

GOAL 11: POST-SECONDARY EDUCATION RESEARCH AND DEVELOPMENT

By 2028, New Brunswick will have doubled funding for post-secondary education research and development to \$110 million.*

**Prices in 2017 constant dollars*

Status: NOT PROGRESSING

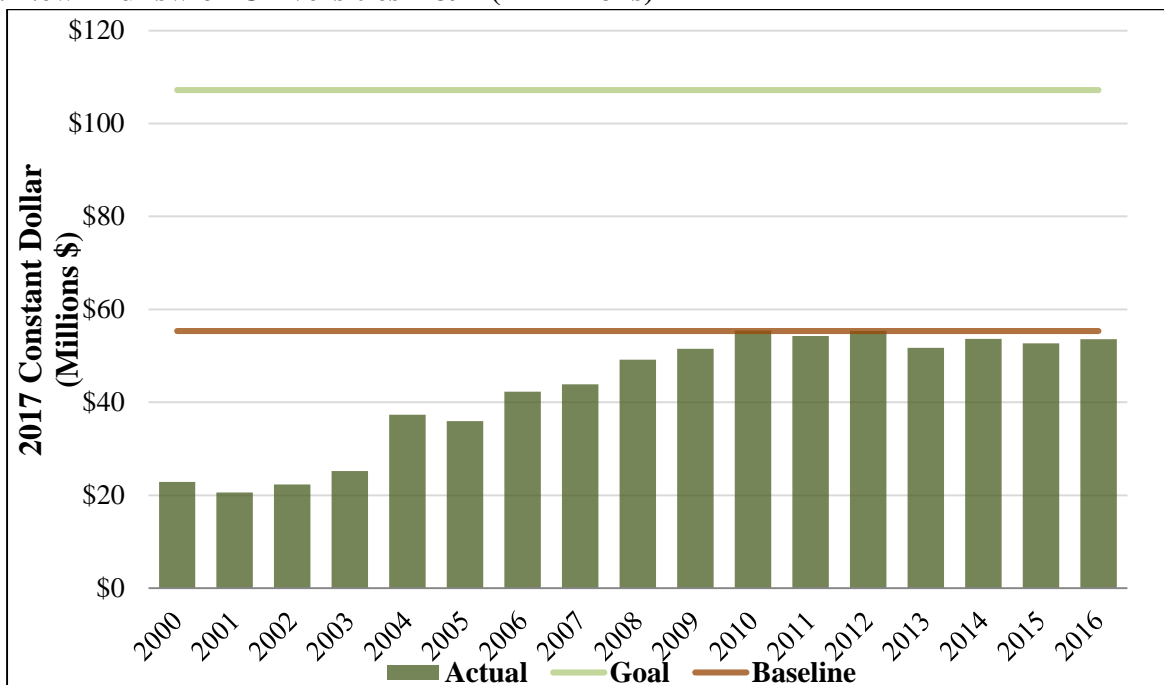
Current Situation

The province of Nova Scotia has set a goal of doubling post-secondary education (PSE) research funding through a combination of government support and additional funding secured through researcher collaborations and initiatives (see *OneNS*). If New Brunswick adopts the same goal (with a 2010 baseline of \$55.4 million), it will aim to increase research funding for New Brunswick universities and New Brunswick Community College (NBCC) to \$110 million by the year 2028.

Different sources show varying levels of funding in New Brunswick. According to the most recent data from the Canadian Association of University Business Officers (CAUBO), university research and development (R&D) in New Brunswick followed an overall upward trend from 2000 to 2010 but fell slightly from \$55.4 million in 2010 to \$53.6 million in 2016. Meanwhile, data from the Financial Information of Universities and Colleges (FIUC), which shows the constant dollar value of sponsored research and development occurring at New Brunswick universities, indicates that post-secondary R&D appears to have stabilized since 2010, after which it fluctuated only slightly from year to year (see Figure 1). Finally, Statistics Canada data shows that R&D grew from \$135.4 million to \$174.5 million during the 2010-2015 period, with R&D increasing by 4% over a 2-year period (2013/2014 to 2015/2016).

It is important to note that both CAUBO and FIUC exclude sponsored R&D performed at NBCC, whereas Statistics Canada data on R&D in the higher education sector provides additional insight on the various funding sources impacting trends in New Brunswick.

Figure 1: New Brunswick Universities R&D (in millions)



Data: Figure 1	Actual (millions)	Baseline (2010) (millions)	Target (2028) (millions)
2000	\$22.9	\$55.4	\$107.2
2001	\$20.6	\$55.4	\$107.2
2002	\$22.3	\$55.4	\$107.2
2003	\$25.3	\$55.4	\$107.2
2004	\$37.4	\$55.4	\$107.2
2005	\$35.9	\$55.4	\$107.2
2006	\$42.3	\$55.4	\$107.2
2007	\$43.9	\$55.4	\$107.2
2008	\$49.2	\$55.4	\$107.2
2009	\$51.5	\$55.4	\$107.2
2010	\$55.4	\$55.4	\$107.2
2011	\$54.3	\$55.4	\$107.2
2012	\$55.4	\$55.4	\$107.2
2013	\$51.7	\$55.4	\$107.2
2014	\$53.6	\$55.4	\$107.2
2015	\$52.7	\$55.4	\$107.2
2016	\$53.6	\$55.4	\$107.2

Source: FIUC_1980-2016; Statistics Canada, CANSIM table 326-0021: Consumer Price Index, annual average, not seasonally adjusted

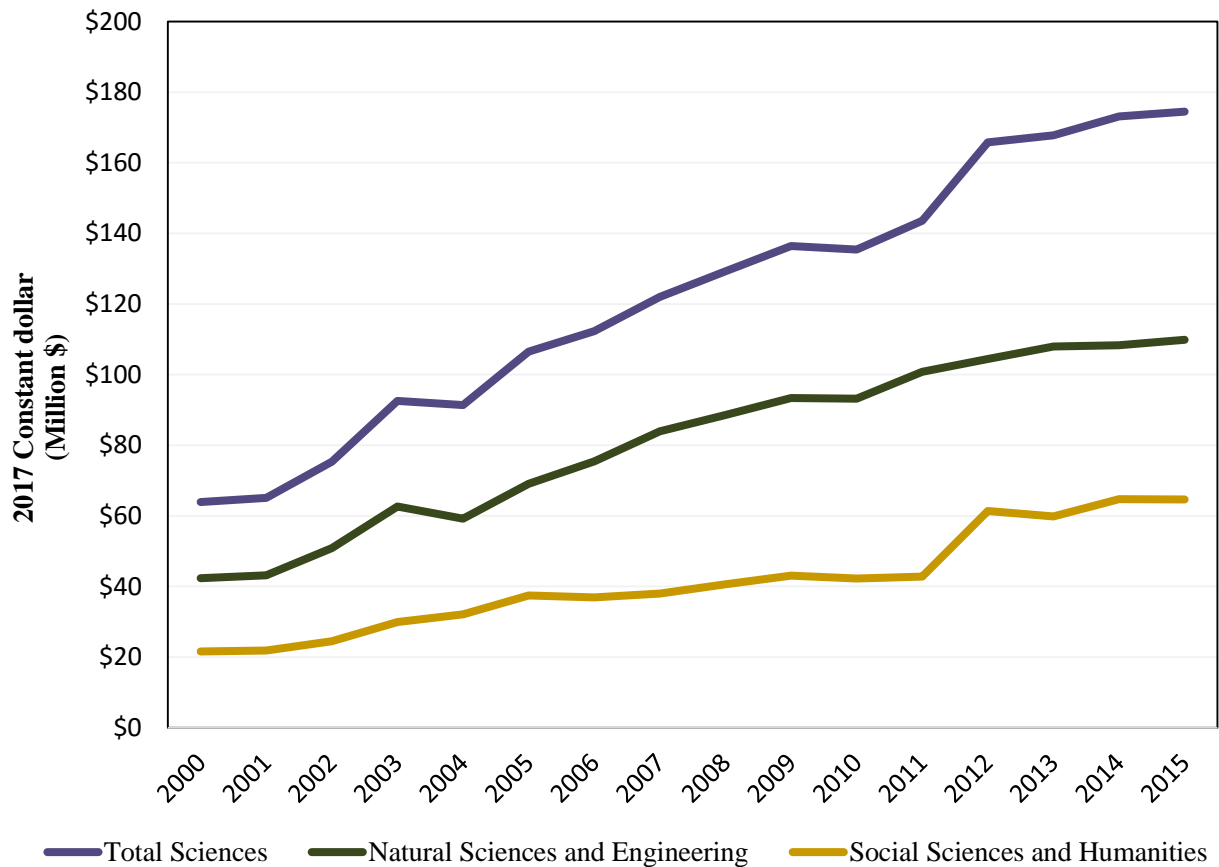
What This Means

According to data from CAUBO and FIUC, it appears unlikely that New Brunswick will meet the suggested goal of doubling R&D funding by 2028—unless there is significant new investment in post-secondary R&D in the coming years. However, data that also includes non-university PSE institutions shows that R&D is still growing on an annual basis (though at a slower rate than during the 2000-2012 period).

DEEP DIVE

Based on data from Statistics Canada, the overall funding for R&D in New Brunswick is divided into two groups: 1) R&D in Natural Sciences and Engineering and (2) R&D in Social Sciences and Humanities. Of the \$174.5 million of R&D performed in New Brunswick during 2015/2016, \$109.9 million (63%) went toward Natural Sciences and Engineering, and \$64.6 million (37%) went to Social Sciences and Humanities. R&D funding in both categories has been steadily growing since 2005, with Social Sciences and Humanities seeing a large increase in R&D spending between 2011 and 2012.

Figure 2: Funding for R&D by Type of Science (in millions)



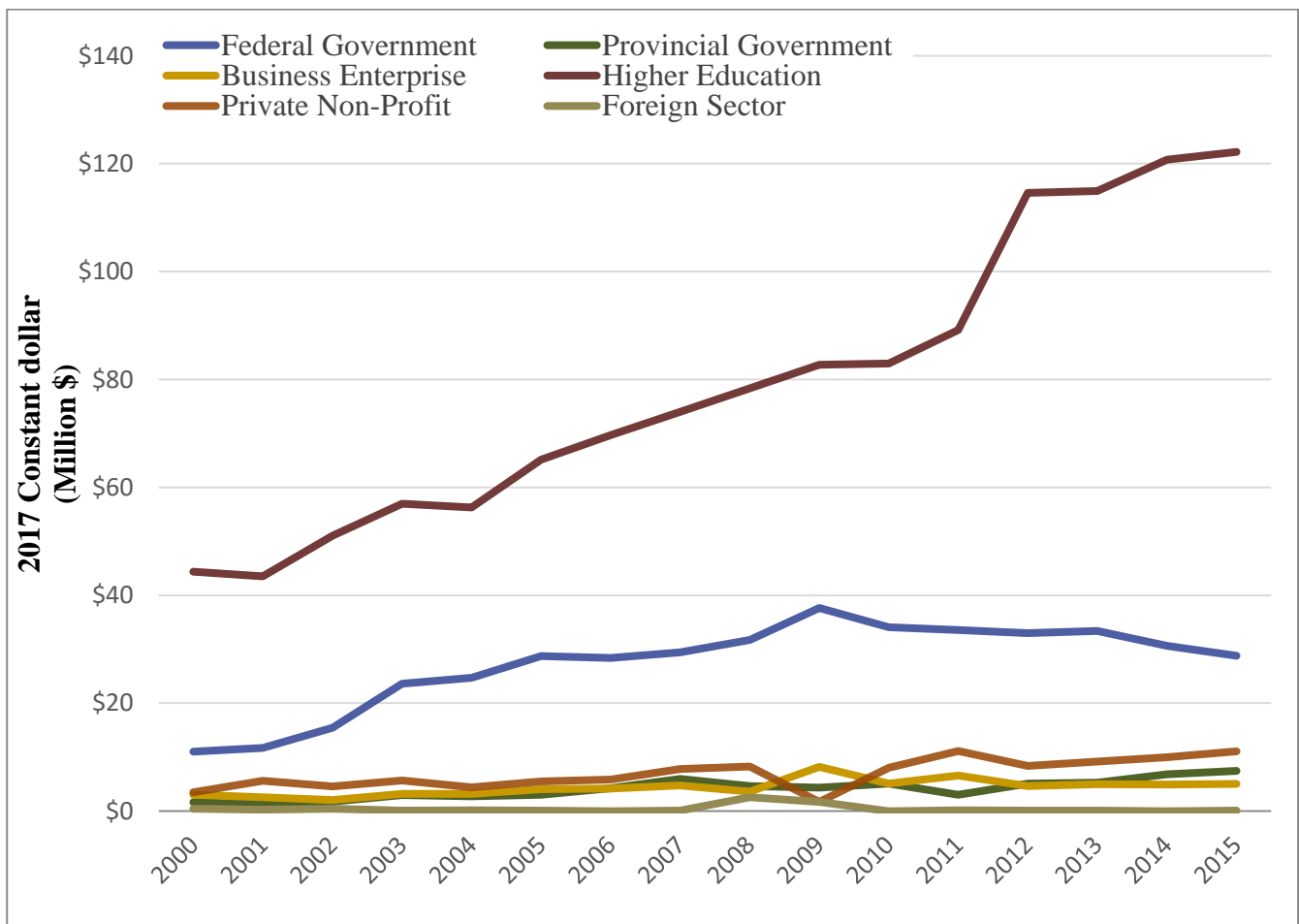
Data: Figure 2	Total Sciences (millions)	Science and Engineering (millions)	Social Sciences and Humanities (millions)
2000	\$63.9	\$42.3	\$21.6
2001	\$65.1	\$43.2	\$21.9
2002	\$75.4	\$50.8	\$24.5
2003	\$92.6	\$62.7	\$29.9
2004	\$91.4	\$59.2	\$32.1
2005	\$106.5	\$69.1	\$37.5
2006	\$112.4	\$75.4	\$37.0
2007	\$122.0	\$84.0	\$38.0
2008	\$129.2	\$88.6	\$40.6
2009	\$136.4	\$93.3	\$43.1
2010	\$135.4	\$93.2	\$42.2
2011	\$143.6	\$100.8	\$42.8
2012	\$165.8	\$104.4	\$61.4
2013	\$167.8	\$108.0	\$59.8
2014	\$173.1	\$108.3	\$64.8
2015	\$174.5	\$109.9	\$64.6

Source: Statistics Canada, CANSIM Table 358-0162: Provincial estimates of research and development expenditures in the higher education sector, by funding sector and type of science, annual (dollars x 1,000,000); Statistics Canada, CANSIM Table 326-0021: Consumer Price Index, annual average, not seasonally adjusted

Funding for R&D comes from six major sources: federal government, provincial government, private businesses, private non-profits, the higher education sector, and the foreign sector. Over half of the funding for R&D activity in New Brunswick comes from the higher education sector itself, which provided \$122.15 million in 2015. This sector is not only the most important source of funding for R&D, but it is also the fastest-growing, as other sources have flattened in recent years. The federal government is the second-largest source of funding, producing \$28.77 million in 2015.

Most of the PSE R&D activity funded by the provincial government, private businesses, and non-profit organizations is in Natural Sciences and Engineering. In 2015, these three sources collectively funded \$21.5 million of R&D in Natural Sciences and Engineering in New Brunswick, and \$2.1 million in Social Sciences and Humanities.

Figure 3: Funding for R&D Performed by the Higher Education Sector, by Funding Source (in millions)



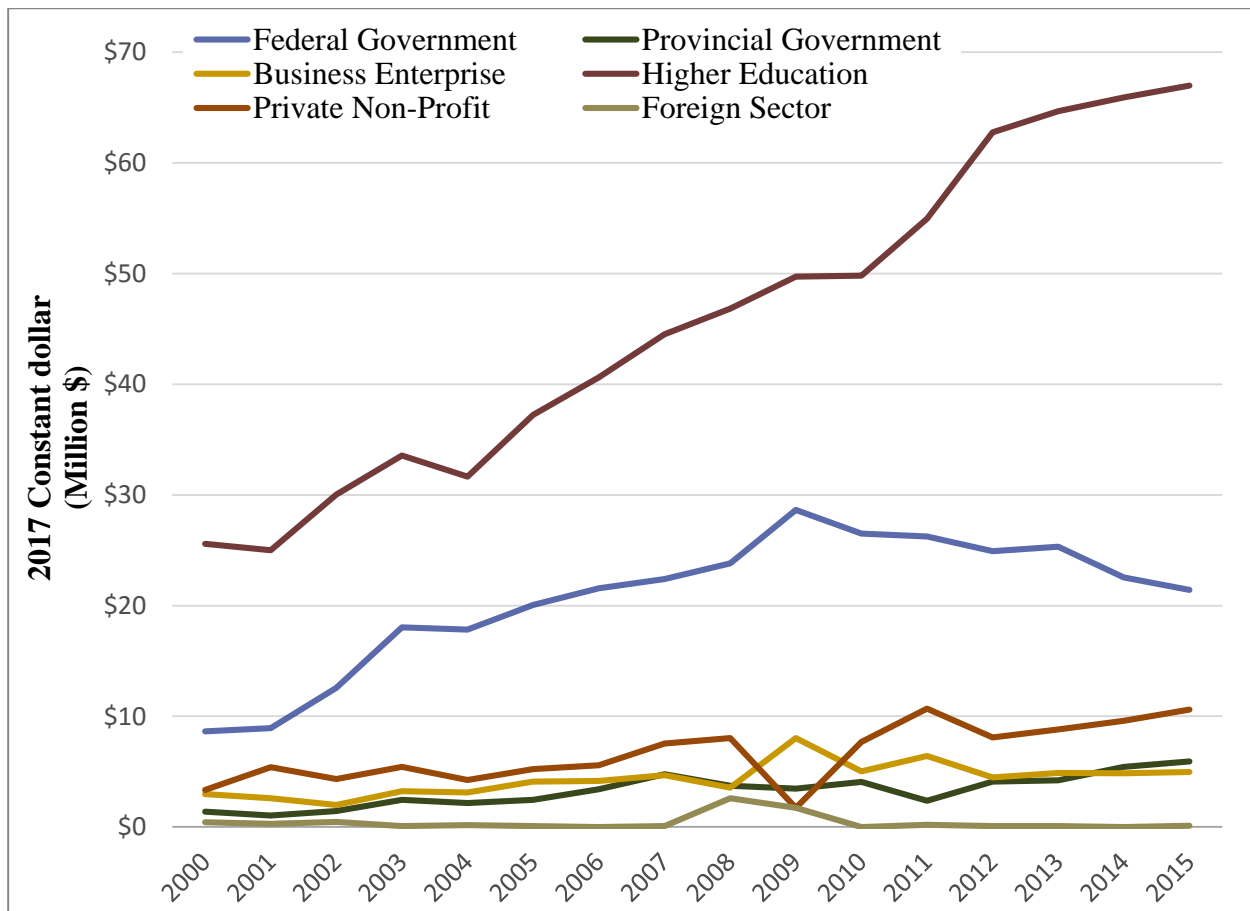
Data: Figure 3	FEDERAL GOVERNMENT (millions)	PROVINCIAL GOVERNMENT (millions)	BUSINESS ENTERPRISE (millions)	HIGHER EDUCATION (millions)	PRIVATE NON-PROFIT (millions)	FOREIGN SECTOR (millions)
2000	\$11.02	\$1.67	\$3.04	\$44.36	\$3.48	\$0.43
2001	\$11.73	\$1.33	\$2.58	\$43.53	\$5.61	\$0.30
2002	\$15.47	\$1.75	\$2.06	\$51.07	\$4.57	\$0.46
2003	\$23.64	\$2.99	\$3.23	\$56.98	\$5.67	\$0.08
2004	\$24.71	\$2.72	\$3.20	\$56.29	\$4.40	\$0.16

2005	\$28.73	\$3.03	\$4.09	\$65.16	\$5.48	\$0.08
2006	\$28.38	\$4.24	\$4.16	\$69.66	\$5.83	\$0.00
2007	\$29.44	\$5.94	\$4.75	\$73.97	\$7.80	\$0.08
2008	\$31.75	\$4.66	\$3.62	\$78.34	\$8.28	\$2.59
2009	\$37.63	\$4.33	\$8.22	\$82.70	\$1.73	\$1.73
2010	\$34.10	\$5.12	\$5.12	\$82.95	\$8.04	\$0.00
2011	\$33.57	\$3.02	\$6.59	\$89.18	\$11.16	\$0.18
2012	\$33.01	\$5.11	\$4.65	\$114.56	\$8.37	\$0.09
2013	\$33.38	\$5.25	\$4.97	\$114.94	\$9.19	\$0.09
2014	\$30.63	\$6.85	\$4.95	\$120.71	\$9.99	\$0.00
2015	\$28.77	\$7.46	\$5.07	\$122.15	\$11.09	\$0.10

Source: Statistics Canada, CANSIM Table 358-0162: Provincial estimates of research and development expenditures in the higher education sector, by funding sector and type of science, annual (dollars x 1,000,000); Statistics Canada, CANSIM Table 326-0021: Consumer Price Index, annual average, not seasonally adjusted

A comparison of Figures 4 and 5 shows that both Natural Sciences and Engineering and Social Sciences and Humanities saw a significant increase in R&D funding from the higher education sector from 2011 to 2012. (Figure 2 registers this increase much more dramatically for Social Sciences and Humanities, likely because this category has fewer funding sources than Natural Sciences and Engineering.) Since the *OneNS* report on the same topic shows a similar spike for the Social Sciences and Humanities category in Nova Scotia during the same time period, it seems likely that the higher education sector in New Brunswick was responding to broader trends in PSE investment.

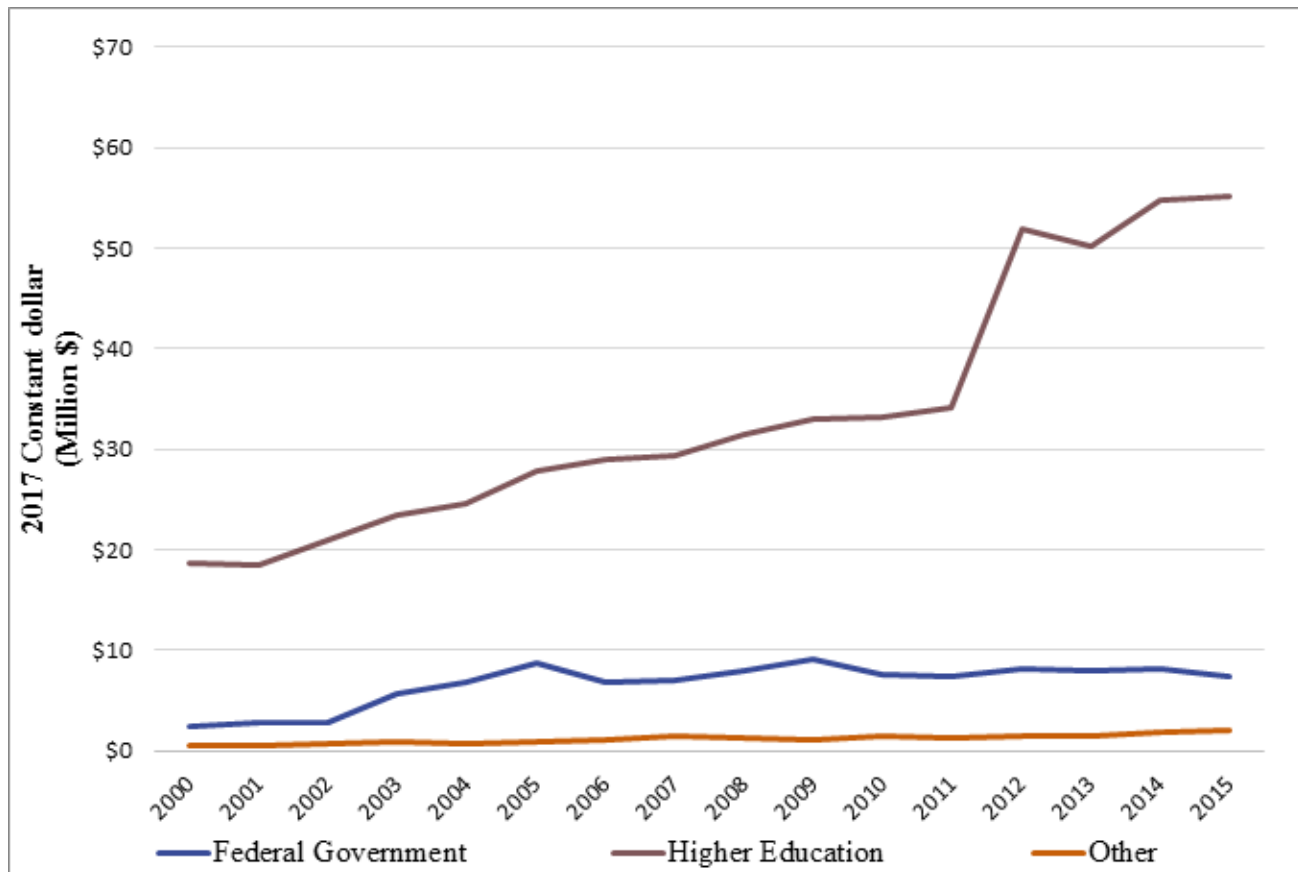
Figure 4: Funding for Natural Sciences and Engineering R&D performed by NB's Higher Education Sector, by Funding Source (in millions)



Data: Figure 4	FEDERAL GOVERNMENT (millions)	PROVINCIAL GOVERNMENT (millions)	BUSINESS ENTERPRISE (millions)	HIGHER EDUCATION (millions)	PRIVATE NON-PROFIT (millions)	FOREIGN SECTOR (millions)
2000	\$8.6	\$1.4	\$3.0	\$25.6	\$3.3	\$0.4
2001	\$8.9	\$1.0	\$2.6	\$25.0	\$5.4	\$0.3
2002	\$12.6	\$1.4	\$2.0	\$30.0	\$4.3	\$0.5
2003	\$18.0	\$2.4	\$3.2	\$33.6	\$5.4	\$0.1
2004	\$17.8	\$2.2	\$3.1	\$31.7	\$4.2	\$0.2
2005	\$20.1	\$2.5	\$4.1	\$37.2	\$5.2	\$0.1
2006	\$21.6	\$3.4	\$4.2	\$40.6	\$5.6	\$0.0
2007	\$22.4	\$4.8	\$4.7	\$44.5	\$7.6	\$0.1
2008	\$23.8	\$3.7	\$3.5	\$46.9	\$8.0	\$2.6
2009	\$28.6	\$3.5	\$8.0	\$49.7	\$1.7	\$1.7
2010	\$26.5	\$4.1	\$5.0	\$49.8	\$7.7	\$0.0
2011	\$26.3	\$2.4	\$6.4	\$55.0	\$10.7	\$0.2
2012	\$24.9	\$4.1	\$4.5	\$62.8	\$8.1	\$0.1
2013	\$25.3	\$4.2	\$4.9	\$64.7	\$8.8	\$0.1
2014	\$22.5	\$5.4	\$4.9	\$65.9	\$9.6	\$0.0
2015	\$21.4	\$5.9	\$5.0	\$67.0	\$10.6	\$0.1

Source: Statistics Canada, CANSIM Table 358-0162: Provincial estimates of research and development expenditures in the higher education sector, by funding sector and type of science, annual (dollars x 1,000,000); Statistics Canada, CANSIM Table 326-0021: Consumer Price Index, annual average, not seasonally adjusted

Figure 5: Funding for Social Sciences and Humanities R&D Performed by NB's Higher Education Sector, by Funding Source (in millions)

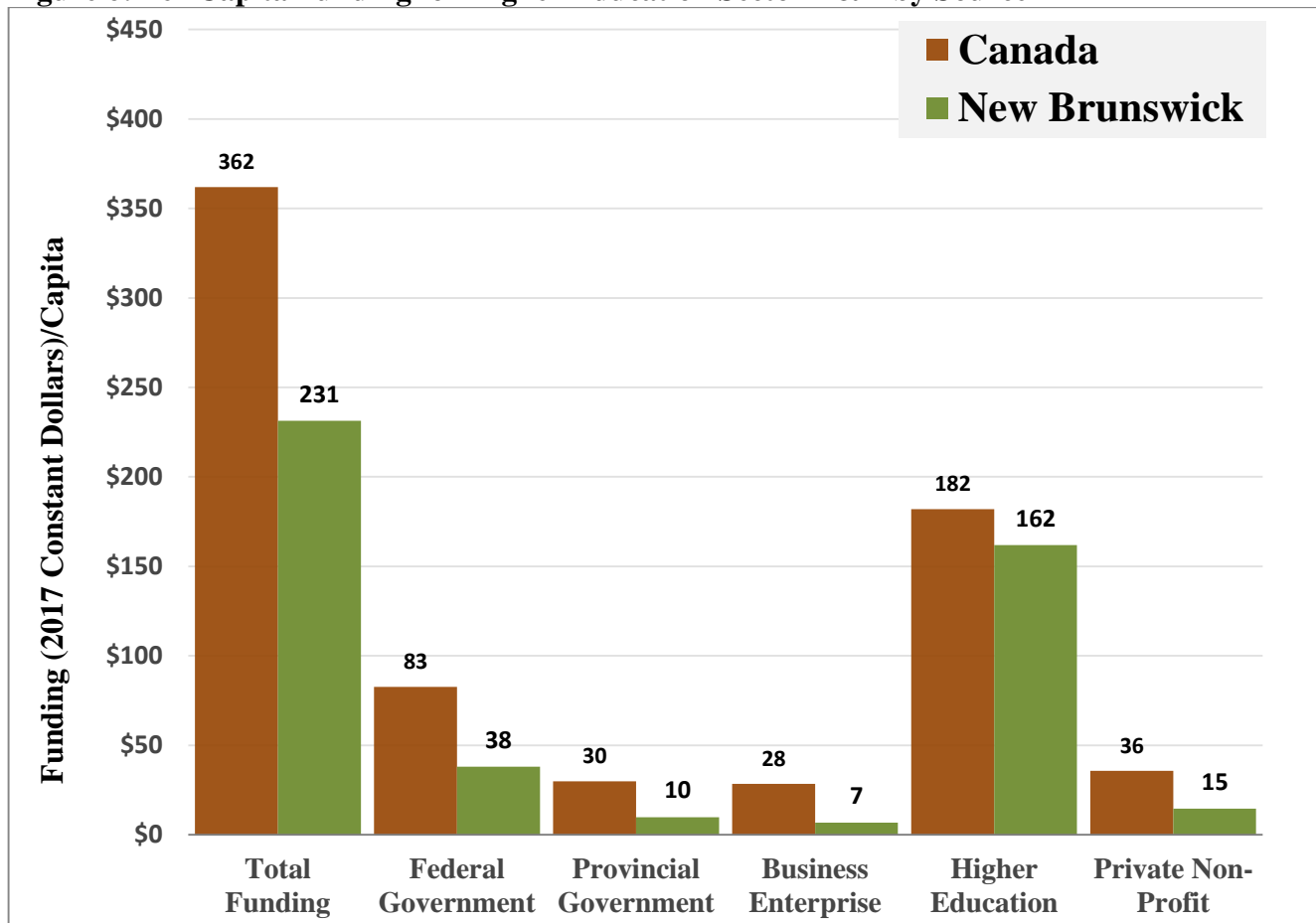


Data: Figure 5	FEDERAL GOVERNMENT (millions)	HIGHER EDUCATION (millions)	OTHER (millions)
2000	\$2.4	\$18.7	\$0.5
2001	\$2.9	\$18.5	\$0.6
2002	\$2.9	\$21.0	\$0.7
2003	\$5.7	\$23.4	\$0.9
2004	\$6.9	\$24.5	\$0.8
2005	\$8.7	\$27.9	\$0.8
2006	\$6.8	\$29.0	\$1.2
2007	\$7.0	\$29.4	\$1.5
2008	\$7.9	\$31.4	\$1.3
2009	\$9.1	\$33.0	\$1.0
2010	\$7.6	\$33.2	\$1.4
2011	\$7.4	\$34.2	\$1.3
2012	\$8.2	\$51.8	\$1.5
2013	\$8.1	\$50.3	\$1.5
2014	\$8.1	\$54.8	\$1.9
2015	\$7.5	\$55.1	\$2.1

Source: Statistics Canada, CANSIM Table 358-0162: Provincial estimates of research and development expenditures in the higher education sector, by funding sector and type of science, annual (dollars x 1,000,000); Statistics Canada, CANSIM Table 326-0021: Consumer Price Index, annual average, not seasonally adjusted

At \$231 per person, New Brunswick’s higher education sector has a lower per capita R&D value than the national average (\$362 per person). This gap in investment is consistent across all funding sources.

Figure 6: Per Capita Funding for Higher Education Sector R&D by Source



Data: Figure 6	CANADA	NEW BRUNSWICK
Total Funding Sectors	\$362	\$231
Federal Government	\$83	\$38
Provincial Government	\$30	\$10
Business Enterprise	\$28	\$7
Higher Education	\$182	\$162
Private Non-Profit	\$36	\$15

Source: Statistics Canada, CANSIM Table 358-0162: Provincial estimates of research and development expenditures in the higher education sector, by funding sector and type of science, annual (dollars x 1,000,000); Statistics Canada, CANSIM Table 326-0021: Consumer Price Index, annual average, not seasonally adjusted; Statistics Canada, CANSIM Table 051-0001: Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons)

Notes

- This goal assumes to measure the value of R&D in real dollars (as opposed to current prices). The values were re-indexed from the chained 2002 dollar to the chained 2017 dollar to reflect 2017 purchasing power.