

## For Students On Financial Aid: Does School Endowment Matter?

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Many of the nation’s top fifty liberal arts colleges claim that the needs of their students on financial aid are fully met. For these elite schools, the authors regress net cost to students on the school’s endowment per capita. The regression results show that only the richest schools can really claim to meet a student’s full demonstrated need. Surprisingly, among the nation’s top liberal arts colleges, the school’s endowment (per capita) matters.

**Keywords:** liberal arts colleges; financial aid; endowment

Many of the nation’s top liberal arts colleges maintain that the needs of their students on financial aid are fully met. And, if this is the case, then one would not expect to find any relationship between the net cost to students on financial aid and the wealth of a college, as measured by the school’s endowment per student.

We examined the top fifty liberal arts colleges as ranked in November 2015 by

*US News and World Report* (<http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/national-liberal-arts-colleges>). We excluded the three military academies — U.S. Naval Academy, U.S. Military Academy, and U.S. Air Force Academy — which offer free admission in return for an active-duty service obligation after graduation.

**Table 1. Enrollment, Endowment, Average Grant, and Average Net Cost at the Nation’s Top Liberal Arts Colleges, 2015-16\***

School	Enrollment (2015-16)	2014 Endowment (millions)	Average Grant	Average Net Cost
<i>Williams<sup>a</sup></i>	2045	2143.2	43689	19601
<i>Amherst</i>	1792	2149.2	47243	16529
<i>Swarthmore</i>	1542	1876.7	40314	21086
<i>Bowdoin</i>	1805	1216.0	38978	22376
<i>Middlebury</i>	2526	1081.9	39238	22218
<i>Pomona</i>	1650	2101.5	44645	18125
<i>Wellesley</i>	2323	1834.1	39988	21352
<i>Carleton</i>	2057	792.7	34050	27996
<i>Claremont McKenna</i>	1301	699.5	40438	23887
<i>Davidson</i>	1770	647.9	37170	22949
<i>Haverford</i>	1194	490.7	42621	21365
<i>Vassar</i>	2418	974.2	43094	20186
<i>Hamilton</i>	1900	927.5	38762	23308
<i>Harvey Mudd</i>	804	283.7	35266	29161
<i>Smith</i>	2563	1755.8	38417	23341
<i>Washington &amp; Lee</i>	1890	1477.9	41472	15930
<i>Wesleyan</i>	2928	793.3	41532	20946
<i>Colby</i>	1847	740.6	41033	20697
<i>Colgate</i>	2875	865.9	41428	21112
<i>Grinnell</i>	1734	1829.5	37153	21245
<i>Macalester</i>	2073	753.5	34527	25234
<i>Oberlin</i>	2961	866.8	32317	31899
<i>Bates</i>	1773	263.9	38921	23619
<i>Bryn Mawr</i>	1308	839.2	36402	25588
<i>Colorado</i>	2050	648.5	38556	21655
<i>Kenyon</i>	1662	212.2	38039	23061
<i>Barnard</i>	2573	282.0	38842	23899
<i>Scripps</i>	972	310.5	37283	26977
<i>Bucknell</i>	3565	750.9	24000	38368

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**Table 1. Enrollment, Endowment, Average Grant, and Average Net Cost at the Nation's Top Liberal Arts Colleges, 2015-16\***  
 (continued)

School	Enrollment (2015-16)	2014 Endowment (millions)	Average Grant	Average Net Cost
<i>Holy Cross</i>	2937	726.2	32207	27717
Richmond	2984	2313.3	37199	22011
<i>Mount Holyoke</i>	2189	713.5	30707	26039
<i>Pitzer</i>	1076	134.9	35293	28577
Lafayette	2503	832.8	35412	25518
Skidmore	2632	330.6	38400	23642
Union	2242	415.8	33915	28359
Dickinson	2364	396.3	32786	29040
<i>Franklin &amp; Marshall</i>	2209	339.2	39564	23606
Whitman	1498	504.5	28484	29218
Occidental	2040	406.1	35779	27445
<i>Trinity</i>	2255	551.8	41684	22236
Bard	2059	267.0	33147	30877
Centre	1387	267.2	25491	22329
Soka	412	1249.8	26796	15314
<i>Connecticut</i>	1893	278.0	35885	27080
Gettysburg	2451	289.3	32458	28412
Sewanee	1631	374.3	26247	23503

\*All data on the top fifty liberal arts colleges (excluding the three U.S. military academies) as ranked in November 2015 by *US News and World Report* are from <http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/national-liberal-arts-colleges>).

<sup>a</sup>Names of schools that claim they meet 100 percent of their students' financial needs are italicized.

For each of the remaining forty-seven schools, we collected data from *U.S. News and World Report* on undergraduate enrollment, endowment, the average need-based scholarship or grant award, the school's tuition and expenses (including room and board), and the percentage of students on financial aid whose "need was fully met."<sup>1,2</sup> The difference between tuition and expenses less the average need-based scholarship or grant awarded represents the "net cost" to students on financial aid. Endowment per student at Soka University of America (in Aliso Viejo, California) was over nine standard deviations above the mean endowment per student at the forty-six other schools in our sample (mean = \$426,851 and standard deviation = \$319,097). While there are no hard and fast rules for what qualifies as an outlier, the observation on Soka University was dropped.

For the remaining forty-six schools, we regressed average need-based scholarship or grant (hereafter, *grant*) against the school's endowment per student, in thousands of dollars (hereafter, *endowment/N*). The OLS regression results were (*t*-values in parentheses):

$$(1) \text{ grant} = 33552 + 7.979 \text{ endowment}/N$$

(31.50) (3.98)      R<sup>2</sup> = .264

Wealthier schools spend more per student on financial aid. A one standard deviation increase in the school's endowment per student would increase the size of the school's grant by \$2546 (= 7.979 × 319.097). Among the twenty-nine schools in our sample that claimed they met 100 percent of their students' financial needs, the slope coefficient in equation (1) was again positive and statistically significant [5.870 (*p* = .004)].

Richer schools offer more generous grants to help students on financial aid meet their needs (the correlation between expenses — tuition and fees as well as room and board — and grants is .544, *p* < .001). And, if richer schools meet "full need," then the resulting net cost to students on financial aid would be close to zero. That is, for the schools that claim to meet the full demonstrated need of their students, there should be no relationship whatsoever between net cost and the wealth of the schools themselves. That is, the slope coefficient in a regression of net cost (hereafter, *net\_cost*) on *endowment/N* should not be discernibly different from zero. The OLS regression results were (*t*-values in parentheses):

$$(2) \text{ netcost} = 27582 - 7.613 \text{ endowment}/N$$

(32.12) (-4.71)      R<sup>2</sup> = .335

The slope coefficient is discernibly different from zero ( $p < .001$ ). And, among the twenty-nine schools in our sample that claimed they met 100 percent of their students' financial needs, the slope coefficient in equation (2) was again negative and statistically significant [  $-6.623$  ( $p < .001$ )]. Wealthier schools are more affordable to lower-income students on financial aid.

Among the country's top fifty liberal arts colleges, the school's endowment matters. There is a strong inverse relationship between net cost to students on financial aid and their school's endowment per student. This result implies that "full need" may be calculated not only as a function of the student's ability to pay, but also of the school's ability to pay. Finally, our findings suggest that *only* the richest schools can really claim to meet a student's full demonstrated need.

#### Reference

1. *US News and World Report*  
<http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/national-liberal-arts-colleges>  
(accessed January 28, 2016)

#### Footnotes

1. Click on the name of the school. The school's 2014 endowment can be found under "General Information". Scroll down to "Cost and Financial Aid" for the school's (i) average need-based scholarship or grant, (ii) "Tuition and fees" and "Room and board", and (iii) the percentage of students on financial aid whose "Need was fully met".
2. For Harvey Mudd's average need-based scholarship and percentage of students on financial aid whose "need was fully met," see [www.hmc.edu/admission/afford/](http://www.hmc.edu/admission/afford/). For Macalester College's 2014 endowment, see "U.S. and Canadian Institutions Listed by Fiscal Year (FY) 2014 Endowment Market Value and Change in Endowment Market Value from FY 2013 to FY 2014." National Association of College and University Business Officers and Commonfund Institute, 2015. And, for Bard College's 2014 endowment, see [www.bard.edu/about/profile](http://www.bard.edu/about/profile).

<u>school</u>	<u>enrollment</u>	<u>expenses</u>	<u>grant</u>	<u>needmetpercent</u>	<u>netcost</u>	<u>endowmentpercapita</u>	<u>needmet</u>	<u>endowmillions</u>
Williams	2045	6.33E+04	43689	100	19601	1048	1	2143.15
Amherst	1792	6.38E+04	47243	100	16529	1199.33	1	2149.2
Swarthmore	1542	6.14E+04	40314	100	21086	1217.04	1	1876.67
Bowdoin	1805	6.14E+04	38978	100	22376	673.7	1	1216.03
Middlebury	2526	6.15E+04	39238	100	22218	428.3	1	1081.89
Pomona	1650	6.28E+04	44645	100	18125	1273.61	1	2101.46
Wellesley	2323	6.13E+04	39988	100	21352	789.56	1	1834.14
Carleton	2057	62046	34050	100	27996	385.39	1	792.74
Claremont McKenna	1301	64325	40438	90.7	23887	537.66	0	699.49
Davidson	1770	60119	37170	100	22949	366.06	1	647.92
Haverford	1194	63986	42621	100	21365	410.97	1	490.7
Vassar	2418	63280	43094	100	20186	402.89	1	974.18
Hamilton	1900	62070	38762	100	23308	488.17	1	927.52
Harvey Mudd	804	64427	35266	100	29161	352.86	1	283.7
Smith	2563	6.18E+04	38417	100	23341	685.04	1	1755.76
Washington and Lee	1890	5.74E+04	41472	100	15930	781.97	1	1477.92
Wesleyan	2928	62478	41532	100	20946	270.95	1	793.33
Colby	1847	61730	41033	100	20697	400.99	1	740.63
Colgate	2875	62540	41428	100	21112	301.18	1	865.88
Grinnell	1734	5.84E+04	37153	100	21245	1055.09	1	1829.52
Macalester	2073	59761	34527	100	25234	363.48	1	753.5
Oberlin	2961	64216	32317	100	31899	292.75	1	866.83
Bates	1773	62540	38921	100	23619	148.84	1	263.89
Bryn Mawr	1308	61990	36402	98.1	25588	641.61	0	839.23
Colorado	2050	60211	38556	100	21655	316.34	1	648.5
Kenyon	1662	61100	38039	60.8	23061	127.65	0	212.16
Barnard	2573	62741	38842	97.8	23899	109.62	0	282.05
Scripps	972	64260	37283	99.7	26977	319.48	0	310.54
Bucknell	3565	62368	24000	90	38368	210.63	0	750.91

Holy Cross	2937	59924	32207	100	27717	247.27	1	726.23
Richmond	2984	5.92E+04	37199	85.1	22011	775.24	0	2313.31
Mount Holyoke	2189	56746	30707	100	26039	325.95	1	713.52
Pitzer	1076	63870	35293	100	28577	125.35	1	134.88
Lafayette	2503	60930	35412	86.6	25518	332.73	0	832.81
Skidmore	2632	62042	38400	90.9	23642	125.61	0	330.59
Union	2242	62274	33915	99.3	28359	185.46	0	415.8
Dickinson	2364	61826	32786	57.5	29040	167.62	0	396.27
Franklin Marshall	2209	63170	39564	100	23606	153.56	1	339.2
Whitman	1498	57702	28484	61.1	29218	336.8	0	504.52
Occidental	2040	63224	35779	99.4	27445	199.07	0	406.1
Trinity	2255	63920	41684	100	22236	244.7	1	551.8
Bard	2059	64024	33147	42.9	30877	129.67	0	267
Centre	1387	47820	25491	27.6	22329	192.62	0	267.17
Soka	412	4.21E+04	26796	34.1	15314	3033.4	0	1249.76
Connecticut	1893	62965	35885	100	27080	146.84	1	277.97
Gettysburg	2451	60870	32458	87.6	28412	118.03	0	289.3
Sewanee	1631	49750	26247	40.7	23503	229.49	0	374.3