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# The Value Added of Honors Programs in Recruitment, Retention, and Student Success: Impacts of the Honors College at the University of Mississippi

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In a recent essay, M. Roy Wilson (2015), President of Wayne State University, and Jerry Herron, Dean of the Honors College, discuss the value added of honors programs in terms that should be familiar to numerous constituencies associated with honors education. Wilson and Herron write about honors education largely in terms of the experiences it provides students:

the [honors] college is not tied to any particular academic discipline; instead, it represents the virtues of a liberal education that reaches across departments, schools, and colleges. For our students, the aim is to integrate

the specialized—and essential—knowledge of the disciplines into a broader understanding of themselves, our community, and the world. With understanding comes engagement. The honors experience at Wayne State is based on four pillars—community, service, research, career—which define the curricular and co-curricular elements of our program and also highlight the distinctive strengths of this university, at the same time making real the value added, high-impact practices that define the very best of undergraduate education. (pp. 172–73)

In this important conceptualization, honors education is about academic accomplishment but not in an isolated, discipline-specific sense. Rather, the value added of honors hinges on something broader and perhaps less easily defined. Honors students may major in physics, engineering, or literature, but they are also immersed in an environment that forces them beyond these interests. Honors education is about challenging students to focus on personal growth both as citizens and scholars, and in a poignant essay, Jacqueline P. Kelleher (2005) describes her experience as an honors student:

It was about connectivity—to each other, to our families, to our community, and to global society. It was about not being afraid to try new things or work with new ideas; it was about digging deeper into a concept or message even when it was uncomfortable or downright impossible to understand. It was about admitting our failures and recognizing our humanity. It was, and is still today. It served as the building blocks for the new path I carved out for myself. It was the scaffold I needed to discover who I was as a unique contributor to this world and what talents I could bring to the table of life. (p. 57)

University administrators, honors deans, and scholars are also increasingly examining the concept of value added and honors in more concrete terms. As college costs increase and state support declines, administrators have become more dependent on tuition

dollars—driven by the recruitment and retention of students—to help drive university budgets. Recent work by Mitchell, Leachman, and Masterson (2017) highlights the extent of these changes and resulting pressures. Specifically, the authors find that state spending for public colleges and universities is still significantly below levels prior to the Great Recession of 2008 (Mitchell et al. 2017:2). At the same time, tuition at four-year public universities has increased an average of 35 percent since 2008 (Mitchell et al. 2017:3). Recession-related budget cuts contributed extensively to increased costs of public higher education, and these funds have generally not been replaced post-recession (Mitchell et al. 2017:5). One result is a cost shift from states to students; another is an increased concern among university administrators about recruiting and retaining students as a mechanism to mitigate budget concerns.

Along with declines in state spending comes increased pressure to demonstrate what the university is getting in return for its investment in a relatively small group of honors students. The challenge here is less on what honors programs provide in terms of a meaningful experience and personal and academic growth for students, but, rather, on how well they contribute to the parallel university goals of recruitment and retention.

Of course, the broad goals of honors education and university recruitment and retention are not necessarily mutually exclusive. As West (2014) points out, an honors college can provide value to a university by recruiting high-achieving students who likely would not enroll were it not for the honors environment. In addition, the nature of the honors setting, highlighted by quality instruction, small class sizes, closer relationships with professors, and a sense of intellectual community, may foster increased retention among honors students (West 2014). Taken together, then, we see the potential value added of honors education in terms of not just the opportunities for intellectual and personal growth that honors programs accrue to honors students and faculty, but also as an additional resource for university administrators as they wrestle with the increasingly complex financial realities of higher education.

## **THE ROLE OF THE HONORS COLLEGE IN RECRUITMENT, RETENTION, AND STUDENT SUCCESS**

In this paper, we address the issue of value added in honors education by examining recruitment, retention, and student success at the University of Mississippi (UM) and its Sally McDonnell Barksdale Honors College (SMBHC). We utilize survey data of honors students as well as a matching analysis comparing honors students and the overall student body across a variety of subgroupings and outcomes. Our goal is to add to the growing body of research that more clearly and rigorously delineates the possible impact and value of honors programs at state public universities.

Using a variety of methodological techniques, previous studies generally show a positive and significant influence for honors college participation on student retention and academic success, especially in the initial years on campus. Cosgrove (2004), for example, compares three sets of students: honors students who completed all program requirements, honors students who did not complete all requirements, and non-honors students with similar incoming academic credentials. Cosgrove (2004) finds that honors program “completers” perform better than their partial honors and comparable non-honors counterparts in terms of college GPA, graduation rates, and length of time to graduation. Shushok (2006) finds that honors students at the University of Maryland, College Park had higher first-year GPAs and retention rates at the end of the first year, though statistically significant differences in rates of retention disappeared by the fourth year. Slavin, Coladarci, and Pratt (2008), used logistic regression to examine retention and graduation rates at the University of Maine and found similar results of significant one-year effects that dissipated by the fourth year. In addition, Keller and Lacy (2013) found that participation in the honors program at Colorado State University “was associated with meaningful increases in the proportion of these students who returned for their second year at the university and in the proportion of these students who graduated within a four-, five-, or six-year period” (p. 83).

## Setting

The University of Mississippi is the state's flagship university, as well as its largest, enrolling 23,780 students across its main, regional, professional, and Medical School campuses.<sup>1</sup> The University of Mississippi is also ranked among the nation's fastest-growing institutions, with the student body at the main and regional campuses growing approximately 60 percent during the past decade. Overall enrollment on these campuses is currently at 20,890 (86.7% undergraduate). Undergraduates entered fall 2017 with an average ACT score of 25 and high school GPA of 3.59. Undergraduate minority enrollment is 22.1 percent (12.5% African American). The undergraduate student body is 54.3 percent Mississippi residents and 54.8 percent female.<sup>2</sup>

Endowed in 1997, the honors college has also exhibited significant growth during the past twenty years, and it is currently home to over 1,500 undergraduates, including an average entering class of approximately 400 first-year students. These students represent 38 states and 11 countries, and they are engaged in academic pursuits across the broad spectrum of disciplines at the University of Mississippi. Fifty-four percent of honors students are Mississippi residents, 63 percent are female, and 12 percent are minorities (3.6% African American). The average ACT for the most recent first-year class is 31, along with an average high school GPA of 3.99.

The honors environment is one where students are encouraged to merge intellectual rigor with community action, fostered initially by a two-semester first-year seminar sequence focusing on broad intellectual themes, difficult social issues, contemporary challenges, and self-discovery. In addition, honors students have access to a first-year student living-learning community residence, advising (including a dedicated advisor for national scholarships), travel fellowships, and experiential learning. Class sizes are capped at 15 students and are expected to be seminar-based and contain significant writing and critical thinking components. Part of the honors experience is engaging in the "Community Action Challenge," which encourages students to become agents of change in their own community. Finally, honors students must accumulate

a minimum of 30 credit hours in honors courses, maintain a 3.5 GPA, and successfully write and defend an honors thesis to graduate with honors.

## Data

We examined the value added of the honors college using two data sources. In spring 2016, we undertook a survey of currently enrolled (or recently graduated) students in the honors college. After receiving IRB approval, we contacted 1,091 students from the four most recent academic classes (entering in the fall semesters of 2012–2015) to distribute surveys using the online survey software Qualtrics.<sup>3</sup> Of the 1,091 students emailed, we received 521 completed surveys for a response rate of 47.8 percent. Survey responses were broken down by academic class (year of entering fall semester) as follows: 15.2 percent ( $n = 79$ ) were from the class of 2012; 25.9 percent were from 2013 ( $n = 135$ ); 24.2 percent were from 2014 ( $n = 126$ ); and 34.7 percent ( $n = 181$ ) were from 2015. Students were asked a battery of questions allowing us to examine factors related to student recruitment, satisfaction, and success at the honors college. Of particular interest for our purposes here were perceptions of the prestige of the honors college (both individually and relative to the university as a whole) and whether the student would have attended the university were it not for the honors college.

In addition, we also made use of administrative data from honors and university student data systems. To determine factors that influence progress in the program, we examined the path of students through both the honors college and the university from 2012–2015. For honors students, we evaluated the entering classes from each of the last four years for a sample size of 1,503 students. We then matched these student attributes with similar data for the overall student body. We discuss the process of data matching in greater detail below. Using information collected in the applications and other updated information as the students completed each semester, we analyzed factors that may have a significant influence on their likelihood of staying active in the honors college as of the end of the spring semester in 2016.

## FINDINGS

### Value Added and Recruitment

Our principal interest in examining honors student survey data was to determine if the honors college does provide added value to the university via recruitment of higher achieving students. Following recent work by Nichols and Chang (2013), we asked students to respond to a battery of possible influences on their initial decision to enroll in the honors college. Similar to the case in Nichols and Chang (2013), respondents overwhelmingly cited aspects of the honors college that distinguish it from the regular university environment as prominent factors in their decision to attend the university and its honors college. The availability of small class sizes was cited as most influential in the decision to enroll, with 77.6 percent of respondents noting this factor as either “very influential” or “extremely influential” in their decision to attend. Opportunities for deeper learning (63.6%) and the possibility of research, travel, and leadership opportunities (58.8%) are also strong influences, as was the opportunity to make meaningful connections with faculty (52.8%).

Of additional interest were differences in student evaluations of the perceived prestige of both the honors college and the university as influences on the decision to attend the university. Table 1 presents the results of these comparisons. From this initial look at the data, we see that the honors college provides added value as a recruitment tool for the university. Almost 60 percent of respondents cited the prestige of the honors college as very or extremely influential on their decision to attend. Students were over twice as likely to report that the reputation of the honors college was very or extremely influential as they were to report that the reputation of the university was very or extremely influential in their decision. We find important differences at the other end of the evaluative spectrum as well. Whereas just 3.6 percent of honors students indicate that the prestige of the honors college was not influential for their decision to enroll, one quarter (25.8%) viewed the prestige of the university as not influential for their decision. A chi-square test<sup>4</sup>



comparing responses to the perceived prestige of the honors college and the university confirms that honors students are significantly more likely to credit the honors college with their decision to enroll.

We explored the potential recruitment draw of the honors college further by asking a direct question about the impact of honors and the decision to attend the university:

One final question: would you have attended the University of Mississippi if you **had not** been accepted to The Sally McDonnell Barksdale Honors College?

Table 2 shows initial results, along with comparison by residence (in-state vs. out-of-state) and ACT score (31 and below vs. 32 and above).<sup>5</sup> Beginning with the entire set of respondents, we see that over half (51.7%) indicated it is likely (perhaps or definitely) that they would have attended the university even if they had not been accepted into the honors college. Importantly, however, well over one third (37.3 percent) responded that it was “unlikely” or that they would have “definitely not” attended if not for the invitation

**TABLE 1. REASONS FOR DECISION TO ENROLL: COMPARING PERCEIVED PRESTIGE OF HONORS COLLEGE AND UNIVERSITY (PERCENT)**

Response	Prestige of Honors College	Prestige of University
Extremely Influential	22.7 (102)	11.1 (50)
Very Influential	36.8 (165)	15.6 (70)
Influential	25.0 (112)	26.7 (120)
Somewhat Influential	11.8 (53)	20.7 (93)
Not Influential	3.6 (16)	25.8 (116)
Total N	448	449

Notes: Numbers in parentheses are frequencies. A  $X^2$  test for this contingency tables indicates that the association between student response and perceived prestige is significant ( $X^2 = 152.88$ ,  $df = 16$ ,  $p \leq .001$ ).

to join the honors college. In other words, based on these survey responses, almost 150 students from an incoming class of 400 honors students probably would not be attending UM were it not for the honors college.

While a substantial percentage of students self-reported that they would probably not have attended UM without the honors college, this figure varies by both residence and ACT score. A much higher percentage of non-residents indicate they would have been unlikely to attend (49.4% compared to 27.5% for Mississippi residents). Similarly, students with the highest ACT scores are more inclined to say that they would not have attended the university without acceptance into the honors college (47.2%). Chi-square tests indicate that both of these associations are significant (Table 2).

Breaking down these data by both residency and ACT score reveals further insights into the impact of the honors college on UM enrollment, particularly among Mississippi's highest achievers on the ACT (Table 3). The students most likely to respond that they would have attended UM even without admission into the honors college are those who reside in-state and who have an ACT score at or below the 31 average for the honors college. Of these students, almost three-quarters (72.3%) said that it was likely that they would

**TABLE 2. REPORTED LIKELIHOOD OF ATTENDING UM IF NOT FOR ACCEPTANCE AT HONORS COLLEGE (PERCENT)**

Response	Overall	Mississippi	Non-	ACT < 32	ACT ≥ 32
		Resident	Resident		
Perhaps or Definitely	51.7	60.7	40.5	62.4	37.3
	(196)	(128)	(68)	(136)	(60)
Neither	11.1	11.9	10.1	7.8	15.5
	(42)	(25)	(17)	(17)	(25)
Unlikely or Definitely Not	37.2	27.5	49.4	29.8	47.2
	(141)	(58)	(83)	(65)	(76)
Total N	379	211	168	218	161

Notes: Numbers in parentheses are frequencies. A  $X^2$  test indicates that the association between student response and residency is significant ( $X^2 = 19.7$ ,  $df = 2$ ,  $p \leq .001$ ). A  $X^2$  test indicates that the association between student response and ACT score is significant ( $X^2 = 23.82$ ,  $df = 2$ ,  $p \leq .001$ ).

have attended UM even if they had not been admitted to the honors college. In other words, these are students with a strong likelihood of enrolling at the university, regardless of their acceptance into the honors college.

When looking at their counterparts with the highest ACT scores (32 and above), however, we find that the honors college does indeed add significant value to the appeal of the university in terms of recruiting high-quality Mississippi students. Compared to the almost three-quarters of students in the 31 and below ACT category, only 42 percent of Mississippi residents in the higher ACT group indicated that they would likely have attended UM without acceptance into the honors college. On the other end of the spectrum, Mississippi residents in the 32+ ACT group were nearly twice as likely to respond that it was “unlikely” or that they would “definitely not” have attended the university if not for the honors college admission (20.1% vs. 39.5%). A chi-square test reveals this association between the likelihood of a Mississippi resident attending UM

**TABLE 3. REPORTED LIKELIHOOD OF ATTENDING UM IF NOT FOR ACCEPTANCE AT HONORS COLLEGE, BY RESIDENCY AND ACT (PERCENT)**

Response	Overall	In-State		Out-of-State	
		ACT < 32	ACT ≥ 32	ACT < 32	ACT ≥ 32
Perhaps or Definitely	51.7 (196)	72.3 (94)	42.0 (34)	47.3 (42)	32.5 (26)
Neither	11.1 (42)	7.7 (10)	18.5 (15)	8.0 (7)	12.5 (10)
Unlikely or Definitely Not	37.2 (141)	20.0 (26)	39.5 (32)	44.3 (39)	55.0 (44)
Total N	379	130	81	88	80

*Notes:* Numbers in parentheses are frequencies. A  $X^2$  test indicates that an association between student response and ACT score for Mississippi residents is significant ( $X^2 = 19.41$ ,  $df = 2$ ,  $p \leq .001$ ). A  $X^2$  test indicates that an association between student response and ACT score for Mississippi non-residents is not significant ( $X^2 = 4.22$ ,  $df = 2$ ,  $p \leq .121$ ). A  $X^2$  test indicates that an association between student response and residency for those in the < 32 ACT group is significant ( $X^2 = 15.5$ ,  $df = 2$ ,  $p \leq .001$ ). A  $X^2$  test indicates that an association between student response and residency for those in the ACT ≥ 32 group is not significant ( $X^2 = 3.95$ ,  $df = 2$ ,  $p \leq .138$ ).

with honors acceptance and ACT score is significant ( $\chi^2 = 19.41$ ,  $df = 2$ ,  $p \leq .001$ ). In terms of helping to stem the brain drain and bringing the state's best students to UM, the honors college offers significant value added.

Similar results are apparent in other comparisons across the residency and ACT groups. Not surprisingly, the impact of honors admission appears strongest for non-residents in the 32+ ACT category because they are students with both the fewest ties to the state and the most academic options. Of this group, 55 percent indicate that they likely would not have attended the university without the offer of admission from the honors college. In contrast, only 32.5 percent indicated it was likely that they would have attended without the honors admission.

As noted in Table 3, chi-square tests indicate that these associations between residency-test categories and student response are significant with two important exceptions. First, for nonresidents, those students who indicate the least likelihood of attending UM without the honors college, ACT score is not significantly associated with their response on the likelihood of attending without honors admission. Without the honors college, high-achieving non-residents would be less likely to attend UM regardless of their ACT score. In addition, we find no significant association between honors acceptance and the likelihood of attending UM when comparing the highest-achieving residents and non-residents: those in the 32+ ACT category. This survey reveals that Mississippi's highest-achieving residents report a similar impact of honors admission on their decision to attend UM as their counterparts from other states.

These data inform some concluding observations regarding the honors college and recruitment to UM. With regard to Mississippi residents at or below the honors college average ACT score, there is modest value added in terms of honors recruitment. These students are highly likely to attend the university regardless of honors. This result is not terribly surprising because this group most closely resembles the student body writ large. Yet when we examine the impact of honors college admission across a range of residency and ACT comparisons, we can isolate those students whom we can reasonably expect to have increased options, both in terms of schools

and scholarship opportunities. Here the value added component of honors status becomes obvious. Our data reveal the honors college to be a significant component in the decisions of Mississippi's highest-achieving students to attend the university. One significant additional consequence is that attracting outstanding students from other states has a strong impact on the diversity of the university student body.

### **Value Added and Retention, Completion, and Academic Success**

We also examine whether the honors college serves a function in retaining students. Year-to-year, even semester-to-semester, retention is an important consideration for universities today, and any honors program that increases retention provides added value. While proponents of honors programs often presume higher academic performance and retention rates among honors students, determining the role that participation in an honors program contributes to this success can be problematic. For example, given the nature of the university populations, honors students often enter the academy with a greater likelihood of success in the first place.

Because of the role of the honors college in recruiting students to campus, we examine whether students who start in the honors college are more likely to stay at the university, have higher first-year GPAs, and are more likely to graduate than those who did not start in the honors college. In the analyses in Tables 4–8, we focus on retention, academic performance, and graduation rates among enrolling students at the University of Mississippi between fall 2012 and fall 2015. The dependent variables are whether students returned for the fall semester of their second (2012–2015 cohorts included in the analysis), third (2012–2015), and fourth years (2012–2014). For the 2012 cohort, we also examined whether a student graduated in four years. Finally, we evaluated an additional measure of student success: GPA after the first year for all years in the data. We classified honors participation as initial enrollment in the program and if the student remained in good standing in the honors college thereafter (Keller and Lacy 2013). Additionally,

we dropped all non-honors students with an ACT lower than 21 from the analysis because the honors college did not have any participants with an ACT score lower than 21. We dropped some students who had missing data on any of the variables included in the analysis; otherwise, each student appears as one observation in the analysis.

Descriptively, Table 4 shows the performance of honors and non-honors students on the dependent variables. We find that honors students outperform their non-honors peers across all measures with retention rates between 10 and 22 percentage points higher, a graduation rate that is 29 percentage points higher, and a GPA that is .71 higher. These differences suggest initial support for the value added of honors education in retention and student success.

These descriptive results do not, however, control for any background factors that may be driving the results beyond participation in the honors college. To account for this factor, we include various background demographics and academic performance measures as controls. Table 5 shows the control variables by honors status. We controlled for demographics including being a minority (simplified to whites vs. nonwhites) and gender. To capture academic performance, we use both ACT scores and high school GPA. We also controlled for student origin with three groups: in-state students from Mississippi and two out-of-state categories: South<sup>6</sup> and non-South. Finally, we included beginning academic year as a control to account for any unmeasured differences across cohorts.

**TABLE 4. DESCRIPTIVE OUTCOMES**

Measure	Honors	Non-honors (ACT ≥ 21)	Difference
Return Year 2 (2012–2015)	96.67	85.72	10.95
Return Year 3 (2012–2015)	94.08	73.87	20.21
Return Year 4 (2012–2014) <sup>a</sup>	92.29	69.89	22.40
Graduated in Four Years (2012) <sup>b</sup>	79.51	50.92	28.59
GPA After Year 1 (2012–2015)	3.62	2.91	.71
n	1,503	9,797	

<sup>a</sup>The n is 1,103 for honors and 6,934 for non-honors (ACT ≥ 21).

<sup>b</sup>The n is 371 for honors and 2,115 for non-honors (ACT ≥ 21).

To measure the effect of honors program participation while controlling for other important factors, we used matching analysis. This type of study fits nicely with the matching framework of isolating treatment effects, such as honors college participation, in observational studies. A matching analysis matches students in the honors college to those most similar to them not in the honors program to provide a point of comparison for evaluating the effect of honors on academic performance and the likelihood of remaining in school and graduating. This method is similar to the one employed by Keller and Lacy (2013). We used a “nearest neighbor” approach in which the model selects the non-honors student or students who match the closest on the control variables with the model specifying exact matches on race, gender, and region. Specifically, the models use the Mahalanobis distance matching (MDM) procedure, which matches each treated unit to the nearest control unit within a specific distance. According to King et al. (2011), the MDM approach then removes treated units that do not

**TABLE 5. DESCRIPTIVE STATISTICS FOR CONTROL VARIABLES**

Measure	Honors	Non-Honors (ACT $\geq$ 21)
Minority	11.64 (175)	14.58 (1,428)
Female	62.61 (941)	54.64 (5,353)
High School GPA <sup>a</sup>	3.94 (.1375)	3.49 (.4382)
ACT <sup>a</sup>	30.29 (2,413)	24.94 (3,003)
Region		
<i>Mississippi</i>	56.09 (843)	37.03 (3,628)
<i>South</i>	31.00 (466)	43.61 (4,272)
<i>Non-South</i>	12.91 (194)	19.36 (1,897)
Year		
2012	24.68 (371)	21.59 (2,115)
2013	24.68 (371)	23.63 (2,315)
2014	24.82 (373)	25.92 (2,539)
2015	25.82 (388)	28.87 (2,828)

Note: Numbers in parentheses are group frequencies except where noted.

<sup>a</sup>Numbers in parentheses for this row are standard deviations.

have a match within the specified distance. As Dehejia and Wahba (2002) discuss, this method reduces bias. The MDM approach may lead to less precise estimates when a large number of treated units must be removed from the model because of a lack of a matching unit within the specified distance, while propensity score matching, a common alternative, may produce more precise estimates but introduce more bias into the estimates (Dehejia and Wahba 2002). King and Nielsen's (2016) recent work also echoes the concerns of bias using propensity score matching. Given that relatively few treated units (honors students) are removed using the MDM procedure, we proceeded with the nearest-neighbor approach rather than propensity score matching. As a check for robustness, we ran the models using propensity score matching: the results did not change substantively. We specifically used exact matches for minority, gender, and regional status and adjusted for potential bias on the continuous variables high school GPA and ACT score.<sup>7</sup>

Table 6 presents the average treatment effect on the expected difference in potential outcomes among individuals who participated in the honors college. This result is the effect of honors college membership on retention or performance while controlling for the other variables. Table 6 shows a significant and positive influence for honors college participation compared to what would have been expected had these students not participated in honors. Compared to their nearest-neighbor matches, honors college students were 2.73 percent more likely to return for year two, 5.03 percent more likely to return for year three, and 10.12 percent more likely to return for year four. They also were 8.36 percent more likely to graduate in four years although this effect was only marginally statistically significant ( $p = .08$ ). Finally, honors participation led to a statistically significant increase of GPA of .17 points after the first year.

While these expected differences are smaller than the differences observed in the descriptive analysis presented in Table 4, the results highlight the estimated unique effect of honors college participation, adjusting for the combined effects of all of the control variables (Keller and Lacy 2013). For example, participation in the



honors college accounts for 2.73 percentage points of the 10.95 percentage point difference between honors and non-honors students in Table 4 and 10.12 percentage points of the 22.40 percentage point difference for returning in year four. The 2.73 percentage point difference is slightly higher than that reported for Colorado State students by Keller and Lacy (2013); the 10.95 percentage point observed difference is very similar to the unadjusted difference reported in that study.

These results suggest a value added for students participating in the honors program. To test if honors participation has more of an effect on certain types of students in the program, we broke the sample into two groups: those with ACT scores above average for honors students and those with ACT scores at or below the average. While we controlled for ACT in the model in Table 6, this additional analysis allowed us to focus specifically on the groups of interest discussed earlier in the paper. Table 7 shows the MDM results for those students with ACTs above the honors college average. There are 502 honors students with an ACT greater than or equal to a 32 and 272 “nearest neighbor” non-honors students in the sample. For these high-achieving students, the treatment effect of the honors experience is not significant for retention in years two and three, nor is it for the likelihood of graduating in four years for the 2012 cohort. We do, however, find significant and substantively large effects for the retention in year four and for first-year GPA.

**TABLE 6. NEAREST NEIGHBOR MATCHING RESULTS**

Outcome	Expected Difference	Robust SE	n
Return Year 2 (%)	2.73	.0105**	11,234
Return Year 3 (%)	5.03	.0144***	11,234
Return Year 4 (%)	10.12	.0192***	7,996
Graduated in 4 Years (%)	8.36	.0469	2,386
First-Year GPA	.17	.0222***	11,234

\* $p \leq .05$ , \*\* $p \leq .01$ , \*\*\* $p \leq .001$

Notes: The expected difference is the average effect of honors experience vis-à-vis the comparable “nearest neighbor” students. In the Year 2, Year 3, and First-Year GPA models, 66 observations were dropped due to a lack of suitable matches. In the Year 4 model, 41 observations were dropped, and in the Graduated in 4 Years model, 100 observations were dropped due to a lack of suitable matches.

These results suggest that participating in the honors program offers some value on retention and academic performance beyond what we would normally expect for otherwise high-achieving students.

Table 8 presents MDM results for those students with ACT scores at or below the honors college average. There are 1,001 honors students and 9,525 “nearest neighbor” non-honors students in the sample with ACTs less than 32. The results show a similar pattern and substantive results comparable to those in Table 6, which is not surprising given most of the overall sample comes from this group. The one notable exception is the significant influence of honors participation on the likelihood of graduating in four years (cf. 10.71% [ $p \leq .05$ ] to 8.36% [n.s.] in Table 6).

Overall, the results in Tables 6–8 show similar patterns to those in previous studies on retention from across the country. Generally, students are more likely to be retained from year one to year two with significantly higher first-year GPAs when they participate in the honors program. The results also show some influence for retention in years three and four, with a notable bump for high-achieving students in year-four retention. While honors participation did not significantly increase the likelihood of graduating in four years in the overall model (Table 6) or for high-achieving students (Table 7), it was significant for those students with an ACT at or below the honors college average (Table 8). The matching method allows for

**TABLE 7. NEAREST NEIGHBOR MATCHING RESULTS  
(STUDENTS WITH ACT  $\geq$  32)**

Outcome	Expected Difference	Robust SE	n
Return Year 2 (%)	.78	.0178	769
Return Year 3 (%)	6.94	.0435	769
Return Year 4 (%)	16.29	.0505**	477
Graduated in 4 Years (%)	-9.56	.1521	127
First-Year GPA	.26	.0647***	769

\* $p \leq .05$ , \*\* $p \leq .01$ , \*\*\* $p \leq .001$

Notes: The expected difference is the average effect of honors experience vis-à-vis the comparable “nearest neighbor” students. In the Year 2, Year 3, and First-Year GPA models, 5 observations were dropped due to a lack of suitable matches. In the Year 4 model, 23 observations were dropped, and in the Graduated in 4 Years model, 15 observations were dropped due to a lack of suitable matches.

an isolation of the unique effect of honors participation by creating a comparable group of students who do not participate in honors across a range of other variables, such as demographic features or high school academic performance, in the student population. Analyses using this methodological approach show that honors participation does produce better retention and academic performance outcomes.

Combining these results with those in the analysis of university student recruitment, we find that while students with an ACT at or below a 31 are very likely to attend the university regardless of honors participation, being a part of the honors program increases their likelihood of staying at the university and having greater initial academic success. For those students with an ACT greater than the honors college average, being participants in honors is a major reason why they chose to attend the university. This participation, while not as strongly associated with retention, does provide a boost to their academic success and long-term retention at the university. The value of the honors college is in attracting both the state's top students and those from out of state. Additionally, for those students most likely to attend the university regardless of honors admission, the honors college experience increases their academic performance relative to comparable non-honors students.

**TABLE 8. NEAREST NEIGHBOR MATCHING RESULTS  
(STUDENTS WITH ACT < 32)**

Outcome	Expected Difference	Robust SE	n
Return Year 2 (%)	3.81	.0120**	10,465
Return Year 3 (%)	5.60	.0141***	10,465
Return Year 4 (%)	10.12	.0207***	7,421
Graduated in 4 Years (%)	10.71	.0498*	2,247
First-Year GPA	.17	.0235***	10,465

\* $p \leq .05$ , \*\* $p \leq .01$ , \*\*\* $p \leq .001$

Notes: The expected difference is the average effect of honors experience vis-à-vis the comparable "nearest neighbor" students. In the Year 2, Year 3, and First-Year GPA models, 61 observations were dropped due to a lack of suitable matches. In the Year 4 model, 116 observations were dropped, and in the Graduated in 4 Years model, 97 observations were dropped due to a lack of suitable matches.

## DISCUSSION AND CONCLUSIONS

The concept of value added in honors education can be examined from multiple perspectives. From the point of view of the prospective or current honors student, the hope is that the honors college experience seems qualitatively different, characterized by an environment where small classes with other intellectually gifted and curious students create opportunities for deeper learning, connections with faculty, and personal growth that transcend the typical large-enrollment university model.

For university administrators working within a context characterized by increasing resource constraints, value added may take on a different dimension altogether. While administrators recognize the intrinsic value of what honors education may provide students, bottom-line budget realities factor in here, and return on investment becomes an increasing concern.

Our analyses of honors education at the University of Mississippi illustrate that these perspectives on value added are more compatible than they are contradictory. In examining factors related to the recruitment of honors students, we find that the honors setting does attract students looking for an educational experience that is different from what they are likely to receive in a more traditional university environment. Here we see the draw of the honors college providing a richer educational experience to students. The result is that honors provides value added to the institution by recruiting students who indicate that they would otherwise not have attended the university.

In addition, our survey of honors students reveals important differences in how students perceive the relative prestige of the honors college versus the university, and these differences are salient to enrollment. The perceived prestige of the honors college represents an important inducement and provides significant value added in recruitment when compared to the perceptions of the prestige of the university overall.

Finally, our survey of current honors students reveals that the honors college provides significant value added to the university by helping to recruit students who indicate that they would not

have attended the university were it not for the honors college. Most importantly, this recruitment impact draws Mississippi's highest-achieving high school students as measured by ACT to the university and helps diversify the student body by attracting academically strong out-of-state students.

With regard to retention of students, we see solid evidence of value added here as well. Our matching analysis comparing honors to non-honors students shows results consistent with other recent work in this area, with honors students showing statistically significant differences in first-year GPA as well as a higher likelihood of returning to the university in each subsequent year of their college careers. More focused comparisons lead to somewhat attenuated results, but the overall pattern is solid and indicates significant effects in terms of student success and retention.

While we do not have survey data that allow us to tap into the mechanisms that are driving these retention results, we can speculate. On the one hand, some aspect of a selection effect is likely involved here. Students who apply to the honors college may well possess traits that differentiate them from their academically similar counterparts who do not apply, and these traits may be related to retention. At the same time, however, it is also likely that the honors environment that attracts these students in the first place is also successful in providing them with an academic experience that fosters the intellectual and personal growth that they seek and that the honors environment and experiences translate into increased academic success and retention. Combined with the impact on recruitment, these results for retention and student success show how value added for the broad goals of honors education and value added in an environment of constrained resources may go hand-in-hand.

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## NOTES

1. Fall 2017 enrollment data.
2. UM has a Carnegie classification of Doctoral University: Highest Research Activity.
3. IRB protocol (number 16x-255) applies to all analyses.
4. Chi-square is a common measure of association for testing relationships between categorical variables.
5. The two categories for ACT score break the distribution roughly in half around the average ACT score (31).

6. Students from the remaining 10 states of the former Confederacy.
7. This strategy accounts for potential estimator inconsistency and bias when using two or more continuous variables in a nearest-neighbor model (Abadie and Imbens 2006; 2011).

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