

RESEARCH BRIEF

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Benchmarking NOVA: Factors that Define College Quality Findings from the Brookings Institution

In April 2015 the Brookings Institution published a report that used a **value-added approach** to assessing two- and four-year colleges (Rothwell & Kulkarni, 2015). The authors extracted data from multiple government and public sources to analyze the economic outcomes of college graduates. They theorized that economic outcomes of graduates are affected by student characteristics, the type of college they attend, the location of the college, and various aspects of **college quality**.

This Brief compiles the findings of Rothwell and Kulkarni (2015) pertaining to Northern Virginia Community College (NOVA) and select peer and competitor institutions¹ in terms of **college quality factors**.

College quality factors are variables that (1) affect alumni economic performance, or are at least significantly correlated with it; (2) are not a direct measure of economic success (like employment in a high-paying career); and (3) are something colleges can influence, at least partially, regardless of their institutional focus and location. According to these criteria, the authors explored the following seven factors of college quality:

1. Retention Rates
2. Four-Year Graduation Rates
3. Share of Graduates Prepared to Work in STEM Fields
4. Curriculum Value
5. Value of Alumni Skills
6. Institutional Financial Aid Per Student
7. Average Salary of Instructional Staff

¹ These institutions include the College of Southern Maryland, Frederick Community College, Prince George's Community College, and Montgomery College (competitor institutions all located in the District of Columbia-Maryland-Virginia area); and J. Sargeant Reynolds Community College and Tidewater Community College, the next two largest Virginia Community College System institutions after NOVA.

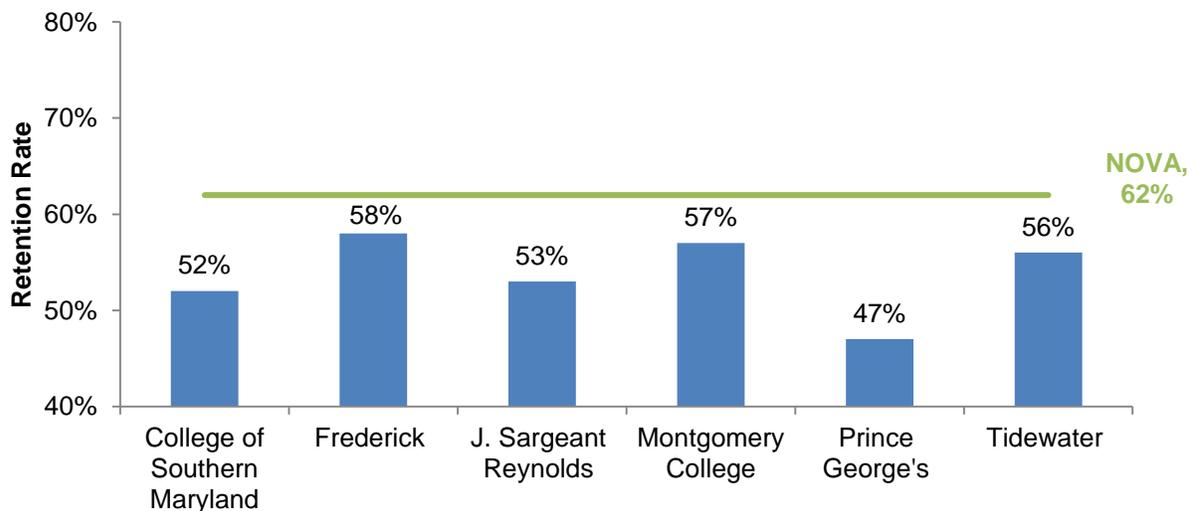
Summary of Findings

- NOVA had the **highest: retention rates, graduation rates, and value assigned to alumni skills** as compared to peer community colleges.
- NOVA had the **lowest** percentage of **STEM graduates** and **curriculum value**, and second lowest **financial institutional aid to students** as compared to peer community colleges.
- NOVA had an **average faculty salary** that fell in the middle as compared to peer community colleges.
- Rothwell and Kulkarni (2015) identified that **five of these seven key quality concepts** were most strongly associated with successful economic outcomes² for graduates: graduation rates, STEM orientation, financial institutional aid to students, curriculum value, and alumni skills.

Retention rates³ capture the share of students from the full-time and part-time adjusted Fall 2008 cohorts still enrolled in Fall 2009.

NOVA attained the highest retention rate (62 percent), followed by Frederick Community College (58 percent), Montgomery College (57 percent) and Tidewater Community College (56 percent). Prince George's Community College experienced the lowest retention rate (47 percent).

Figure 1. Fall-to-Fall Retention Rates: Fall 2008 Cohorts



² See Research Brief #30-15 for the Brookings Institution's analysis of the economic outcomes of NOVA and its peer institutions.

³ Source: IPEDS, Students from the full-time and part-time adjusted Fall 2008 cohorts enrolled in Fall 2009.

Graduation rates⁴ are calculated as a percent of students finishing their credential within twice the normal time (four years for an associate’s degree). As shown in Figure 2, NOVA and Frederick Community College attained the highest graduation rates in the group (30 percent) while Prince George’s Community college attained the lowest rate (11 percent).

STEM (Science, Technology, Engineering, and Math) graduates⁵ refers to the share of graduates prepared to work in STEM occupations. NOVA and Frederick Community College had the lowest percentage of STEM graduates (17 percent each), followed by the College of Southern Maryland for which 18 percent of its graduates were trained to work in STEM occupations (Figure 3). J. Sargeant Reynolds Community College had the highest percentage of STEM graduates (38 percent), followed by Prince George’s Community College (34 percent).

Figure 2. Four-Year Graduation Rates: 2009 Cohorts

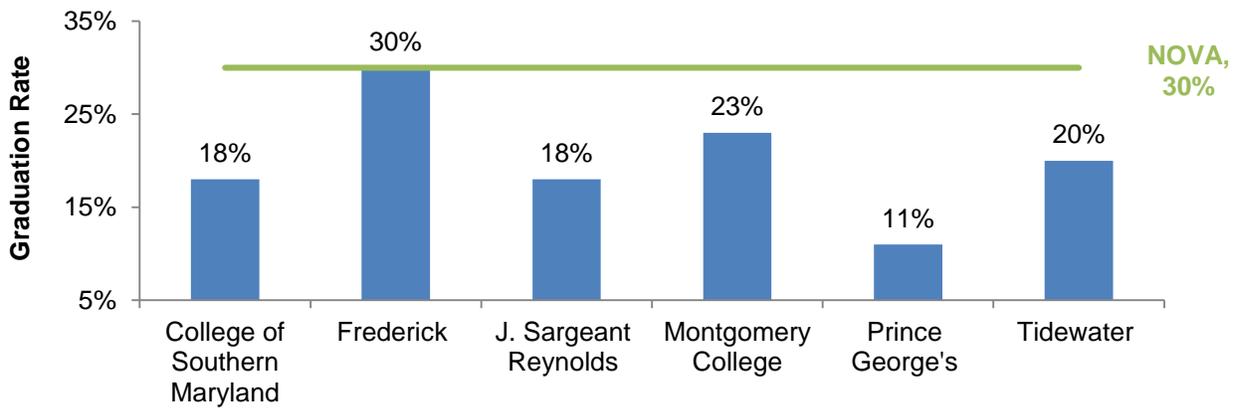
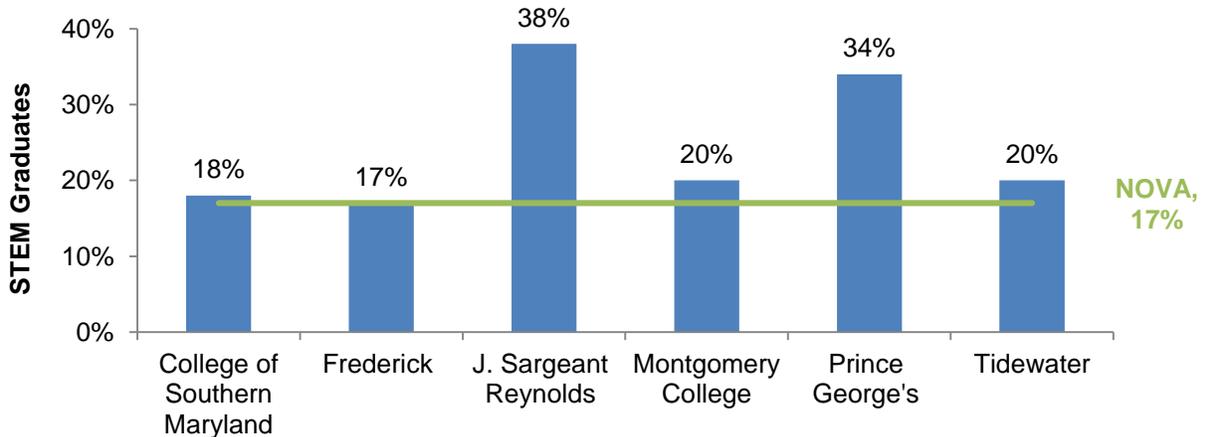


Figure 3. Percentage of Four-Year Graduates Who Earned a STEM Degree: 2013 Awards



⁴ Source: IPEDS, Percentage of students who started a program in 2009 and completed within twice the normal time (i.e., four years) by August 2013.

⁵ Source: IPEDS & O*NET data (includes all students at the institution completing awards in 2013).

Faculty salary⁶ is the average salary paid to all non-medical instructional staff at a particular institution. Montgomery College was shown to pay its faculty the highest amount on average (\$100,992). The lowest average faculty salary was paid by Prince George's Community College (\$76,140), similar to J. Sargeant Reynolds Community College (\$76,188). NOVA paid its faculty on average \$83,052 (Figure 4, next page).

Financial institutional aid to students⁷ calculates the average financial aid payment funded by the college itself, rather than federal or other sources. As shown in Figure 5 (next page), Tidewater Community College and Prince George's Community College offered their students the highest amount of financial aid on average, \$1,539 and \$1,209, respectively. Frederick Community College offered the lowest average financial aid payment (\$251), while NOVA offered the second lowest (\$338).

Figure 4. Average Faculty Salary: Academic Year 2012 to 2013

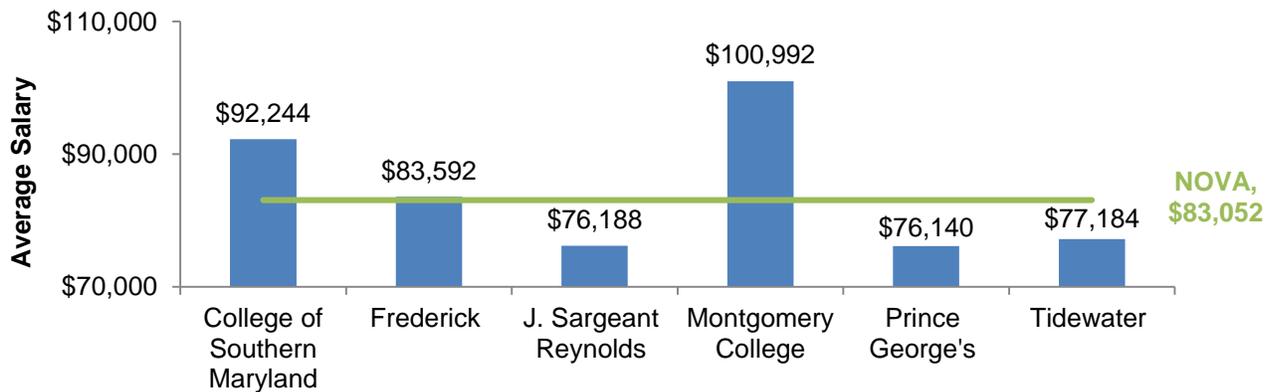
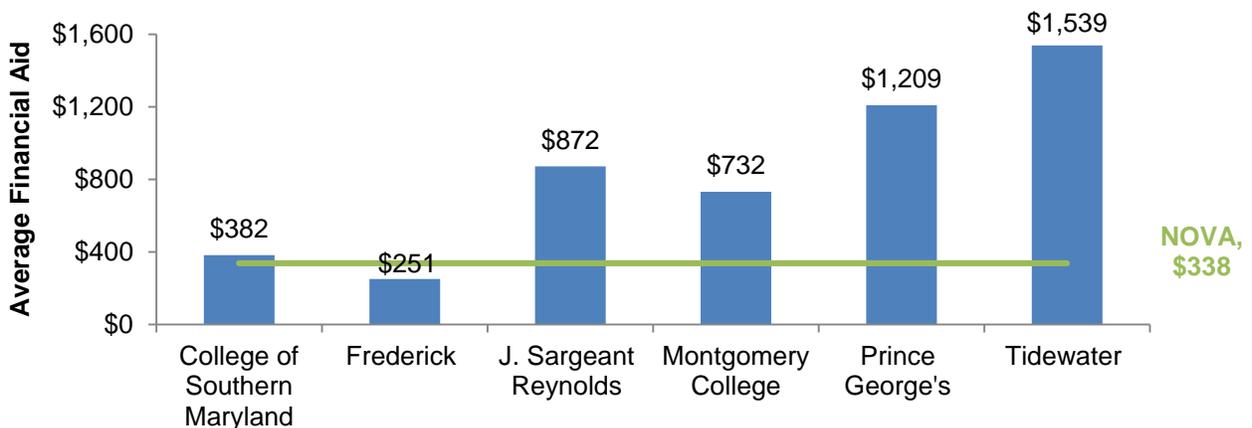


Figure 5. Average Financial Institutional Aid to Students: Academic Year 2012 to 2013



⁶ Source: IPEDS, 2012-2013 academic year (the monthly weighted average salary for all non-medical instructional staff times 12, to estimate annual salaries).

⁷ Source: IPEDS, 2012-2013 ("Average amount of institutional grant aid received by full-time first-time undergraduates" times "Percent of students receiving aid").

Curriculum value⁸ is calculated by determining the national median earnings for all associate's degree holders in the labor force by major, then taking a weighted average for each school using the actual number of graduates in each major. As illustrated in Figure 6, J. Sargeant Reynolds Community College had the highest curriculum value (\$55,991) while Frederick Community College had the lowest (\$51,234) and NOVA had the second lowest (\$51,636).

Alumni skills⁹ capture the labor market value of the 25 most common skills listed on the LinkedIn resumes of alumni who attended the college (Figure 7). These skills were matched with data on skills and salaries advertised in millions of job vacancies. However, the skills graduates listed on LinkedIn were not necessarily acquired at the college. NOVA graduates were found to have the highest value for alumni skills (\$63,230), followed by Frederick Community College (\$63,001). J. Sargeant Reynolds graduates had the lowest value for alumni skills (\$59,660). Counter to expectations, a college with a high curriculum value could have a relatively low alumni skills value, as was the case with J. Sargeant Reynolds Community College.

Figure 6. Average Curriculum Value Based on 2013 Awards

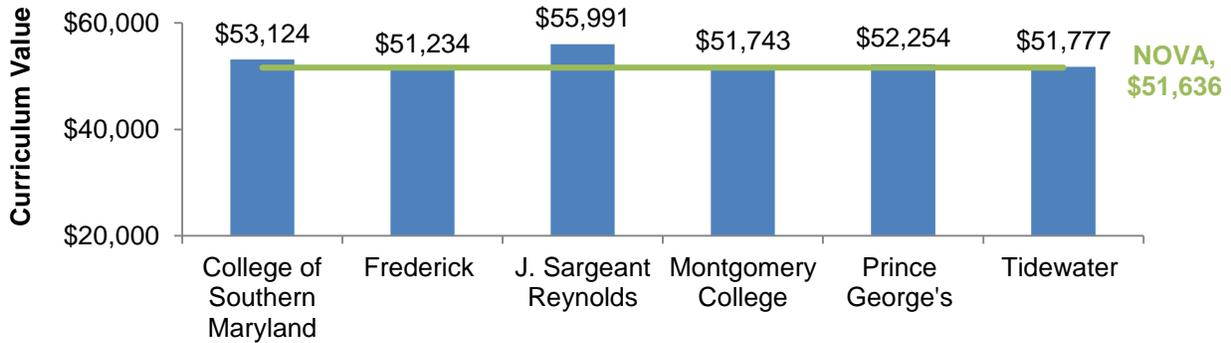
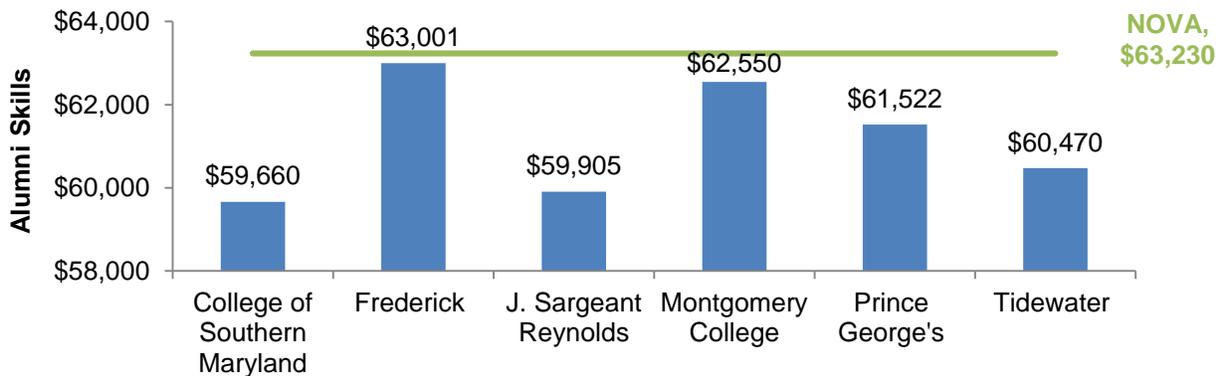


Figure 7. Average Value of Alumni Skills



⁸ Source: IPEDS & Integrated Public Use Microdata Series (IPUMS) USA (based on 2013 awards).

⁹ Source: LinkedIn & Burning Glass.

Reference: Rothwell, J., & Kulkarni, S. (2015). *Beyond College Rankings: A Value-Added Approach to Assessing Two- and Four-Year Schools*. Washington, DC: The Brookings Institution.

APPENDIX: Data Tables

Table 1. Retention Rates, Four-Year Graduation Rates, and STEM Graduates

Institution	Retention Rate ¹⁰ (%)	Four-Year Graduation Rate ¹¹ (%)	STEM Graduates ¹² (%)
College of Southern Maryland	52	18	18
Frederick Community College	58	30	17
J. Sargeant Reynolds Community College	53	18	38
Montgomery College	57	23	20
NOVA	62	30	17
Prince George's Community College	47	11	34
Tidewater Community College	56	20	20

Table 2. Faculty Salary and Institutional Financial Aid

Institution	Average Faculty Salary ¹³ (\$)	Average Financial Institutional Aid to Students ¹⁴ (\$)
College of Southern Maryland	92,244	382
Frederick Community College	83,592	251
J. Sargeant Reynolds Community College	76,188	872
Montgomery College	100,992	732
NOVA	83,052	338
Prince George's Community College	76,140	1,209
Tidewater Community College	77,184	1,539

Table 3. Curriculum Value and Alumni Skills

Institution	Curriculum Value ¹⁵ (\$)	Alumni Skills ¹⁶ (\$)
College of Southern Maryland	53,124	59,660
Frederick Community College	51,234	63,001
J. Sargeant Reynolds Community College	55,991	59,905
Montgomery College	51,743	62,550
NOVA	51,636	63,230
Prince George's Community College	52,254	61,522
Tidewater Community College	51,777	60,470

¹⁰ Source: IPEDS, Students from the full-time and part-time adjusted Fall 2008 cohorts enrolled in Fall 2009.

¹¹ Source: IPEDS, Percentage of students who started a program in 2009 and completed within twice the normal time (i.e., four years) by August 2013.

¹² Source: IPEDS & O*NET data (includes all students at the institution completing awards in 2013).

¹³ Source: IPEDS, 2012-2013 academic year (the monthly weighted average salary for all non-medical instructional staff times 12, to estimate annual salaries).

¹⁴ Source: IPEDS, 2012-2013 ("Average amount of institutional grant aid received by full-time first-time undergraduates" times "Percent of students receiving aid").

¹⁵ Source: IPEDS & Integrated Public Use Microdata Series (IPUMS) USA (based on 2013 awards).

¹⁶ Source: LinkedIn & Burning Glass.