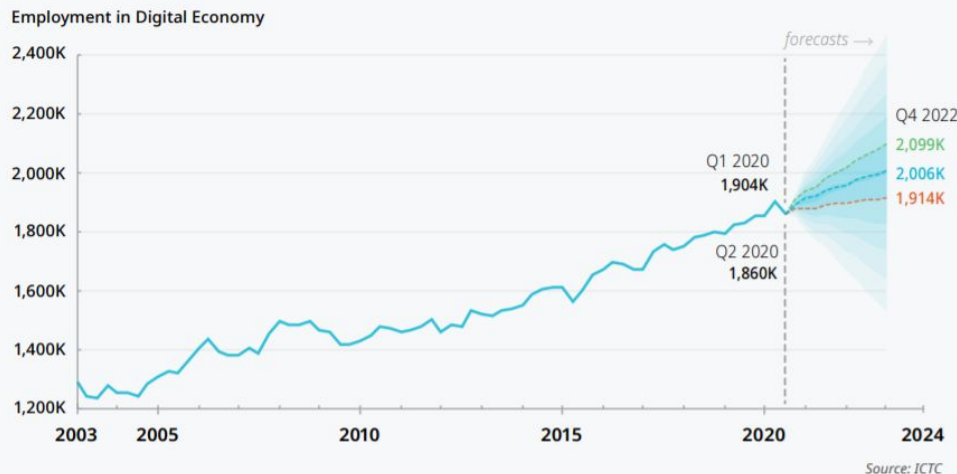




# The State of Black Canadians in STEM

# Industry Employment Growth

Figure 16: Digital Economy Employment Forecast



- Brookfield Institute - “ In 2016, around 935,000 Canadians were working in tech occupations, representing 5.1 percent of the Canadian labour force” - Roughly 1.6M when non tech jobs are added in
- CompTIA estimates industry employment at 1.72M in 2019
- The ICTC estimates there will be just over 2M tech workers in Canada by 2024
- Annual demand for tech workers in Canada is estimated at 57,706 /year between 2020 and 2024
- At 4.24% of the population by 2024, a representative share for Black workers would be **2,449** /year

Sources:

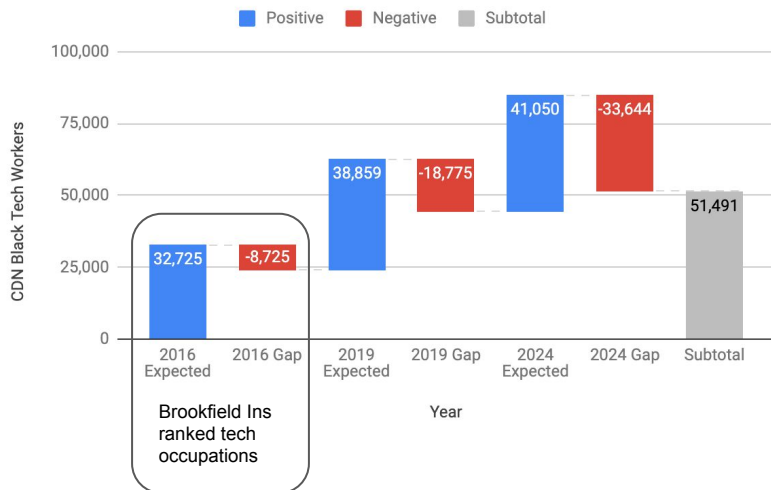
Brookfield Institute [https://brookfieldinstitute.ca/wp-content/uploads/FINAL\\_Tech-Workers-ONLINE.pdf](https://brookfieldinstitute.ca/wp-content/uploads/FINAL_Tech-Workers-ONLINE.pdf)

ICTC Forecast <https://www.ictc-ctic.ca/wp-content/uploads/2020/08/Outlook-ENG-FINAL-8-24-20.pdf>

CompTIA Cyberprovinces Report [https://comptiacdn.azureedge.net/webcontent/docs/default-source/memberresources/comptia-cyberprovinces-2020.pdf?stfrsn=a8956ddb\\_0](https://comptiacdn.azureedge.net/webcontent/docs/default-source/memberresources/comptia-cyberprovinces-2020.pdf?stfrsn=a8956ddb_0)

# Historical & Projected Employment Gaps

CDN Black Tech Workers (Projected Gap by 2024)



Year	Black Share of Population	CDN Black Tech Workers Expected	Actual/Projected based on 2.6% in 2016	Gap
2016	3.50%	32,725	24,000	-8,725
2019 (p)	3.66%	62,859	44,085	-18,775
2024 (p)	4.24%	85,135	51,491	-33,644

- Based on the Brookfield institute report, in 2016 there was a gap of ~8,725 Black tech workers (2.6% in tech occupations vs 3.5% in the population)
- We have assumed no major efforts to close the gap before the current push so the landscape is likely very similar today (2.6%) while the population continues to grow (4.24% by 2024)
- Projected do-nothing gap by 2024 could be as large as **33,644**

Sources:

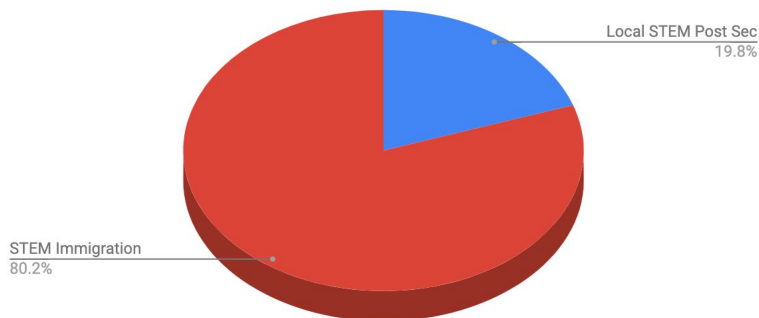
Brookfield Institute [https://brookfieldinstitute.ca/wp-content/uploads/FINAL\\_Tech-Workers-ONLINE.pdf](https://brookfieldinstitute.ca/wp-content/uploads/FINAL_Tech-Workers-ONLINE.pdf)

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CompTIA Cyberprovinces Report [https://comptiacdn.azureedge.net/webcontent/docs/default-source/memberresources/comptia-cyberprovinces-2020.pdf?sfvrsn=a8956ddb\\_0](https://comptiacdn.azureedge.net/webcontent/docs/default-source/memberresources/comptia-cyberprovinces-2020.pdf?sfvrsn=a8956ddb_0)

# Supply - Immigration & Graduation

Annual Supply

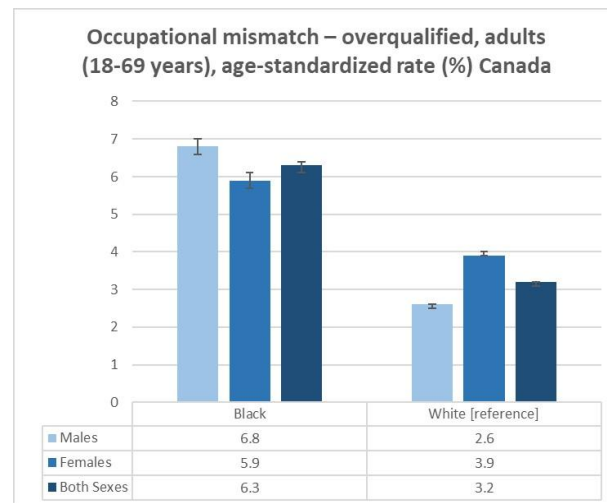
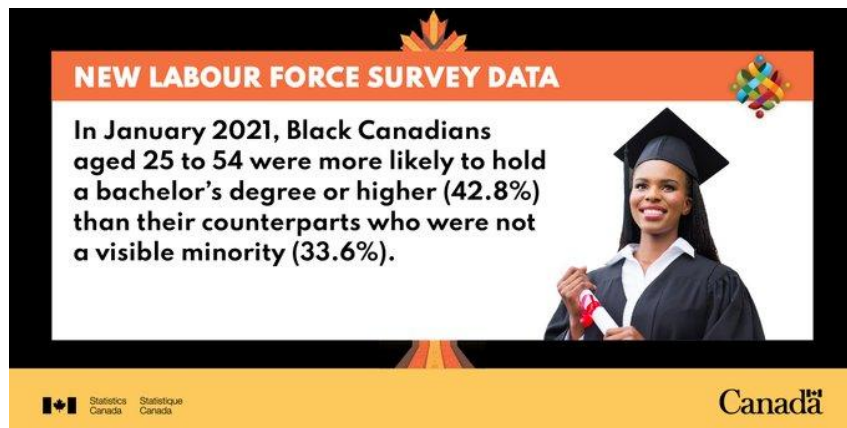


Source	Annual Supply	%
Local STEM Post Sec	2,119	20%
STEM Immigration	8,595	80%
Total Black STEM Supply	10,714	100%

Immigration Status	# of Tech Workers	Share of Tech Workforce
Non-immigrant	584,000	62.5%
Immigrant	351,000	37.5%

- We estimate that **2,119** local born Black Canadians per year will graduate with post secondary STEM credentials
- We expect **8,595** immigrants from Black majority regions with STEM qualifications per year to 2024
- Total annual supply is **10,714**
- **Notes**
  - Immigrants were 37.5% of the overall tech workforce and 42% of all STEM workers in 2016.
  - But they account for 80% of the annual Black STEM qualified labour supply
  - 1st gen immigrants are only 56% of the Black population
  - This points to weakness in local born STEM educational attainment for Black Canadians and the impact of practices such as streaming

# Supply - Unemployment & Underemployment



- “Statistics Canada census data from 2016 and data from a 2019 Universities Canada report indicate **6%** of undergraduate students, 6.1% of graduate students, and 3% of PhD graduates are Black”
- Black Canadians with a university degree had a lower employment rate (86.1%) than their non-visible minority counterparts (91.1%) - **56%** more likely to be unemployed
- Black Canadians are almost **twice** as likely (6.3%) to be overqualified for the jobs they hold relative to White Canadians (3.2%)

Sources:

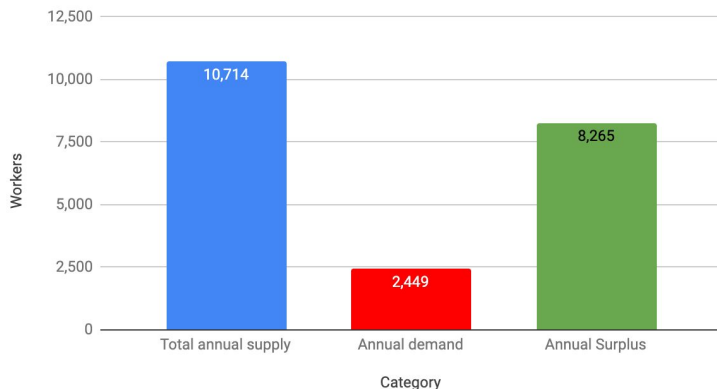
<https://www.cbc.ca/news/canada/post-secondary-scarborough-chapter-1.6254377>

<https://www150.statcan.gc.ca/n1/daily-quotidien/210224/dq210224b-eng.htm>

<https://www.canada.ca/en/public-health/services/health-promotion/population-health/what-determines-health/social-determinants-inequities-black-canadians-snapshot.html>

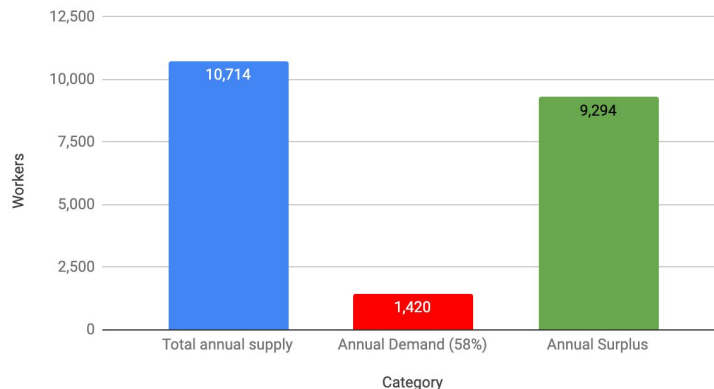
# Demand Vs Supply

100% STEM Workers Needed



Time Needed to Close the Gap	
Gap by 2024	33,644
Total annual supply	10,714
Years to close	3

58% STEM Workers Needed



Time Needed to Close the Gap	
Gap by 2024 (58%)	19,513
Total annual supply	10,714
Years to close	2

- Current supply is enough to meet demand and close the gap within 3 years (2024)
- A report from Indeed Hiring Lab indicates that even in the most tech intensive industry “Computer systems design and related services” only 58% of workers are in tech occupations
- This increases the annual surplus and shrinks the time needed to close the historical gap to 2 years (2023)

# Findings

## 1. We are over dependent on immigration to supply Black STEM workers (80% vs 37.5%)

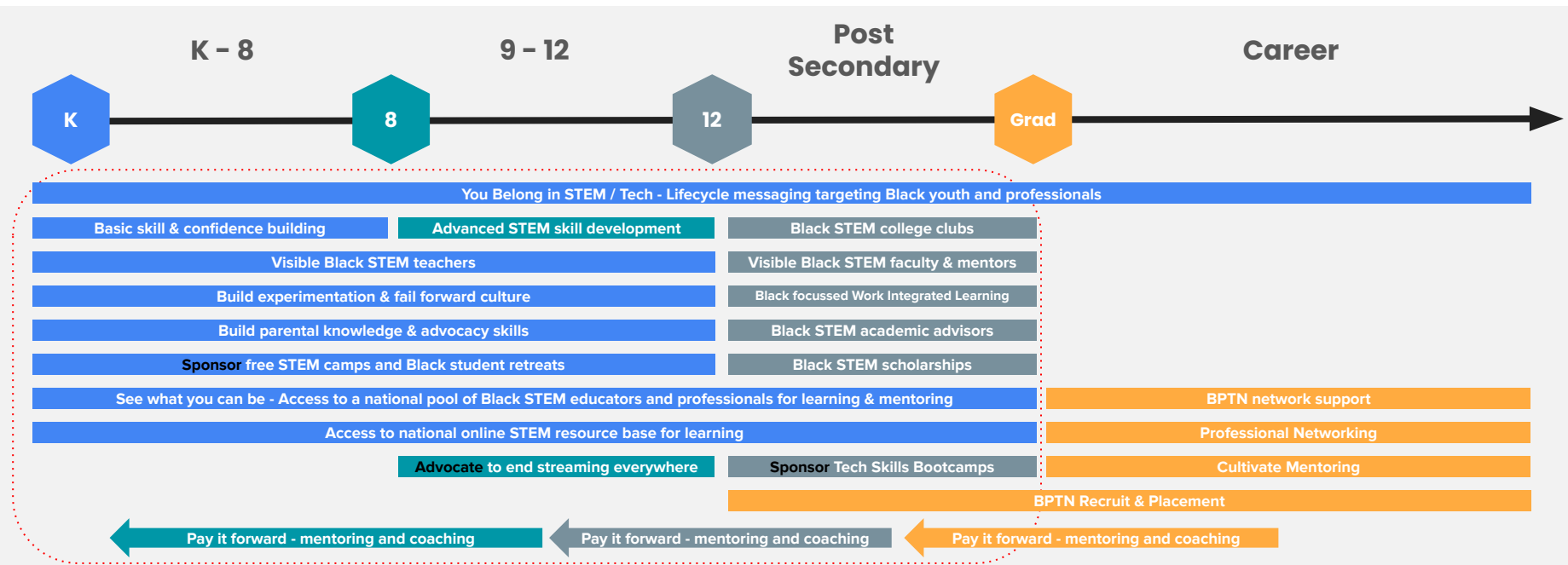
- This is risky and could backfire if immigration is cut or halted or if immigrants chose other destinations

## 2. Our education sector is not producing STEM qualified Black graduates at representative levels

- STEM credentials are 16% of all post sec credentials achieved by Black students vs 23% for all visible minority Canadians
- Streaming (e.g. TDSB reports 28% disproportionate impact)
- High suspension and expulsion rates
- Lack of a sense of belonging, academic supports, and visible Black teaching staff and faculty

## 3. The problem cannot be easily understood and tracked because of a lack of race disaggregated post secondary data

# Black STEM Education & Support Ecosystem





# Appendix 1 - Tables

# Black Pop - College Aged Segment + Canadian Born Degree Achievement

**Table 2**  
Percentage of individuals with a bachelor level or above among the population aged 25 to 59 years, Canada, 2016

	Black women	Women in the rest of the population	Black men	Men in the rest of the population
	percent			
Total population	27.5	32.7	27.7	26.7
Immigrants	25.4	42.8	29.8	42.3
Non-immigrants	31.4	28.6	18.4	21.1

Source: Statistics Canada, Census of Population, 2016.

Age group	Black population		Total population	
	Male	Female	Male	Female
	percent			
0 to 4	9.5	8.6	5.7	5.3
5 to 9	9.6	8.8	6.1	5.6
10 to 14	8.7	8.0	5.8	5.3
15 to 19	8.8	8.0	6.1	5.6
20 to 24	8.4	8.0	6.7	6.2
25 to 29	7.2	7.7	6.7	6.5
30 to 34	7.3	8.0	6.7	6.7
35 to 39	7.5	7.8	6.5	6.7
40 to 44	7.1	7.2	6.4	6.6
45 to 49	6.5	6.6	6.7	6.8
50 to 54	5.7	5.7	7.7	7.7
55 to 59	4.1	4.3	7.5	7.6
60 to 64	3.0	3.2	6.5	6.7
65 to 69	2.6	3.0	5.5	5.7
70 to 74	1.9	2.2	3.9	4.1
75 to 79	1.1	1.4	2.6	3.0
80 to 84	0.6	0.8	1.8	2.1
85+	0.3	0.7	1.2	1.8

Source: Statistics Canada, Census of Population, 2016.

# Black Pop - Educational Achievement

Source:

<https://www150.statcan.gc.ca/n1/pub/89-657-x/89-657-x2020002-eng.htm>

	Women	Men
	percent	
<b>Total Black population</b>		
<b>Total — Highest certificate, diploma or degree</b>	<b>100</b>	<b>100</b>
No certificate, diploma or degree	10.3	10.9
Secondary (high) school diploma or equivalency certificate	19	26.5
Apprenticeship or trades certificate or diploma	9.8	11.1
College, CEGEP or other non-university certificate or diploma	28.6	19.7
University certificate or diploma below bachelor level	4.8	4.1
University certificate, diploma or degree at bachelor level or above	27.5	27.7
<b>Immigrants</b>		
<b>Total — Highest certificate, diploma or degree</b>	<b>100</b>	<b>100</b>
No certificate, diploma or degree	11.7	10.8
Secondary (high) school diploma or equivalency certificate	18.4	24.7
Apprenticeship or trades certificate or diploma	11.1	11.4
College, CEGEP or other non-university certificate or diploma	28.5	18.6
University certificate or diploma below bachelor level	5	4.6
University certificate, diploma or degree at bachelor level or above	25.4	29.8
<b>Non-immigrants</b>		
<b>Total — Highest certificate, diploma or degree</b>	<b>100</b>	<b>100</b>
No certificate, diploma or degree	6.1	11.1
Secondary (high) school diploma or equivalency certificate	21	32.9
Apprenticeship or trades certificate or diploma	6.4	10.7
College, CEGEP or other non-university certificate or diploma	31.1	24.1
University certificate or diploma below bachelor level	4	2.8
University certificate, diploma or degree at bachelor level or above	31.4	18.4
<b>Source: Statistics Canada, Census of Population, 2016.</b>		
Local born all post sec	66.5	45.3
Local born 4 year degree	31.4	18.4

# Black Pop - All STEM Post Sec Achievement 2016

Visible Minority (15), Labour Force Status (8), STEM and BHASE (non-STEM) Groupings, Major Field of Study - Classification of Instructional Programs (CIP) 2016 (16), Highest Certificate, Diploma or Degree (9), Immigrant Status (4), Age (10) and Sex (3) for the Population Aged 15 Years and Over in Private Households of Canada, Provinces and Territories and Census Metropolitan Areas, 2016 Census - 25% Sample Data									
Geography = Canada [1]									
Global non-response rate (GNR) = 5.1 %									
STEM and BHASE (non-STEM) groupings, Major field of study - Classification of Instructional Programs (CIP) 2016 (16) = STEM									
Highest certificate, diploma or degree (9) = University certificate, diploma or degree at bachelor level or above									
Immigrant status (4) = Non-immigrants [2]									
Age (10) = 25 to 34 years									
Sex (3) = Total - Sex									
Visible minority (15)	Total - Labour force status [3]	In the labour force	Employed	Unemployed	Not in the labour force	Participation rate	Employment rate	Unemployment rate	% of all Fields + All post sec
Total - Visible minority [4]	197,060	178,510	169,325	9,190	18,550	90.6	85.9	5.1	19%
Total visible minority population	32,920	28,830	26,960	1,865	4,090	87.6	81.9	6.5	23%
South Asian [6]	7,870	6,585	6,105	485	1,285	83.7	77.6	7.4	20%
Chinese	12,515	11,230	10,595	635	1,285	89.7	84.7	5.7	29%
<b>Black</b>	<b>2,545</b>	<b>2,260</b>	<b>2,125</b>	<b>140</b>	<b>285</b>	<b>88.8</b>	<b>83.5</b>	<b>6.2</b>	<b>16%</b>
Filipino	1,555	1,385	1,280	105	170	89.1	82.3	7.6	22%
Latin American	525	465	440	25	60	88.6	83.8	5.4	17%
Arab	1,290	1,095	990	105	195	84.9	76.7	9.6	25%
Southeast Asian [7]	2,260	2,010	1,850	160	245	88.9	81.9	8	29%
West Asian [8]	345	305	290	15	40	88.4	84.1	4.9	23%
Korean	660	560	525	45	100	84.8	79.5	8	22%
Japanese	885	755	710	45	135	85.3	80.2	6	26%
Visible minority, n.i.e. [9]	730	660	635	30	70	90.4	87	4.5	20%
Multiple visible minorities [10]	1,745	1,515	1,425	85	230	86.8	81.7	5.6	26%
Not a visible minority [11]	164,145	149,680	142,360	7,320	14,465	91.2	86.7	4.9	19%

# Black Pop - STEM 4 Year Degree Achievement 2016

Visible Minority (15), Labour Force Status (8), STEM and BHASE (non-STEM) Groupings, Major Field of Study - Classification of Instructional Programs (CIP) 2016 (16), Highest Certificate, Diploma or Degree (9), Immigrant Status (4), Age (10) and Sex (3) for the Population Aged 15 Years and Over in Private Households of Canada, Provinces and Territories and Census Metropolitan Areas, 2016 Census - 25% Sample Data										
Geography = Canada [1]										
Global non-response rate (GNR) = 5.1 %										
STEM and BHASE (non-STEM) groupings, Major field of study - Classification of Instructional Programs (CIP) 2016 (16)										
Highest certificate, diploma or degree (9) = Bachelor's degree										
Immigrant status (4) = Non-immigrants [2]										
Age (10) = 25 to 34 years										
Sex (3) = Total - Sex										
Visible minority (15)	Total - Labour force status [3]	In the labour force	Employed	Unemployed	Not in the labour force	Participation rate	Employment rate	Unemployment rate	% of all Fields + 4 year post sec	Drop off
Total - Visible minority [4]	153870	140635	133550	7085	13230	91.4	86.8	5	15%	4.30%
Total visible minority population [5]	26615	23580	22055	1525	3040	88.6	82.9	6.5	19%	4.50%
South Asian [6]	6200	5245	4885	360	950	84.6	78.8	6.9	16%	4.30%
Chinese	10235	9290	8765	530	945	90.8	85.6	5.7	23%	5.20%
Black	2010	1815	1705	110	195	90.3	84.8	6.1	12%	3.30%
Filipino	1355	1200	1100	100	150	88.6	81.2	8.3	19%	2.80%
Latin American	440	380	365	20	55	86.4	83	5.3	14%	2.70%
Arab	1000	850	770	80	150	85	77	9.4	19%	5.50%
Southeast Asian [7]	1905	1710	1570	140	195	89.8	82.4	8.2	25%	4.60%
West Asian [8]	240	210	195	15	30	87.5	81.2	7.1	16%	6.90%
Korean	495	420	385	35	70	84.8	77.8	8.3	16%	5.50%
Japanese	710	635	595	35	75	89.4	83.8	5.5	21%	5.10%
Visible minority, n.i.e. [9]	610	560	540	25	45	91.8	88.5	4.5	17%	3.30%
Multiple visible minorities [10]	1420	1255	1170	80	170	88.4	82.4	6.4	21%	4.80%
Not a visible minority [11]	127250	117055	111495	5560	10195	92	87.6	4.7	15%	4.20%

# Black Pop - How We Derived STEM Graduation Rates

	2016 Women	2016 Men	Total		2024 Women	2024 Men	2024 Total
Black Population in Canada			1,200,000				1,664,415
Local Born	43.6%		523,200		43.6%		725,685
College aged rates (20 - 24)	8%	8.40%			8%	8.40%	
20 to 24 Population	41,856	43,949	85,805		58,055	60,958	119,012
Black grad rates - All post sec	66.5%	45.30%			66.50%	45.30%	
All post sec (over 5 years)	27,834	19,909	47,743		38,606	27,614	66,220
Annual post sec graduation (above divided by 5)	5,567	3,982	9,549		7,721	5,523	13,244
Black grad rates - 4 year degrees	31.40%	18.40%			31.40%	18.40%	
All 4 year degrees (over 5 years)	13,143	8,087	21,229		18,229	11,216	29,445
Annual 4 year degree (above divided by 5)	2,629	1,617	4,246		3,646	2,243	5,889
STEM as % of all post sec	16%		1,528		16%		2,119
STEM as % of 4 year degrees	12%		510		12%		707



# Immigrant Black STEM Workers

Area of Origin			Annual Immigration Targets			Estimated	
Last permanent residence	Annual	%	2021	2022	2023	2024	
			401,000	411,000	421,000	431,371	
Total immigrants	262,947		Growth rate	2.49%	2.43%	2.46%	
Total Asia	154,711						
Australasia	1,661						
Total United States, West Indies	20,777						
United States	9,265						
West Indies 6	11,512	4.38%					
All other countries	550						
Africa	36,485	13.88%					
Other North and Central America	5,457						
South America	8,944						
Total Black majority regions	47,997	18%	73,196	75,022	76,847	78,740	Average
Economic Class		58%	42,454	43,513	44,571	45,669	44,052
With Degrees		54%	23,010	23,584	24,158	24,753	23,876
% in STEM		36%	8,284	8,490	8,697	8,911	8,595

- Approximately 18% of immigration is historically from majority Black geographies as per StatsCan country of origin data
- Canada has released immigration targets to 2023 and we have assumed similar growth for 2024
- We have only considered economic class immigrants with degrees in STEM
- On average we should see **8,595** Black immigrants with tech qualifications every year to 2024

# Estimated Economic Impact

Group	Tech Pay	Non Tech Pay
Not a visible minority	\$79,400.00	\$46,800.00
Black	\$63,000.00	\$35,900.00
Gap	\$16,400.00	\$10,900.00

Workforce Gap Projection		-33,644
Salary gap*		\$43,500.00
Impact		-\$1,463,502,294.55
*Assuming these workers are in non tech occupations and earning the average salary vs working in tech at equal pay levels		

Source:  
Brookfield Institute <https://brookfieldinstitute.ca/wp-content/uploads/FINAL-Tech-Workers-ONLINE.pdf>