# Is Student Participation in an Honors Program Related to Retention and Graduation Rates?[1]

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## Introduction

Do students who participate in an honors program have higher retention and graduation rates in comparison to otherwise similar nonparticipants? This is the question we address, and we do so within the context of the Honors College at the University of Maine. We present our investigation both as a contribution to the limited research in this area and as an illustration of the practical challenges one faces in doing applied work of this sort. Regarding the latter, one must be careful when comparing the retention and graduation rates of honors and nonhonors students because of differences between these two groups at the outset—especially differences in academic ability, for instance, that arguably are related to subsequent retention and graduation rates (e.g., Murtaugh, Burns, & Schuster, 1999). How, then, does one go about making such comparisons? We present our comparisons in several stages, differing in sophistication, thus showing how our results changed and, further, how these changes shaped our understanding of the relationship between honors participation at UMaine and retention and graduation rates.

## Related Research

To many, particularly those involved in honors education, the advantages of honors curricula have been and continue to be obvious. Honors students are engaged, they are challenged, and they are exposed to interdisciplinary analysis. They have a wonderful experience and achieve great things during their undergraduate careers. All of this is good; the students

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flourish, and the faculty have enjoyable experiences. So, what's the problem? The problem is that we have little data to support these claims.

Astin (1993), in his regression analysis of student success in college, employed 135 "college environmental" measures and 57 "student involvement" measures to explain the variability in each of 82 outcome measures. One of Astin's student-involvement measures was enrollment in an honors program. Among the other involvement measures were participating in student clubs and organizations, talking with faculty, joining a fraternity or sorority, taking writing courses, studying abroad, and exercising. Astin found that honors students tended to fare better than nonhonors students with respect to retention (defined as being retained for four years and receiving a degree at that point), desire to make a contribution to a scientific theory, self-reported growth in analytical and problem-solving skills, and admission to professional or graduate school. In contrast to his earlier study (Astin, 1978), Astin (1993) found no association between honors status and college GPA. Nor did he find associations with respect to self-reported growth in general knowledge, critical thinking skills, writing skills, leadership, or satisfaction with the overall college experience.

Much of the early work in the area of honors participation and student success focused primarily on identifying appropriate students for an honors program. The questions asked were of the sort, "How can we select students to be in honors who will be successful?" where "success" typically was indicated by a high GPA and graduation from honors (e.g., Coursol & Wagner, 1986). While such questions are still of interest, they do not address the *effects* of participating in an honors program. In the words of Sam Schuman (Schuman, 2004, p. 22), "What happens to comparable students who do and do not enter Honors programs?"

With few exceptions (e.g., Pflaum, Pascarella, & Duby, 1985), only recently have we seen systematic research on the effects of being in honors. Shushok (2002, 2006), comparing matched groups of honors and nonhonors students, reported a GPA advantage in the first collegiate year that then disappeared by the fourth year. He also found that honors students were more likely to meet with faculty members, discuss career plans with faculty members, and discuss social/political issues with other students outside of class. The first two effects were decidedly stronger for male students. Further, male honors students also were more likely to be involved in academic extracurricular activities than their nonhonors counterparts.

Cosgrove (2004) took a different tack in investigating the effect of honors participation. Drawing on several institutions in the Pennsylvania State System of Higher Education, he considered three groups of students: those who completed an honors program ($n$ = 30), those who started but did not complete an honors program ($n$ = 82), and "high ability" students who never participated in an honors program ($n$ = 108). Cosgrove found that honors completers had a significantly higher five-year graduation rate compared to that of the other two groups: 100% for honors completers versus 82% and 76%, respectively, for partial completers and high-ability nonhonors students. Among those who did graduate within five years, honors completers required fewer semesters to do so than did the other two groups (although the statistical significance of this finding is not reported). What about academic performance? Among students graduating within five years, honors completers earned a mean GPA of 3.71—significantly higher than the 3.48 for partial completers and 3.36 for high-ability nonhonors students.

In their early study, Pflaum et al. (1985) reported a higher freshman GPA for honors students than for statistically equated comparison groups. However, there was no honors advantage with respect to one-year retention.

Problems facing research on Honors participation, retention, and graduation

As we acknowledged in our introduction, honors students tend to differ from nonhonors students at the outset in ways that arguably are related to subsequent retention and graduation rates (e.g., greater academic ability). Consequently, our question—*Is student participation in an honors program related to retention and graduation rates?*—cannot be answered with the degree of confidence that is warranted when one randomly assigns subjects to different conditions, thereby effecting group equivalence at the outset. Nevertheless, what we can do is identify a comparable group of nonhonors students (e.g., with respect to academic aptitude) and later see whether their retention and graduation rates differ from those of honors students. Further, we can employ more sophisticated procedures that statistically control for initial differences between honors and nonhonors students, rendering the two groups more comparable.

While neither strategy allows the luxury of drawing cause-and-effect conclusions, each eliminates certain "plausible rival hypotheses." For example, if we simply report that retention rates are generally higher for honors students than for nonhonors students, one rightly could wonder whether this difference merely reflects the generally higher academic ability of honors students (a plausible rival hypothesis)—not their participation in the honors program. Had we statistically controlled for differences in academic ability, however, this rival hypothesis would be nullified. Although we still would be unable, absent a randomized experiment, to unequivocally attribute the differential retention rate to participation in the honors program, we would be reasonably confident that this difference did not simply reflect an underlying difference between honors and nonhonors students in academic ability. As we elaborate below, "elimination of plausible rival hypotheses" is how we approached our analysis.

# Method

## Setting

Honors at the UMaine began in 1935, with the first four theses submitted in 1937. As with many early honors programs, a Rhodes Scholar founded the UMaine Honors Program : Stanley R. Ashby, an English professor who had been a member of the first group of American Rhodes Scholars in 1904. Ashby's goal was to incorporate into the UMaine curriculum "the individual tutorials, unfettered outside reading, and small group discussions" he valued so much at Oxford (Wicks, n.d., para. 1).

In 1962, the UMaine Honors Program expanded from the College of Arts and Sciences to include students from all colleges. The *Honors College at the University of Maine* was inaugurated forty years later, in October 2002. The Honors College was conceived to provide educational opportunities that both broaden and deepen the undergraduate experience while fostering a community of scholars comprising students, staff, and faculty. With this transition, the faculty of the new Honors College reconceived and enhanced the honors curriculum. The new model requires students to complete eighteen credits (versus eight credits previously) of interdisciplinary core courses during their first two years. With this change, students completing the honors core satisfy all five areas of the *Human Values* and *Social Contexts* component of general education, as well as the *Ethics* component, in an intentional and integrated manner. Formerly, the required honors first-year courses satisfied only three areas of *Human Values* and *Social Contexts*.

The Honors College has its home in Colvin and Balentine Halls, two elegant buildings constructed in the early 1900s. Colvin houses the recently renovated Robert Thomson Honors Center: administrative offices, two classrooms, library, seminar room, and small café.

Renovations to Colvin, scheduled to be completed by December 2008, will renew the residential spaces on the second and third floors and create a great room and visiting scholar apartment on the fourth floor. Balentine Hall is a residence for additional honors students, and it contains a classroom and substantial undesignated honors space. Future renovations call for the creation of office space for Honors College faculty and staff as well as additional classroom and recreational areas.

## Definitions

We examined one-year retention rates of honors and nonhonors students for each of five cohorts of first-time, full-time students enrolling at UMaine: Fall 2002 through Fall 2006. Consistent with prevailing practice, we defined one-year retention rate as the percentage of students in a cohort who returned the following fall. For the Fall 2002 cohort, we also examined four-year graduation rates. We began with the Fall 2002 cohort as it was the first to experience the new honors curriculum initiated in conjunction with the inauguration of the Honors College at the University of Maine.

For the one-year retention analyses, we defined an honors student as one who completed Honors 111 and 112—the first two courses in the four-course honors sequence—in the student's first two semesters. That is, we excluded from these analyses the student who completed only Honors 111, or who completed both Honors 111 and 112 but not in the first two semesters. We defined the nonhonors student as one who had never taken an honors course during the first year or thereafter. Further, to make for a fair comparison of honors and nonhonors students, we included only nonhonors students who, like honors students (as defined here), were present for both semesters of their first year.

For the analysis of four-year graduation rates, we defined an honors student as one who completed Honors 111, 112, 211, and 212 in the first four semesters. (Honors 211 and 212 are the third and fourth courses in the honors sequence.) If fewer than four honors courses were taken, or the four courses were not taken in the first four semesters, the student was excluded from this analysis. Nonhonors students had taken no honors courses (ever) and, to make for a fair comparison, these students were included in this analysis only if they were present for the first four semesters.

Thus, our comparison of honors and nonhonors students reflects a particular subset of all UMaine students: "honors students" had taken the honors courses in the timeframe described above, and "nonhonors" students were present for the same number of semesters as the honors students. These stipulations should be kept in mind when considering our results and their generalizability.

## Analyses

We compared honors and nonhonors students in a three-phase analysis. First, we compared honors and nonhonors students without making any adjustments with respect to entering characteristics. This comparison provides a helpful baseline for considering subsequent comparisons.

Second, we then made the same comparison using a more select group of nonhonors students. We identified this select group by successively eliminating nonhonors students having low SAT scores until the median SAT score for this group equaled that for the honors students; we did this separately for each cohort. We also identified the select group of nonhonors students who were in the highest 20% of their high school class. By comparing honors students and a

select group of nonhonors students, we are able to examine retention and graduate rates of more comparable groups—at least with respect to SAT scores and high school rank. A shortcoming of this analysis is that, by restricting nonhonors students in this fashion, the vast majority of students in this group were lost (as will be seen below). An additional shortcoming is that the method of forming the select group of nonhonors students is statistically rather informal.

The third phase of our analysis addresses these shortcomings. In this analysis, we used logistic regression to examine the relationship between honors participation and retention/graduation rates, statistically controlling for SAT scores and high school rank. Specifically, we regressed student retention (1 = returned the following fall semester, 0 = did not return) on honors status (1 = honors, 0 = nonhonors), high school rank (expressed in deciles), and total SAT. We lose relatively few students by doing this analysis, statistical control is more sophisticated than "hand picking" a more select group of nonhonors students, and results are obtained in a single analysis (rather than separately for SAT selectivity and rank selectivity).

## Results

### Retention After One Year

Although the majority of honors and nonhonors students returned in the fall of their second year, the percentage was greater for honors students in each of the five cohorts (see Table 1, first column). Consider the 2006 cohort, for example, where the retention rate for honors students was 94% versus 81% for nonhonors students. This result is not unexpected insofar as these comparisons are not adjusted for either SAT or high school rank—both of which have been shown to be related to retention (e.g., Murtaugh, Burns, & Schuster, 1999). Again, perhaps the differences in the first column simply reflect retention-relevant differences between honors and

nonhonors students at the outset. The honors advantage persists, however, even when the comparisons are restricted to a more select group of nonhonors students with respect to SAT scores (second column) or high school rank (third column). Focusing on high school rank, for example, we see that 90% to 96% of honors students return for their second year, compared to 85% to 90% for nonhonors students. Further, the difference is larger for more recent cohorts: a 2-percentage-point difference in 2002 grows to a 9-percentage-point difference in 2006.

These results are consistent with what we learn from the logistic regression analyses (Table 2). We provide the full regression equation for each cohort although our primary interest lies in the odds ratio (last column in Table 2). Consider the 2006 cohort, where the odds ratio for the honors variable is 3.1. This means that the odds of an honors student returning the following fall semester are roughly three times greater than the odds of a nonhonors student returning—regardless of SAT and high school rank. Table 2 shows that the odds ratio for the honors variable generally increases with successive cohorts (although dipping slightly in 2006). We begin with a statistically nonsignificant odds ratio of 1.0 ($p = .98$) for the 2002 cohort. That is, honors and nonhonors students have "even odds" of returning the following fall semester. With the 2003 cohort, the odds ratio increases to a marginally significant 1.8 ($p = .08$). In subsequent cohorts, the honors odds ratios are all statistically significant. As with our less sophisticated analyses reported in Table 1, then, the relationship between honors participation and retention generally grew stronger with successive cohorts.

## Four-Year Graduation Rates

We examined four-year graduation rates for the 2002 cohort. As Table 3 shows, almost two thirds (64%) of honors students graduated in four years compared to 43% for nonhonors

students (first column), a discrepancy that does not change appreciably when based on a more select group of nonhonors students with respect to SAT scores (second column). However, when the group of nonhonors students is selected based on high school rank, their four-year graduation rate jumps to 60%—not markedly different from that for honors students. The follow-up logistic regression analysis yields a similar finding: among 2002 cohort members, honors and nonhonors students essentially had even odds of graduating in four years (regardless of SAT scores and high school rank).

## Discussion

Our results suggest that participation in the UMaine Honors College is related to one-year retention. Although our analyses do not permit cause-and-effect conclusions regarding the relationship between honors participation and retention, we at least have weakened any plausible rival hypothesis that is predicated on initial differences between honors and nonhonors students with respect to academic ability (as measured by SAT and high school rank). Thus, our findings are more suggestive of a retention effect than would be the case had we limited our study to a simple comparison of these two groups.

This suggestion is stronger still in the apparent increase in the magnitude of the honors advantage over time (i.e., across subsequent honors cohorts). This trend is not unexpected given the 2002 modifications to the honors curriculum—which, with each successive year, have been enacted with greater fidelity. A larger percentage of the honors College population in each successive year has been involved with the new curriculum, and thus each successive cohort is more integrated and less isolated. From the outset of this transition, we observed that, as the 2002 cohort made its way through the Honors College, these students increasingly viewed themselves as *Honors College students*. As this community continued to coalesce and grow, it

provided more support and more experienced mentoring to incoming Honors College students. In whole or in part, these factors may have contributed to the generally increasing relationship between honors participation and retention. That said, we might expect the honors effect on retention to plateau now that there is a stable honors community having a common set of experiences. Future analyses will tell.

We found no relationship between honors participation and four-year graduation rates—a relationship we could examine only for the 2002 cohort. Whether this null finding persists with subsequent cohorts remains to be seen. However, one might expect that the increasing honors advantage with respect to retention, and the hypothesized causes behind it, ultimately will result in an honors advantage with respect to four-year graduation rates as well.

Our statistical control of SAT and high school rank notwithstanding, there doubtless are other entering characteristics in which honors and nonhonors students arguably may differ. Academic motivation comes to mind (for which high school rank is only a crude proxy, to be sure). Whether our results hold up when such variables are taken into account, only subsequent investigations can say. Further, if in fact honors participation influences retention, our analyses are silent on *how*. Is it that honors participation strengthens social and academic engagement, as Shushok (2006) suggests? Does honors participation perhaps engender institutional commitment? Further, maybe the relationship between honors participation and retention is multiplicative rather than additive; maybe the retention effect is stronger for honors students having certain characteristics or in certain situations. For instance, anecdotally there seems to be an "honors housing" effect at UMaine—an effect that is supported by some preliminary research (Houle, 2005). Subsequent studies can throw additional light here as well.

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Table 1. One-year retention rates.

| | **Retention Rates After 1 year** | | | | | |
|---|---|---|---|---|---|---|
| | Unadjusted | | SAT-select[a] | | HS rank-select[b] | |
| **Cohort** | nonHonors | Honors | nonHonors | Honors | nonHonors | Honors |
| 2006 | 81% (1,159/1,431) | 94% (174/185) | 86% (194/226) | 94% (174/185) | 85% (334/391) | 94% (174/185) |
| 2005 | 82% (1,127/1,369) | 96% (197/205) | 81% (154/190) | 96% (197/205) | 90% (351/391) | 96% (197/205) |
| 2004 | 82% (1,046/1,276) | 93% (192/206) | 82% (132/161) | 93% (192/206) | 88% (313/354) | 93% (192/206) |
| 2003 | 84% (1,091/1,304) | 91% (163/180) | 87% (136/156) | 91% (163/180) | 86% (355/412) | 91% (163/180) |
| 2002 | 82% (1,076/1,319) | 90% (172/192) | 82% (186/228) | 90% (172/192) | 88% (332/376) | 90% (172/192) |

Note. All students were registered for the first two semesters.

[a] For each cohort, nonHonors students in these comparisons were selected so that their median SAT score equaled the median SAT score of Honors students.

[b] All nonHonors students in these comparisons were in the top 20% of their high school class.

Table 2. Results of logistic regression analyses: One-year retention rates.

| Cohort | | *b* (*s.e.*) | *p* | odds ratio |
|---|---|---|---|---|
| 2006 | constant | .94 | | |
| | Honors status | 1.14 (.44) | .01 | 3.1 |
| | high school rank | -.16 (.04) | <.001 | .86 |
| | SAT | .00 (.001) | .11 | 1.0 |
| 2005 | constant | 2.65 | | |
| | Honors status | 1.34 (.48) | .01 | 3.8 |
| | high school rank | -.28 (.04) | <.001 | .8 |
| | SAT | .00 (.001) | .90 | 1.0 |
| 2004 | constant | 2.30 | | |
| | Honors status | .97 (.38) | .01 | 2.6 |
| | high school rank | -.20 (.05) | <.001 | .8 |
| | SAT | .00 (.001) | .88 | 1.0 |
| 2003 | constant | 2.75 | | |
| | Honors status | .60 (.34) | .08 | 1.8 |
| | high school rank | -.16 (.05) | <.001 | .8 |
| | SAT | .00 (.001) | .41 | 1.0 |
| 2002 | constant | .95 | | |
| | Honors status | .01 (.31) | .98 | 1.0 |
| | high school rank | -.19 (.04) | <.001 | .8 |
| | SAT | .00 (.001) | .6 | 1.0 |

Note. The dependent variable is the dichotomous measure of student retention (1 = returned the following fall semester, 0 = did not return); the independent variables are Honors status (1 = Honors, 0 = nonHonors), total SAT, and high school rank (decile). *N*s for these analyses are: 2006 cohort (Honors = 185, nonHonors = 1,202), 2005 cohort (Honors = 205, nonHonors = 995), 2004 cohort (Honors = 206, nonHonors = 955), 2003 cohort (Honors = 180, nonHonors = 993), 2002 cohort (Honors = 192, nonHonors = 1,025).

Table 3. Four-Year Graduation Rates (2002 cohort).

| | 4-year graduations rates | | | | | |
|---|---|---|---|---|---|---|
| | unadjusted | | SAT-select[a] | | HS rank-select[b] | |
| Cohort | nonHonors | Honors | nonHonors | Honors | nonHonors | Honors |
| 2002 | 43% (436/1009) | 64% (76/118) | 48% (83/173) | 64% (76/118) | 60% (191/320) | 64% (76/118) |

Note. All students were registered for the first four semesters.

[a] For each cohort, nonHonors students in these comparisons were selected so that their median SAT score equaled the median SAT score of Honors students.

[b] All nonHonors students in these comparisons were in the top 20% of their high school class.