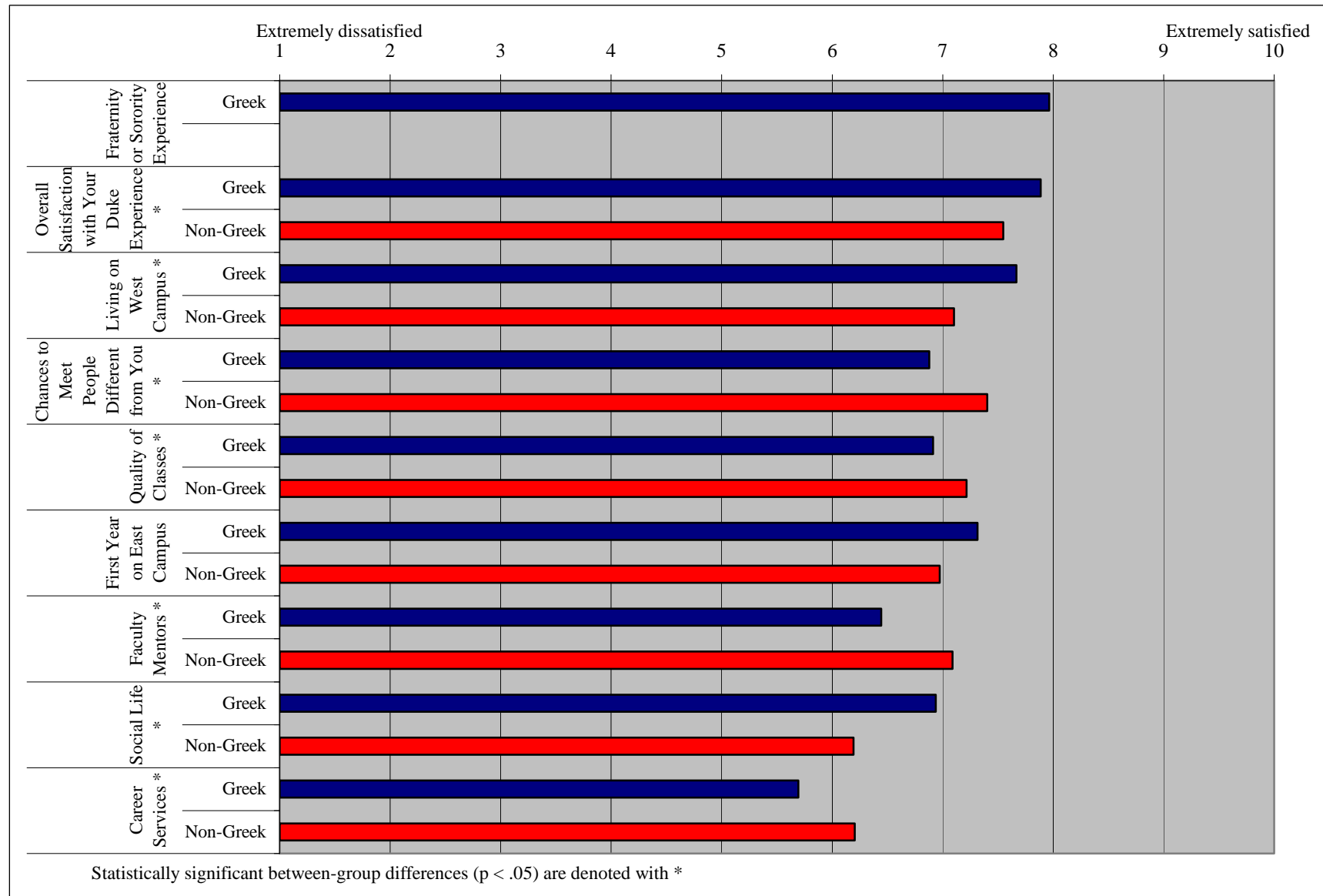


slightly higher levels of overall satisfaction than Black or Asian students; as noted above these differences are not significant. The other four aspects of the Duke experience highlighted in this figure include statistically significant racial ethnic differences in satisfaction. Asian students are least satisfied with their major fields of study, relative to other racial ethnic groups. Nearly one-quarter of Asian students were dissatisfied with their major, compared to about 12 percent of White students and less than 15 percent of Latino students. Black students are least satisfied with living on West Campus. While more than 30 percent of White and Latino students report being extremely satisfied with living on West Campus, just 18 percent of Black students report extreme satisfaction. Still, relatively few students (no more than three percent, for any racial ethnic group) report being extremely dissatisfied with West Campus residential life. Pre-major advising is the lowest rated aspect of the undergraduate career across all racial ethnic groups, although Black and Asian students report higher levels of satisfaction than White and Latino students.

As shown in Figure 6.3, members of fraternities/sororities report very high levels of satisfaction with their experiences in Greek organizations. Fraternity/sorority members rank their satisfaction with these experiences as slightly greater than their overall satisfaction with their Duke career. Almost 49 percent of members report being extremely satisfied with their fraternity or sorority experience, compared to less than 12 percent who report being dissatisfied.

Members of Greek organizations report being significantly more satisfied with their overall Duke experience than non-members (mean scores of 7.9 for members and 7.6 for non-members). Fraternity/sorority members also report significantly higher satisfaction levels with living on West Campus and social life. About 23 percent of Greek members were extremely satisfied with social life at Duke and only about one percent report extreme dissatisfaction, while

Figure 6.3. Student Satisfaction with Selected Aspects of the Duke Undergraduate Career, by Greek Membership



about 14 percent of non-members were extremely satisfied and over four percent were extremely dissatisfied. In contrast, non-members were significantly more satisfied than members with their opportunities to meet students of different backgrounds, the quality of classes and campus career services.

Future Plans

Several questions in the Senior Survey ask about students' future plans for the fall immediately following exit from Duke (2005/2006) and about five years after graduation (2010/2011). Figure 6.4 displays students' expected primary activity in the year immediately following graduation, by gender. Female students are significantly more likely to plan on attending school full-time, with about 41 percent of female students expecting to continue their education the next fall compared to about 34 percent of male students. Male students are more likely to spend the next year in the military (three percent versus one percent for females) or be working-full time (59 percent versus 52 percent). Of the 38 percent of Duke students who plan on attending school full-time, nearly 70 percent expect to be working towards a professional degree (e.g., MD, DDS, JD, DVM, PhD) and about 23 percent expect to pursue a Master's degree (results not shown).

For most Duke students, the undergraduate degree is expected to be a step towards higher educational attainment. Figure 6.5 displays the highest academic degree students expect to obtain, or be working towards, five years after leaving Duke. By the spring of 2010/2011, about 59 percent of students expect to have obtained or be pursuing a professional degree, and nearly one-third expect a Master's degree (including MBA) to be the highest degree they obtain. Black and Asian students are more likely to expect to earn at least a professional degree than White or

Figure 6.4. Expected Major Activity, Fall Immediately after Leaving Duke (2005/2006), by Gender

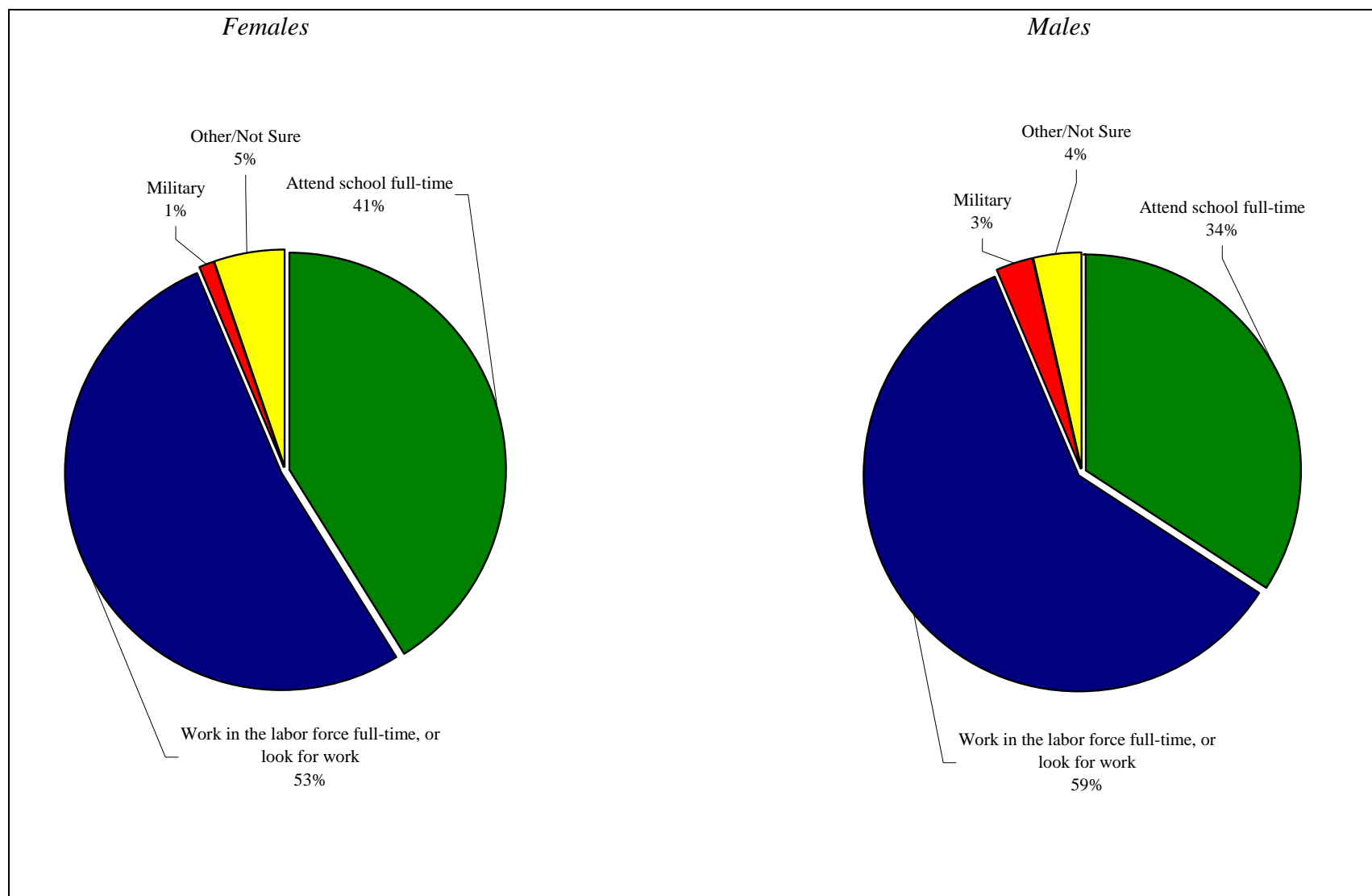
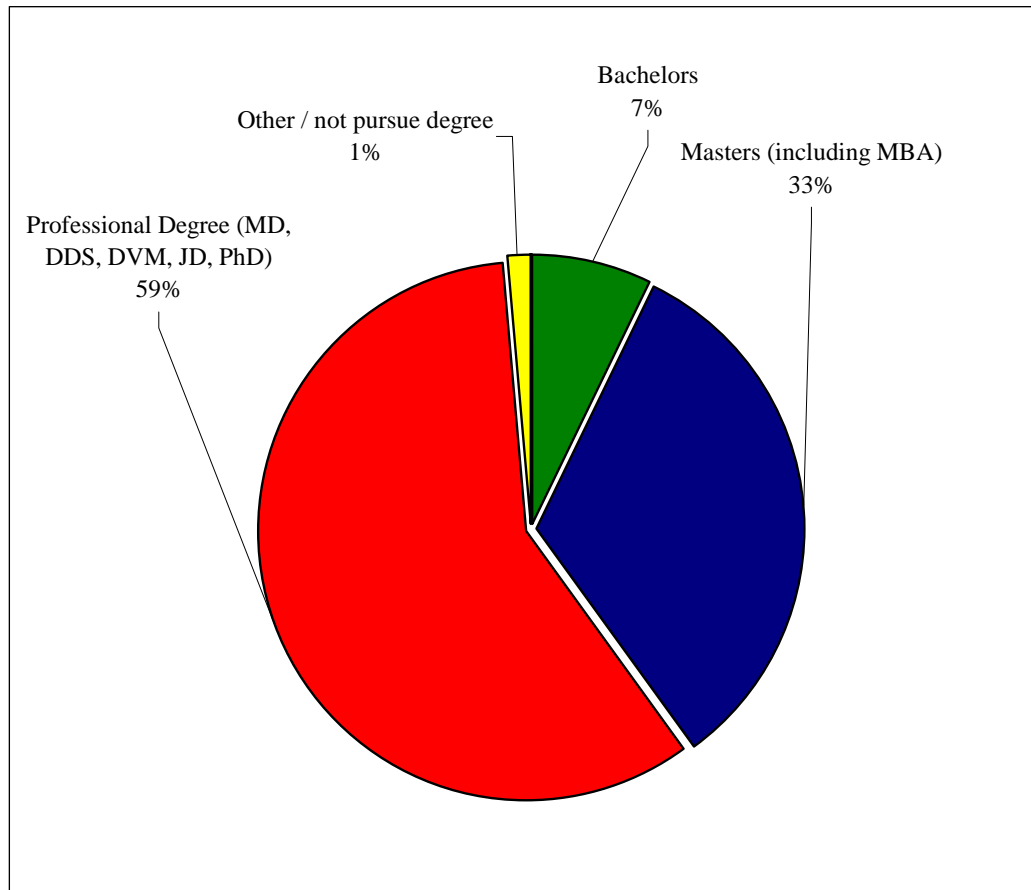


Figure 6.5. Expected Highest Degree Obtained or in Progress, Five Years after Leaving Duke (2010/2011)



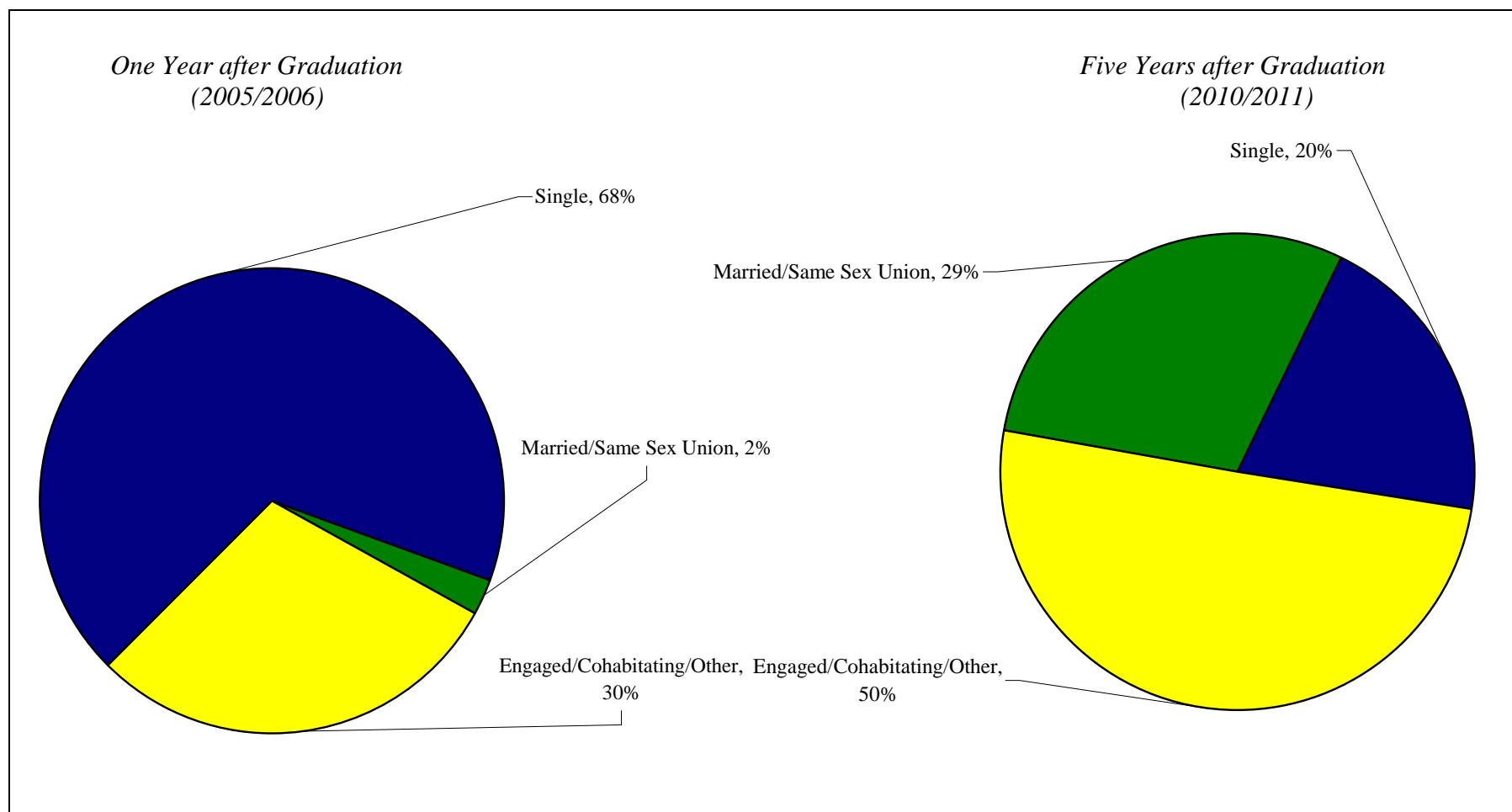
Latino students. Over 73 percent of Black students and 67 percent of Asian students expect to earn a professional degree, compared to about 48 percent of White students and 59 percent of Latino students (results not shown). Members of fraternities or sororities were significantly less likely to expect to earn a professional degree than non-members (51 percent versus 62 percent).

Figure 6.6 describes students' expected relationship status one and five years after leaving Duke. As noted in the previous chapter, in the year after graduation over two-thirds of students expect to be single, about 30 percent expect to be engaged, cohabiting or in another sort of relationship, and less than three percent expect to be married or in a same-sex union. By five years after leaving Duke, about 20 percent of students expect to be single, over half expect to be engaged or cohabiting, and about 29 percent expect to be married or in a same-sex union. While Asian and Black students are more likely to expect to be single in the fall following graduation from Duke, there are no readily discernable racial ethnic differences in expected relationship status five years after leaving Duke.

Summary

Duke students report that they are very satisfied with their overall Duke experience. While Duke students report relatively high levels of satisfaction with most aspects of their undergraduate career, they are less satisfied with academic advising (especially pre-major advising) and campus safety. Pre-major advising is the lowest rated aspect of the Duke career for all racial ethnic groups, male and female students, fraternity/sorority members and the classes of 2005 and 2006. Members of fraternities and sororities report very high levels of satisfaction

Figure 6.6. Expected Relationship Status, One and Five Years after Graduation



with both their experiences in Greek organizations and their overall Duke experience, and are also more likely to be satisfied with campus social life than non-members.

About 56 percent of students expect to work full-time or be looking for work in the fall immediately following graduation, and over 38 percent expect to attend school full-time. Female students are significantly more likely to continue their education in the year after leaving Duke. Over 90 percent of students expect to have earned or be working towards at least a Master's degree five years after graduation, and Black and Asian students are more likely to plan on obtaining a professional degree. Considerably fewer students expect to be in a relationship in the fall immediately following exit from Duke than in the fourth college year. Within five years upon graduation, however, about 80 percent of students expect to be in a committed relationship, with almost 30 percent expecting to be married and over half expecting to be engaged or cohabiting.

7. Policy Review

We conclude with a discussion of the policy implications of our research. The CLL research team is committed to the generation of research that contributes not only to the fields of scholarly inquiry, but is “use-inspired,” timely, and focused clearly on recommendations for policy and procedural revision. Our research design provides a stable and ongoing portal through which university policy evaluation can be conducted at regular intervals. An added advantage is that through continuous assessment, findings from one student cohort can be easily exported to design policy change for incoming cohorts. Initially, we chose five areas of policy investigation. These areas were salient across all college years, but particularly from pre-college through the sophomore year. We recognize that residential policy and diversity holds less meaning for seniors, but the question remains, what is the impact of diversity, social networks and academic outcomes? We will address our four areas of policy and reflect on the puzzle of diversity and social networks during the college career.

When we conclude our data gathering and analysis, the goal will be to link policy recommendations to educational outcomes. Simply, the policy recommendations bridge the gap between the aspirations of the university, students and actual experiences. Where these aspirations and experiences overlap, there are successful policies to build upon. Where there are gaps, there are opportunities to create new and explore existing policies. This model seems an appropriate framework for our discussion.

Area 1: Analyze patterns of students’ academic disengagement and engagement/integration

Medalie (1981) notes that during the first year it is critical for students to invest in the collegiate and academic experience. This investment can be described as engagement or integration into the core of

a university education: the academic experience. Our data suggest that no group of students in any college year reports spending more than 15 hours per week on studying outside of class. This would be the equivalent of a part-time job, or less than four hours per week per enrolled course. However, students are reporting small increases in a number of rated academic and intellectual skills between their first and fourth college years.

In our first report, we saw some troubling trends in academic disengagement. The data suggested disengagement from science and mathematics majors for Black, Latino and Bi-Multiracial students. White and Asian students are stable in the shares of planned versus declared science and mathematics majors. While we recognize that changes in majors are indeed part of the developmental process, meaningful engagement is arrested when students navigate an exodus from one arena to other disciplines. This disengagement should be examined fully, particularly in relationship to changes in GPA across the college career. One question of interest is if there is a relationship between the increase in GPA and science and math disengagement.

- The exodus of students from mathematics and science majors and into other disciplines should receive intentional scaffolding to minimize the disruption of the academic engagement process during the first two years. Further, enhancing opportunities to retain a greater diversity of students in these majors is essential as well as understanding the exodus as it relates to GPA changes across the college career.

Area 2: Analyze patterns of classroom and non-classroom racial discrimination

During a 1989 panel presentation entitled, “The Problem Defined: The Nature of Racism and How it Operates in an Academic Setting,” Black students noted pressure they felt to dispel notions of academic inferiority. A follow-up descriptive study (Bryant, 1999) revealed, not

surprisingly, that these perceptions and experiences differed for Black and White students.

Given that students discuss this as a part of their collegiate experience, a follow-up examination of this issue was timely.

In each survey year we asked Duke students to evaluate their classroom environments on eight different dimensions, ranging from feeling respected in class to class size, to an instructor or students making prejudiced comments, to feeling like they did not fit in. On balance the items suggest rather comfortable classroom environments. This remains consistent throughout the college career. When judged on the basis of these indicators, these data offer no support for assertions that Duke undergraduate classrooms contain prejudiced statements on gender, race or ethnicity on any consistent, even occasional basis.

However, we also ask students targeted questions about being treated badly because of their race/ethnicity, their perceptions of discrimination, and the contexts of these experiences with discrimination. Disaggregating the data continues to reveal stark findings for different racial ethnic groups. Our grading metric from the first Report remains much the same from the first through the fourth years; the university has poor performance outcomes related to addressing and reducing levels of discrimination for undergraduates.

- Units within the Division of Student Affairs and Academic Affairs should explicitly monitor trends in perceived discrimination through data collection. The methodology should include disaggregated data, targeted questions about discrimination, appropriate metrics, and operationalization of successful goals and outcomes. With slight alterations, course evaluations and the COEFHE senior survey may be useful assessment portals.

- Resources for undergraduates that outline how to address and deal with discrimination should be available. Utilization of the recently appointed ombudsperson may provide a centralized way to continue to monitor students' experiences.

Area 3: Analyze individual and institutional processes related to academic distress prevention and management

A significant concern of academic affairs has been the early detection of academic difficulty and efficacious interventions. We have witnessed a strong and positive trend of over 90 percent of faculty reporting mid-term grades of undergraduates. These grades are often the first “red flag” that the course challenge-to-success ratio is in jeopardy. Pre-major advisors and other academic specialists are in much stronger positions to collaborate with students experiencing academic challenges and mitigate catastrophic educational outcomes. Yet, students report low satisfaction with advisors.

- It is important to continue to stress the relationship between mid-term grade reporting and academic distress.
- Recognize that pre-major advisors are rated least satisfactory for our cohorts. It is important to engage in further evaluation of this dissatisfaction, as well as to create meaningful linkages between students and advisors.
- Create a culture of academic risk-taking and collaborative problem solving that fosters greater relationships between students and academic support professionals and advisors.
- Consider re-shaping academic challenges as normative and to be resolved collaboratively.

- Evaluate the impact of pre-major advising in residence halls to determine if this model increases utilization of those resources.

Area 4: Diversity and Development: Equal Access, Exposure and Engagement

What are the university goals for diversity and how do they develop over time? What do we desire from our undergraduate students and what intercultural skills and tools should the university provide? We initiated this project during a time when national attention was drawn to the positive impact of affirmative action admissions policies on equal access to highly selective college and universities. The conventional wisdom, as supported now by research, heralded the benefits of student diversity on campus climate and diversity. On the one hand, Duke, as evidenced by its emphasis in strategic planning and admissions data, demonstrates a clear commitment to equalizing access. On the other hand, our data reveal a more complicated, somewhat puzzling situation in terms of student expectations, actual behavior, and satisfaction with diversity experiences by the end of college.

For example, from high school through the college years, the racial ethnic diversity of students' closest-friends networks is remarkably stable. About 90 percent of White students' closest friends were also White in the senior year of high school, and their friendship networks become only slightly more diverse throughout the college years. Nearly 84 percent of White students' closest friends were also White in the first and second years, and about 82 percent were also White in the fourth college year. Conversely, less than two percent of White students' closest friends were Black in the senior year of high school, increasing to between three and four percent throughout the college years. While the racial ethnic composition of students' friends at

Duke is rather stable across the college years, these broader social networks can be considered to be slightly more diverse than the closest-friends networks.

For Black, Latino, Asian and Bi-Multiracial students, the proportion of friends of the same race or ethnicity declines across the college years. While all groups experience significant changes in the racial ethnic diversity of their friends at Duke, only Latino students show a statistically significant linear increase in network diversity over the college career.

What do students expect in terms of diversity experiences? If we look at it from our respondents' point of view, prior to Duke, their college expectations for meeting different people are close to "very important" on the measurement scale. We might hypothesize that their desires are for exposure and not necessarily engagement. Further, their actual self-reported behavior is at odds with that expectation. Their fairly highly segregated closest-friend and Duke friendship networks seem impervious to any effects of exposure in college (see Figures 5.1 and 5.2). At the end of college, student respondents rated the "Chance to meet people different from you" at about 7.2 on a 10 point scale, in the region of high satisfaction. Also, when satisfaction with diversity opportunities is broken down by Greek/non-Greek, non-Greek students were more satisfied with this aspect of college life than Greeks, a statistically significant difference.

Thus, our respondents report a college career in which they expect and value diversity experiences at the outset, they seem satisfied with those experiences near the end, but in between the diversity of their networks doesn't seem to change much as a function of the collegiate experience. Is this simply a case of a major difference between "What we say and what we do?" Or do students feel they are actually engaging social diversity by simple demographic exposure to others in the environment but with no major changes in patterns of affiliation in best friend and more general friendship networks? This appears to be a world in which social diversity

experiences and integration are less intense and more minimal, versus a world where actual patterns of social affiliation change. As an institution, to what does Duke aspire in terms of student networks and diversity? One indication of its aspirations is an articulation that diversity as an intercultural competency is necessary for students to become engaged global citizens. If this is the case, then the next step in student development is the intentional acquisition of intercultural skills, maturity and engagement.

Methodological Appendix

Sampling Design, Response Rates and Measurement

The sampling design for the Campus Life and Learning Project was selected to provide sufficient statistical power for subgroup comparisons by gender and by racial ethnic group (Black, White, Asian, and Latino but not Bi-Multiracial as there were too few in the population), and to stay within the boundaries of our available resources. We defined the target population as all undergraduate students in the Trinity College of Arts & Sciences and the Pratt School of Engineering who had been accepted for admission to the Classes of 2005 and 2006 (incoming classes of 2001 and 2002) and who had accepted admission.

The sampling design relies upon the Duke Office of Admissions' application form as a basis for measurement of racial ethnic group. Of importance, this measure offers respondents the options of checking categories for White, Black, Latino, Native American, Asian and Bi-Multiracial. A few respondents in each cohort (less than 10) did not provide any racial ethnic category. Because of their small numbers, we combined categories for Native American, Bi-Multiracial, and no racial ethnic category and label these "Bi-Multiracial." The sampling process used this measure. All of the analyses in the text of this volume use a U.S. Census type measure of race and ethnicity that differs from the Duke Admissions Form. The Census measure is considered to be more accurate, and was obtained in the pre-college survey. The Admission and Census measures for our respondents provide for identical racial ethnic category placement in about 98 percent of cases. The Census measure first asks a respondent if he or she is Hispanic (yes or no). It then asks respondents to respond to the self-assigned racial category, which in our case included: White, Asian, Black, Bi-Multiracial and Other. The Census measure is more accurate because it allows for Black Hispanic responses. Among CLL sample members we

encountered no Black Hispanic respondents, hence any sample member who identified as Hispanic is included in the Latino category in figures in the text. In the instrumentation, we used the label “Hispanic” as this allows precise comparisons with Census 2000 data based upon the Census measures of race and ethnicity. We also asked all respondents who self-identified as Bi- or Multiracial to identify the specific racial groups that applied. Inspection of these responses did not show any dominant pairing. That is, there was substantial diversity in the sub-categories that respondents reported (Black-White, White-Asian, Latino-Black, Native American-White, and so on).

The sampling design selected all Black and Latino students in each cohort, and randomly sampled about two-thirds of Asian students, and about one-third of White and Bi-Multiracial students. In retrospect, we wish we had saturation sampled all Bi-Multiracial students. Further, we did not over-sample student-athletes; hence, our sample is not ideal for detailed comparisons involving this group. The overall response rate to the pre-college survey for the incoming class of 2001 was 80 percent, with subgroup response rates varying from a low of 75 percent for Bi-Multiracial students and a high of 86 percent for Latino students. In general, racial ethnic group differences in response rates were small for both cohorts. The overall response rate for the incoming class of 2002 was 76 percent. It was slightly lower for this cohort as we elected to economize and did not do a telephone response option for this cohort as we did for the incoming class of 2001. In mail survey methodology, we closely followed Dillman’s (1978) Total Design Method, which provides for up to 8-12 sequential contacts with non-respondents via mail, telephone and e-mail reminders, and multiple mailings of the instrument. All respondents received modest compensation for their participation. By survey research standards for scientific

research, these response rates are good but far from perfect. In the next section we provide some comparisons on possible patterns of non-response bias.

The refusal rate was very low, less than two percent for the overall sample. This is exceptional by survey research standards. We suspect that newly admitted students are typically pleased to participate in a survey involving their new college choice.

In the pre-college survey we also included a detailed informed consent document as per institutional Human Subjects Protocols. The design and instrumentation were fully reviewed by the Duke Human Subject Review Committee. The informed consent document also asked participants to provide for signed release to their institutional records, which included course grades. At the pre-college wave, 89 percent and 84 percent of respondents in each respective cohort provided signed release. In subsequent waves we continued to ask respondents for signed release to their institutional records if they had not provided such previously. Hence, the number with signed release to records has continued to grow over the course of the Project and now stands at over 90 percent of those who responded to one or more waves, and over 80 percent of original sample members. In analyses in this volume that involve course grades or grade point average, we are reporting only on those respondents who have given signed consent for access to their records.

We also note that a small number of respondents from each cohort accepted admission to Duke University but did not actually matriculate for the fall semester as a function of a change in plans. These sample members were dropped from the design. Further, once in college, in any given year a small number of students in each sample cohort (less than 20 per cohort in the first two college years; it varies by year) matriculated at Duke but were not currently enrolled. These students were not surveyed in the year in question.

Appendix Table 1 provides cross-wave and wave-specific response rates for the incoming classes of 2001 and 2002. As might be imagined, some sample members complete all waves, while others vary in their participation, some participating in but a single wave. This is customary in multi-wave panel studies. In part this occurs as students take leaves of absence and some experience academic or disciplinary probation. About 42 percent of original sample members in both cohorts completed all four waves of questionnaires. These rates are at the lower range of what is acceptable for social science research, but nonetheless comparable to what has been achieved in other large panel surveys. On the other hand, 89 percent of the incoming classes of 2001 and 2002 participated in at least one of the CLL waves of data collection, and 60-63 percent of sample members completed either all four waves or at least three waves of data collection. Depending upon the comparison in the text, the respondent base could be as low as 56 percent of the sampled population to nearly 90 percent of the original sample. Most tables and figures in this volume are based upon data that are somewhere in between or toward the upper end of this range. Finally, we note that the data in figures in the text draw upon all available responses to various waves. The reported tests of significance rely only on respondents who have complete data for the test in question (i.e., a cross-wave test of significance would only use data from those who responded to all waves).

In general, the response rates decline somewhat across successive waves. We can identify at least two reasons. First, the diffusion of cell phones went from a modest fraction of undergraduates in 2001, when we first entered the field with surveys, to approaching full population saturation by the end of the survey period in 2006. Part of our methodology (i.e., Dillman's Total Design Method) relies on making telephone reminder calls to non-respondents over the course of conducting a wave. This strategy became less and less effective as cell phones

Table A.1. Cross-Wave Response Rates, Incoming Classes of 2001 and 2002.

	INCOMING CLASS OF 2001		INCOMING CLASS OF 2002	
	n	%	n	%
TOTAL SAMPLED	833	100.0	700	100.0
COMPLETED ALL FOUR WAVES	353	42.4	298	42.6
COMPLETED THREE WAVES	168	20.2	109	17.6
COMPLETED TWO WAVES	111	13.3	109	15.6
COMPLETED ONE WAVE	109	13.1	94	13.4
TOTAL RESPONDENTS COMPLETING ONE OR MORE WAVES	741	89.0	624	89.1
INFORMED CONSENT	682		562	
(as percent of sampled)		81.9		80.2
(as percent of total respondents)		92.0		90.1
RESPONSE RATES BY WAVE				
Pre-college	673	80.8	508	72.6
First year	600	72.0	491	70.1
Second year	569	68.3	434	62.0
Senior year	465	55.8	440	62.9

diffused. Second, after members of the oldest cohort (Class of 2005) completed their first college year, Duke University installed Duke ID card-reader security systems in all residence halls. In the earlier waves, at the last stages of collecting data we had our Project graduate research assistants deliver questionnaires to non-respondents in their dormitories and encourage them to respond. With the new security systems, this was no longer possible, as graduate research assistants did not have access to residence halls (other than their own).

Finally, we note one other feature of the data collection design. In the Senior Survey only, we gave sample members the option of completing a traditional paper and pencil survey and returning it by mail, or completing an identical web-based survey. About a third of respondents in each cohort elected to do the web version. In analyses to date, we have been unable to find any social demographic variable (racial ethnic group, test scores, family background measures) that is statistically significant in differentiating those who did the web version of the survey from the traditional version.

Generalizability and Response Bias

Our study was not designed to be representative of all of higher education. However, we would argue it is likely more representative of highly selective institutions of higher education. In their sample of the cohort entering college in 1989, Bowen and Bok (1998: 337), define their top tier of selective institutions as those with combined SAT scores of 1300 or higher. Their sample included institutions like Bryn Mawr, Swarthmore, Wellesley and Williams colleges, Princeton, Duke, Rice, Stanford, Yale, Columbia, Northwestern, the University of Michigan and the University of North Carolina at Chapel Hill. Duke's entering cohort of students in 2001 had combined SAT scores above 1350 but below 1400.

In the Methodological Appendix of the first Report (Bryant, Spenner and Martin, 2006: Table 4) we provided further comparison of the racial ethnic composition of the Duke student body compared with all U. S. public and private higher education institutions at the end of 1999 (close to the 2001 entrance cohort). Duke was fairly comparable to other universities with the exception that Duke had about twice the percentage of Asian students (similar to other private elite institutions) and somewhat more students in the “Other” category. The latter difference is likely because the Duke Admissions Form includes a category in which respondents can describe themselves as “Bi- or Multiracial.”

We also made comparisons (data available upon request) of Duke to other so-called “elite” universities (Harvard, Princeton, Yale, Dartmouth, Brown, Stanford and Columbia Universities, and the University of Pennsylvania) and “Top 50” (based on SAT scores) universities. In general, Duke is identical to or slightly below the elite institutions and clearly above the top 50 institutions. For example, Duke’s first year retention rate is 93% of those matriculating, compared with 93% for the elite and 80% for the top 50 institutions. The student-faculty ratio is 9.0:1, versus 8.22:1 for the elite and 10.69:1 for the top 50 institutions. Finally, the 25th and 75th percentile of SAT scores for Duke are 1300 and 1500; for elite institutions, 1334 and 1522; and for top 50 institutions, 1234 and 1424. These comparisons help situate Duke University in the national distribution. Overall, we suggest that Duke is likely fairly representative of elite institutions and similar but less close to the top 50 U.S. institutions, as measured by SAT scores.

Finally, we conducted some initial comparisons that might inform the extent of possible non-response bias in our results. Non-response bias occurs when the non-respondents (or refusals or those who have left the institution) in a given wave are not a random subset of the full

sample. We used admissions file data on eleven background variables to compare those in the pre-college and first year analysis (i.e., respondent) sub-sample to all other members of the original sample who are not in this analysis group (i.e., non-respondents). In general, the differences are quite small. Five variables show no significant differences: percent Asian, Latino, White, high school rank, and whether the respondent applied for financial aid. Seven variables show small but statistically significant differences. For example, these included percent Black (fewer in the analysis sample), SAT verbal and math scores (10-20 points higher in the analysis sample), and father's and mother's education (80 and 73 percent high school graduates in the analysis sample versus 72 and 68 percent, respectively, for those original sample members who were non-respondents in the first and second survey waves). Overall, there likely is a small response bias in many of our findings in the direction of non-Black and socio-economically advantaged sample members. These need to be kept in mind when considering results.

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