

# Unlocking Georgia's Potential:

## The Long-Term Economic and Social Benefits of Keeping Students in School

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*A School Justice Initiative Applied Research Report*

*Georgia Appleseed Center for Law & Justice*

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### Executive Summary

This research report examines how exclusionary discipline practices—such as suspensions and expulsions—affect graduation rates in Georgia, and the long-term impact of educational attainment on individuals, communities, and the state. Using data from Georgia's 2022 graduating cohort, the study provides clear evidence that keeping students in school generates major economic and social benefits.

**Ultimate Takeaway for Georgia: Each year, over 20,000 Georgia students fail to graduate from high school.** For 21,000 students who failed to graduate in 2022 alone, this results in:

- \$1.8 billion in net state fiscal costs over the students' lifetimes (lost taxes plus higher crime and health costs, minus reduced education spending).
- \$1.9 billion in federal fiscal costs over the students' lifetimes.
- \$10.7 billion in lost lifetime income to families and communities.
- Combined, this single class of non-graduating students represents a \$14.4 billion economic and fiscal loss for Georgia.

### Key Findings

- **Exclusionary discipline undermines graduation.** In 2022, Georgia schools recorded nearly 500,000 incidents of suspension or expulsion, with over 17,000 students suspended out of school for more than nine days—a practice strongly correlated with lower graduation rates.
- **Most long-term suspensions are for minor infractions.** Among suspensions lasting more than 9 days, 60.89% were for level 1 or level 2 severity issues (the least serious categories), and nearly one-third were for the least severe incidents. Research consistently shows suspension rates predict graduation rates even when controlling for poverty and race.

- **Graduation drives economic mobility.** High school graduates earn \$9,932 more annually than students who leave without a diploma—an additional \$502,000 over a lifetime. Bachelor's degree holders earn nearly \$1.65 million more than non-graduates.
- **State fiscal costs are substantial.** Each non-graduate costs the state an estimated \$83,757 in lost revenue and increased expenditures, including:
  - -\$25,667 in lost state tax revenue
  - +\$10,147 in higher Medicaid costs
  - +\$61,596 in higher crime-related expenditures
  - -\$13,653 offset from reduced K–12 spending

These combine to \$1.76 billion in total lifetime costs to Georgia for the 21,000 students who did not graduate in 2022.

## Policy Implications

- **Reducing reliance on suspensions and expulsions can significantly improve graduation rates.**
- **School-based reforms should focus on keeping students engaged and advancing toward diplomas.**
- **Graduation is among the highest-return investments Georgia can make**—each cohort of graduates delivers billions in economic and fiscal benefits, while each cohort of non-graduates costs the state and its communities dearly.

The following sections provide a detailed analysis of the data, methodology, and findings that underpin the results highlighted in this Executive Summary.

## Applied Research Report

This economic analysis is based on the graduating cohort 2022 in Georgia State's public schools. Data files from the Georgia Department of Education were cleaned and analyzed using STATA SE 18.0 on Georgia State University computer systems in the Department of Sociology to identify student suspensions, expulsions, and dropouts. Cost estimates of education, criminal activity, income, health, and taxes were developed from state and federal datasets, as well as previous academic work estimating these values. Population and educational attainment data were derived from the Current Population Survey 2024.

In this report we use the number of suspensions, expulsions, and dropouts to estimate the individual and cumulative costs of a student not completing High School in Georgia under different scenarios of future educational attainment. We analyze the outcomes at various units of analysis, including individual annual, individual lifetime, Cohort annual, and Cohort Lifetime.

We calculate Total Annual Savings (TAS) as  $TAS = I + T + C + H - E$

I: lost income earnings in comparison to someone with less than a HS diploma

T: lost tax income to the State of Georgia and the Federal Government

C: additional costs from Criminal activity

H: additional Health costs

E: additional Educational expenses due to educational attainment through state and federal support for primary and secondary education programs.

## Suspensions and Expulsions

Using data from the 2022 cohort of students in Georgia, we find that 277,345 incidences of in-schools suspension, averaging 1.78 days per incident. And 198,317 incidences of out-of-school suspensions, averaging 3.23 days.

Although suspension most often refers to out-of-school suspension (OSS), there also has been an increasing trend toward in-school suspension (ISS). ISS often involves the student being removed to a separate classroom for at least a full day, where he or she must complete work and cannot participate in mainstream activities alongside peers (Hyman, 1997). Therefore, we include, OSS, ISS, and Detentions that involved a duration of 9 days or more.

Existing studies have routinely found that suspension rate are a significant predictor of graduate rates and the ability to pass state achievement tests in both elementary and secondary schools, even when poverty and race were controlled for (Skiba & Rausch, 2004). The unfavorable relationship between suspensions and both outcome variables is consistent with a plethora of recent calls for shifts away from the use of exclusionary discipline (e.g., Losen, 2011; Noltemeyer & Fenning, 2013).

We found 17,497 incidences involved durations of 9 days or more during the 2022 academic year. Further, we find that a plurality of incidences were the result of lower level severities, where nearly 1/3 of suspensions of more than 9 days were for the least severe incidents and the majority (60.89%) of cases involving the suspension of a student of more than 9 days were for level 1 or level 2 severity issues.

	Total Incidences		Duration Greater than 9 days
Detention	5,812		215
In-School Suspension	277,345		655
Out-of-School Suspension	198,317		16,627
Total Detention/Suspension	481,474		17,497

Severity Level	Duration Greater than 9 days		
1	5,691		32.53%
2	4,962		28.36%
3	4,649		26.57%
Not reported	2,195		12.55%
Total Detention/Suspension	17,497		

## Dropouts

In the 2022 cohort of Georgia's high school graduating cohort, out of 133280, 112031 graduated, and 21325 dropped out, which is 16%. We projected these individuals' future academic and professional life course based on the national educational attainment rate and labor force status in the 2024 current population survey (CPS, 2024). It states that 11% have less than high school, 29% graduate high school, 24% have some college, 22% have four years of a college degree, 10% have a Master's degree, and 4% have a doctorate degree.

**Table 1: Educational Attainment in United States and Georgia Current Population Survey 2024**

Education Level	Freq.	Percentage
Less than High School	21325	11
High School Graduate	36480	29
Some College or Associate Degree	30190	24
Bachelor's Degree	27674	22
Graduate Degree	12579	10
Postgraduate Degree	5032	4

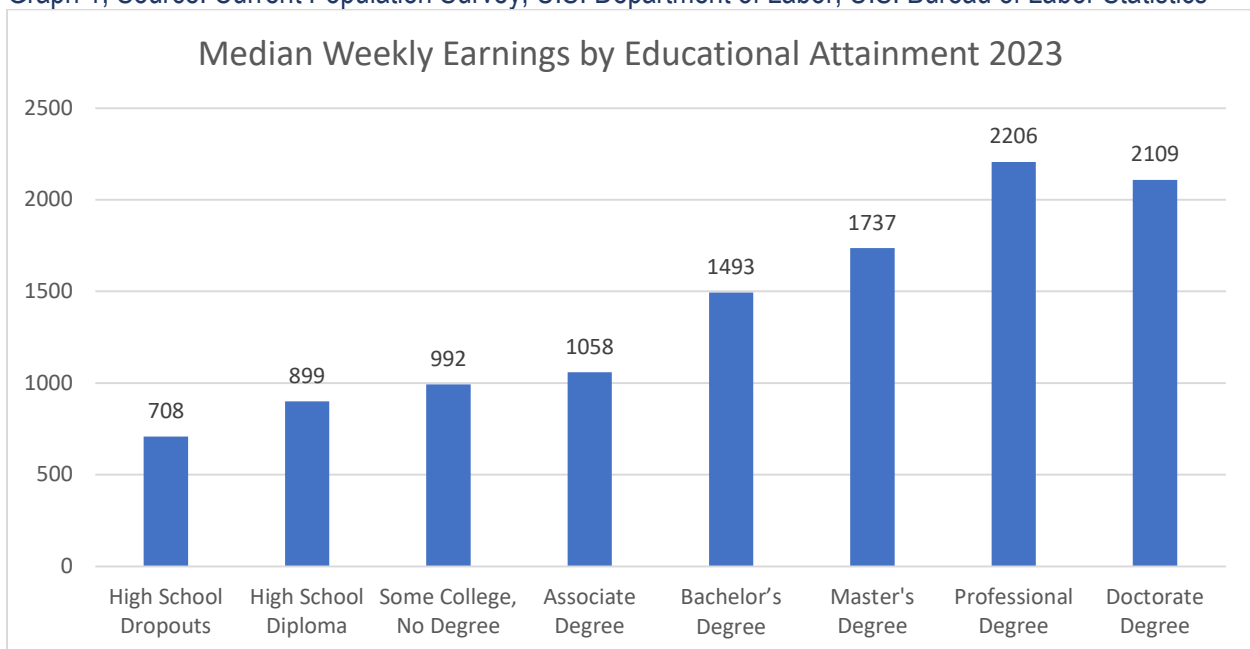
We used the 16% high school dropout rate instead of 11% out of the graduating cohort 2022 to represent a lower-than-high school education level. We projected the academic achievement of the remaining proportionally into further academic categories. We then find the labor force status by educational attainment, as shown in Table 2

**Table 2. Projected Labor Force Status of 2022 Cohort Source: CPS 2024**

Educational Attainment	Total	Employed (%)	Unemployed (%)	Not in Labor Force (%)
High School Dropouts	21,325	8,194 (38.39%)	636 (2.98%)	12,495 (58.63%)
High School Graduates	36,480	20,622 (56.54%)	1,054 (2.89%)	14,804 (40.57%)
Associate Degree/Some College	30,190	18,799 (62.27%)	648 (2.15%)	10,743 (35.58%)
Bachelor's Degree	27,674	20,146 (72.79%)	446 (1.61%)	7,082 (25.59%)
Graduate Degree	12,579	9,070 (72.12%)	179 (1.42%)	3,330 (26.45%)
Postgraduate Degree	5,032	3,760 (74.71%)	41 (0.81%)	1,231 (24.48%)

We calculated the salary at each educational level using the information available on the US Bureau of Labor and Statistics website, represented in Graph 1. We multiplied the weekly salaries by 52 to get the annual salaries by education attainment. We take the average college and associate degrees and similarly take the average of professional degrees and doctoral degrees. Drawing from Skoog, Ciecka, and Krueger (2011) work to determine the work-life expectancy, we calculate the average work-life expectancy by educational level, focusing on the mean work-life expectancy (WLE) for initially active men and women and calculated that the general average work-life expectancy for each educational level in Table 1 is 27, 32, 31, 34, 33, and 32 years respectively before retirement at age 65. We multiply the annual salary with WLE for all the individuals in the labor force (Employed and Unemployed) to calculate their lifetime salary by educational attainment, as shown in Table 3.

**Graph 1, Source: Current Population Survey, U.S. Department of Labor, U.S. Bureau of Labor Statistics**



The graph represents information available at the U.S. Bureau of Labor and Statistics (2024) website, based on the Current Population Survey for full-time 25-year-old and above workers. Educational attainment strongly correlates with income potential, highlighting its critical role in shaping economic outcomes. High school graduates earn, on average, \$9,932 more annually than dropouts. This income gap widens with advanced education: bachelor's degree holders earn \$40,820 more annually, and postgraduate degree holders earn over \$75,000 more than dropouts.

We assumed the same weekly salary for recent high school dropouts aged 18 and calculated the monthly and annual salary for all educational attainments. This measure should be considered highly conservative as we make no concessions in our estimates for future wage growth and instead project only 2024 salary levels for future income attainment.

**Table: 3 Individual Annual and Lifetime Income by Educational Attainment**

Income	High School Dropouts	High School Graduates	Some College	Bachelor's Degree	Graduate Degree	Postgraduate Degree
Annual Income (\$)	\$36,816	\$46,748	\$53,300	\$77,636	\$90,324	\$112,216
Annual Difference (\$)	-	+\$9,932	+\$16,484	+\$40,820	+\$53,508	+\$75,400
Lifetime Income (\$)	\$994,032	\$1,495,936	\$1,652,300	\$2,639,624	\$2,980,692	\$3,590,912
Lifetime Difference (\$)	-	+\$501,904	+\$658,268	+\$1,645,592	+\$1,986,660	+\$2,596,880

The table presents working lifetime earnings in millions of dollars. High school dropouts earn approximately \$0.99 million over their lifetime, while high school graduates earn \$1.50 million, reflecting a difference of \$.50 million. Individuals with an associate degree or some college earn \$1.65 million, while bachelor's degree holders experience a substantial increase to \$2.64 million, representing a \$1.65 million gain compared to high school dropouts. Graduate degree holders earn \$2.98 million, and those with postgraduate degrees reach the highest earnings of \$3.59 million, an impressive \$2.60 million more than high school dropouts. This data highlights the significant financial advantages of higher education over a lifetime.

## Key Inferences from Annual and Lifetime Income Data

### Graduates earn significantly more than dropouts.

- High school graduates earn \$9,932 more annually than dropouts, which adds up to an additional \$501,904 over their lifetime.
- Preventing 1% of dropouts (213 students) would generate \$2.1 million in additional annual income and \$106.9 million in additional lifetime income.

### Higher educational attainment drives more significant gains.

- A bachelor's degree holder earns \$40,820 more annually and \$1,645,592 more over their lifetime than a high school dropout.
- Graduate degree holders earn \$53,508 more annually, while postgraduate degree holders earn an incredible \$75,400 more annually than dropouts. These differences compound into lifetime earnings gains of \$1.98 million and \$2.59 million, respectively.

### **Preventing dropouts boosts economic mobility.**

- Preventing just 10% of dropouts (2,133 students) would result in an additional \$21.3 million annual income and \$1.07 billion in lifetime income, benefiting families, communities, and the state economy.

### **The income gap widens over time.**

- While the annual income gap between dropouts and graduates is significant, the lifetime income gap grows exponentially:
- High school graduates earn 50% more lifetime income than dropouts.
- Bachelor's degree holders earn nearly 3x more lifetime income than dropouts.

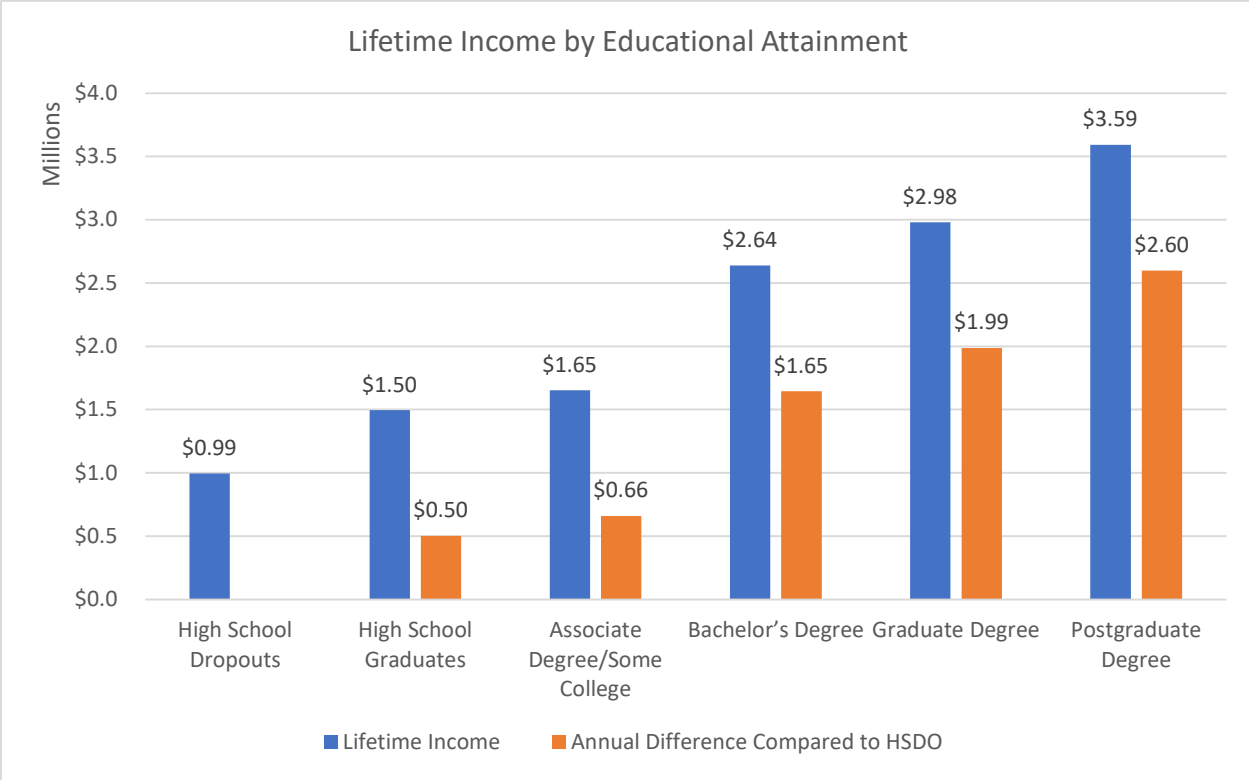
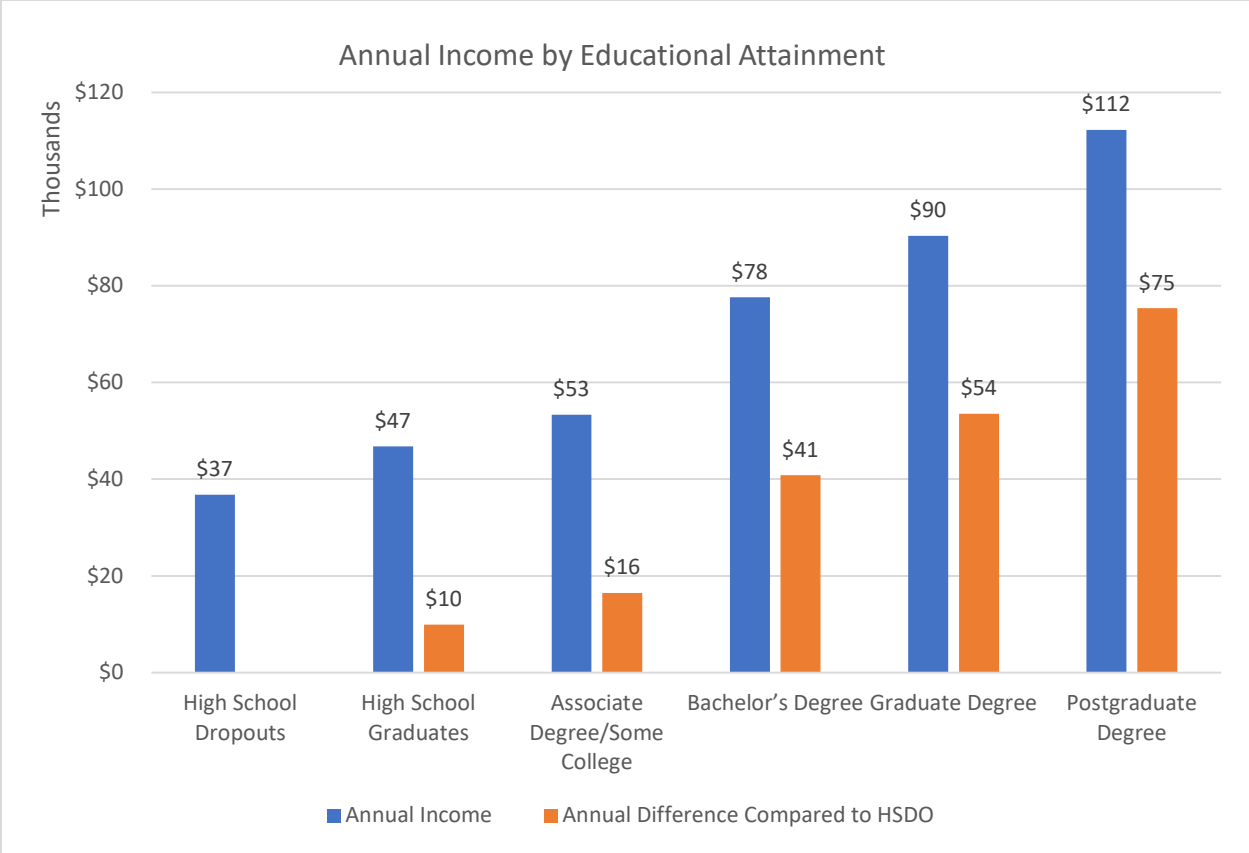
### **Education narrows the salary gap.**

- Higher educational attainment significantly increases lifetime earnings, helping to reduce intergenerational poverty and improve overall economic mobility.

### *Policy Implications:*

- Dropout Prevention Strategies: Programs that reduce dropout rates at any level can significantly improve individual and societal economic outcomes.
- Promoting Educational Progression: Interventions should focus not only on completing high school but also on encouraging pathways to associate, bachelor's, and advanced degrees, as these yield exponentially higher returns.

The following two bar graphs are based on the income analysis above.





The annual income graph shows annual earnings in thousands, demonstrating the financial impact of education. Income improvements by educational attainment escalate quickly when considered over a working lifetime.

## Analysis of Dropout Scenarios

What would ideally be the additional annual and lifetime income high school dropouts receive if 1%, 5%, and 10% of the total dropouts (21325) move on to successive educational levels compared to their current income? We tried to answer this by assuming these individuals complete each educational level. We analyze 1% of the graduate and postgraduate degree levels due to the low educational attainment rates of 10% and 4%, respectively.

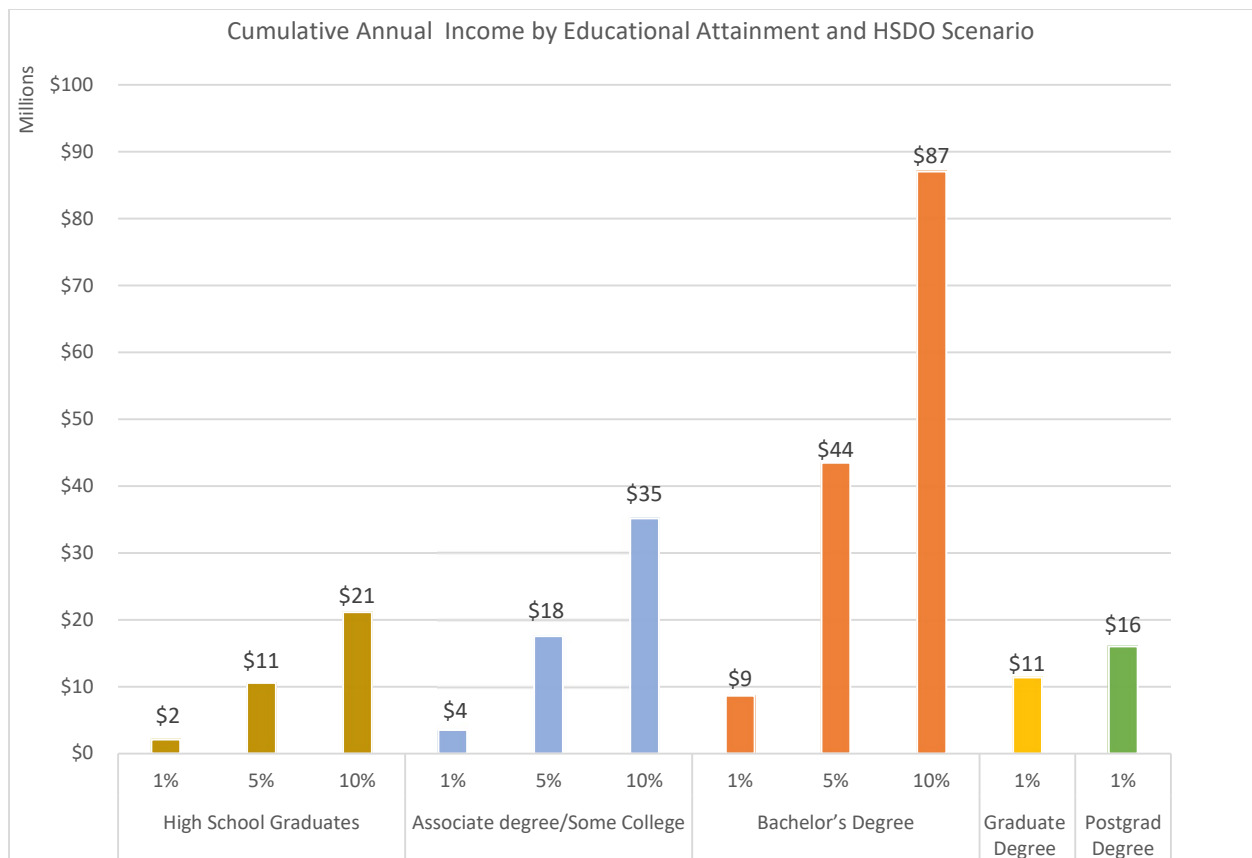
**Table 4: Income Gains Across Educational Levels for Saving 1%, 5%, and 10% of High School Dropouts**

Education Level	HSDO Saved Scenario	Additional Annual Income	Additional Lifetime Income
High School Graduates	1%	\$2,115,516	\$106,905,552
	5%	\$10,587,512	\$535,029,664
	10%	\$21,184,956	\$1,070,561,232
Associate degree/Some College	1%	\$3,511,092	\$140,211,084
	5%	\$17,571,944	\$701,713,688
	10%	\$35,160,372	\$1,404,085,644
Bachelor's Degree	1%	\$8,694,660	\$350,511,096
	5%	\$43,514,120	\$1,754,201,072
	10%	\$87,069,060	\$3,510,047,736
Graduate Degree	1%	\$11,397,204	\$423,158,580
Postgraduate Degree	1%	\$16,060,200	\$553,135,440

1% = 213, 5% = 1066, 10% = 2133 High School Dropout (HSDO)

The data highlights the substantial economic impact of preventing high school dropouts. For example, 5% of dropouts completing high school would generate an additional \$11 million and \$535 million in lifetime income, while the same number achieving graduate degrees would generate 44 million annually and \$1.75 billion. The analysis demonstrates that higher levels of education yield exponentially greater financial returns, with even small-scale dropout prevention efforts translating into billions of dollars in lifetime earnings. These findings underscore the importance of targeted interventions to reduce dropout rates and promote pathways to higher education.

The two bar graphs below illustrate the data from the table above and provide further insight into the additional income.

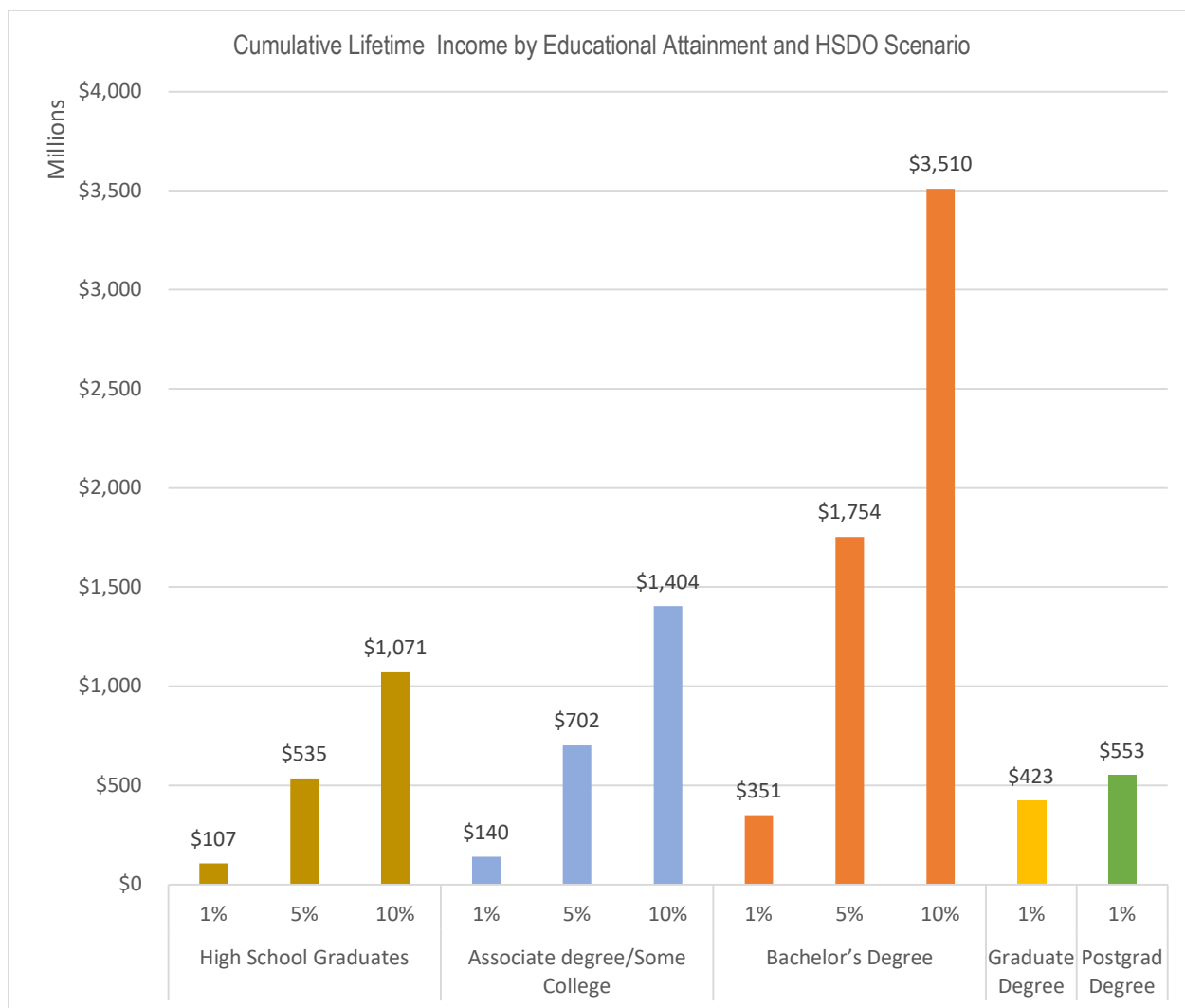


1% = 213, 5% = 1066, 10% = 2133 High School Dropout (HSDO). Salary is rounded off to the nearest whole number

The bar graph illustrates the additional annual income generated by preventing 1 percent, 5 percent, or 10 percent of students from dropping out and enabling them to attain higher educational qualifications.

Preventing 1 percent of dropouts generates an additional 2 million dollars in annual income for high school graduates, while 5 percent and 10 percent result in 11 million and 21 million dollars, respectively. For students achieving an associate degree or some college, the additional annual income rises to 4 million dollars for 1 percent, 18 million dollars for 5 percent, and 35 million dollars for 10 percent.

Bachelor's degree holders generate significantly higher annual income, with 9 million dollars, 44 million dollars, and 87 million dollars for 1 percent, 5 percent, and 10 percent, respectively. The impact becomes even more substantial at higher education levels; 1% of additional graduate and postgraduate degree holders generate up to 11 and 16 million dollars annually compared to what they are earning as high school dropouts. Conversely, by not graduating to these higher educational levels, the 1%, 5%, and 10% are losing this much potential additional income.



1% = 213, 5% = 1066, 10% = 2133 High School Dropout (HSDO) Salary is rounded off to the nearest whole number

The bar graph highlights the additional lifetime income generated by preventing 1 percent, 5 percent, or 10 percent of students from dropping out and enabling them to achieve higher educational qualifications than their current earnings. For high school graduates, preventing 1 percent of dropouts results in an additional 107 million dollars in lifetime income, while 5 percent and 10 percent generate 535 million dollars and 1071 million (1.07 billion) dollars, respectively. For students attaining an associate degree or some college, the additional lifetime income increases to 140 million dollars for 1 percent, 702 million for 5 percent and 14024 million (1.4 billion) dollars for 10 percent. Bachelor's degree holders show a significant increase, with additional lifetime earnings of 351 million, 1754 million (1.75 billion), and 3510 million (3.51 billion) dollars for 1 percent, 5 percent, and 10 percent, respectively. The graph underscores the long-term economic value of higher education in significantly enhancing lifetime earnings compared to the 1%, 5%, and 10% with less than high school education.

## Taxes: Federal and State

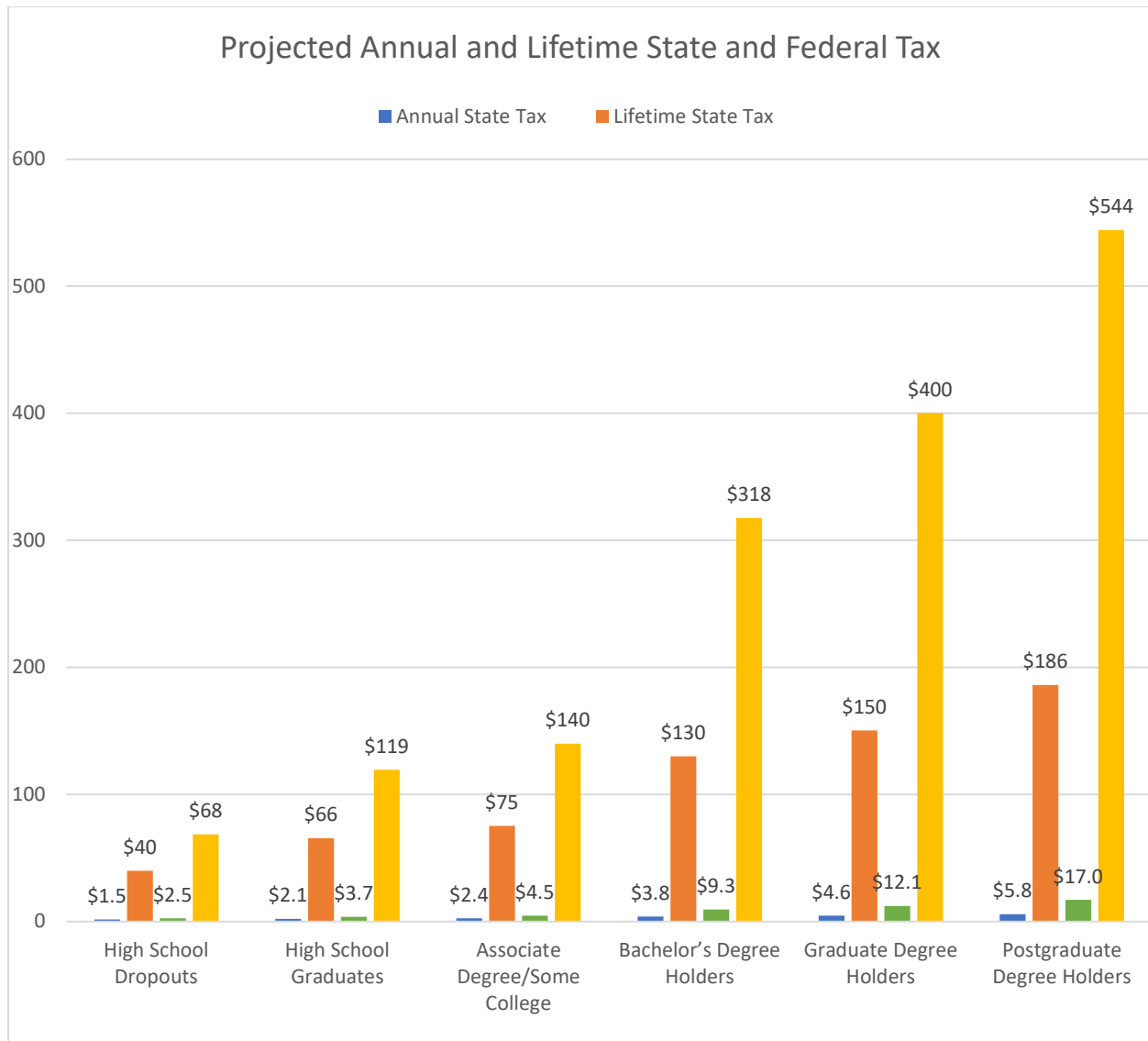
In Table 5, we calculated the Federal and State taxes following the IRS (2024) website by the individual's annual salary. We calculated the lifetime state and federal taxes using the WLE years for the years an individual is professionally active before retirement at 65. Again, these values should be considered highly conservative as we do not adjust future income gains during a working lifetime.

**Table 5 Annual and Lifetime Federal and State Taxes**

Educational Attainment	High School Dropouts	High School Graduates	Associate Degree/Some College	Bachelor's Degree Holders	Graduate Degree Holders	Postgraduate Degree Holders
Annual State Tax	\$1,479	\$2,050	\$2,426	\$3,826	\$4,555	\$5,814
Difference*	-	\$571	\$947	\$2,347	\$3,076	\$4,335
Lifetime State Tax	\$39,933	\$65,600	\$75,206	\$130,084	\$150,315	\$186,048
Difference*	-	\$25,667	\$35,273	\$90,151	\$110,382	\$146,115
Annual Federal Tax	\$2,536	\$3,728	\$4,514	\$9,340	\$12,132	\$17,008
Difference*	-	\$1,192	\$1,978	\$6,804	\$9,596	\$14,472
Lifetime Federal Tax	\$68,472	\$119,296	\$139,934	\$317,560	\$400,356	\$544,256
Difference*	-	\$50,824	\$71,462	\$249,088	\$331,884	\$475,784

\*Difference is compared to High School Dropouts

This table highlights the significant differences in annual and lifetime state and federal tax contributions by educational attainment. High school graduates contribute \$571 more in state taxes annually and \$25,667 more over their lifetime than dropouts. Tax contributions increase substantially with higher levels of education, with bachelor's degree holders contributing \$2,347 more in annual state taxes and \$90,151 more in lifetime state taxes than dropouts. These findings demonstrate the substantial fiscal benefits of higher educational attainment for state and federal governments.



The bar graph visualizes the exact relationship between educational attainment and the amount of taxes state and federal paid annually and over a lifetime. It shows that higher levels of education result in more outstanding tax contributions due to increased income. High school dropouts pay the least in annual state and federal taxes, contributing approximately \$1,479 and \$2,536, respectively, and their lifetime contributions amount to \$39,933 in state taxes and \$68,472 in federal taxes.

In contrast, postgraduate degree holders pay the highest taxes, contributing \$5,814 in annual state taxes and \$17,008 in annual federal taxes. Their lifetime tax contributions are substantial, reaching \$186,048 for state taxes and \$544,256 for federal taxes. As educational attainment increases from high school graduates to postgraduate degrees, there is a consistent rise in both annual and lifetime tax contributions, underscoring the broader societal benefits of higher education through increased public revenue.

## *Analysis of Tax*

### 1. Education Pays Dividends for the State and Federal Governments

- High school graduates contribute \$571 more in state taxes annually and \$1,192 more in federal taxes than dropouts. Over their lifetime, this adds up to an additional \$25,667 in state taxes and \$50,824 in federal taxes per person.

### 2. The Fiscal Gains Increase Dramatically with Higher Education

- A bachelor's degree holder contributes \$2,347 more annually in state taxes and \$6,804 more annually in federal taxes than a high school dropout. Over their lifetime, this translates to an additional \$90,151 in state taxes and \$249,088 in federal taxes per individual.

### 3. The ROI of Dropout Prevention is Enormous

- Preventing dropouts is a high-return investment for the state. For every 1% dropout prevented, the state and federal governments collectively gain \$16.3 million in lifetime tax contributions. These additional funds could be reinvested into public education or other critical programs.

### 4. Higher Education is a Key Driver of Fiscal Health

- Postgraduate degree holders contribute \$4,335 more annually in state taxes and \$14,472 more annually in federal taxes than dropouts. Over their lifetime, they contribute \$146,115 more in state taxes and \$475,784 more in federal taxes, demonstrating the compounding fiscal benefits of higher educational attainment.

## *Analysis of Saving 1%, 5%, and 10% High School Dropouts on Annual and Lifetime Tax Gains by Educational Attainment.*

We calculated the additional tax gains using the same assumptions as those applied to the income analysis above. This annual and lifetime state and federal tax could have been a reality if these students had reached successive educational levels, such as 1% (213) achieving high school graduation or graduating from a two-year program (some college/associate degree) or a four-year college (Bachelor's degree). Conversely, the following analysis illustrates how much the state and federal government lose when these students drop out and cease advancing through each educational level.

Table 6: State and Federal Additional Tax Gains for Saving 1%, 5%, and 10% of High School Dropouts

Education Level	HSDO Saved Scenario	Annual State Tax Gain	Lifetime State Tax Gain	Annual Federal Tax Gain	Lifetime Federal Tax Gain
High School Graduates	1%	\$121,623	\$5,467,071	\$253,896	\$10,825,512
	5%	\$608,686	\$27,361,022	\$1,270,672	\$54,178,384
	10%	\$1,217,943	\$54,747,711	\$2,542,536	\$108,407,592
Associate Degree/Some College	1%	\$201,711	\$7,513,149	\$421,314	\$15,221,406
	5%	\$1,009,502	\$37,601,018	\$2,108,548	\$76,178,492
	10%	\$2,019,951	\$75,237,309	\$4,219,074	\$152,428,446
Bachelor's Degree	1%	\$499,911	\$19,202,163	\$1,449,252	\$53,055,744
	5%	\$2,501,902	\$96,100,966	\$7,253,064	\$265,527,808
	10%	\$5,006,151	\$192,292,083	\$14,512,932	\$531,304,704
Graduate Degree	1%	\$655,188	\$23,511,366	\$2,043,948	\$70,691,292
Postgraduate Degree	1%	\$923,355	\$31,122,495	\$3,082,536	\$101,341,992

1% = 213, 5% = 1066, 10% = 2133 High School Dropout (HSDO).

This table provides a comprehensive overview of state and federal tax revenue gains—both annual and lifetime—resulting from reducing high school dropout rates by 1%, 5%, and 10%. It categorizes the data by educational attainment, from high school graduates to postgraduate holders. The table highlights several significant trends and relationships, revealing the profound fiscal impact of dropout prevention and higher educational attainment. Tax revenue increases are projected across five educational attainment levels: high school graduates, associate degree/some college, bachelor's degree holders, graduate degree holders, and postgraduate degree holders. For example, preventing 1% of dropouts (213 students) from earning only a high school diploma generates a lifetime tax gain of \$5.5 million in state taxes and \$10.8 million in federal taxes. In contrast, the same 213 students achieving a postgraduate degree would generate \$31.1 million in state taxes and \$101.3 million in federal taxes.

These findings underscore the substantial fiscal benefits of improving educational attainment.

## 1. Federal Revenue Dominates, Especially at Higher Educational Levels

- Federal tax revenue outpaces state revenue at every level of education and dropout reduction. For postgraduates (10% reduction), federal lifetime tax gains (\$1.01 billion) are more than 3 times higher than state lifetime tax gains (\$311.7 million).
- This disparity is largest for advanced degrees, making federal policies crucial for supporting higher education.

## 2. Tax Gains from Higher Education Outpace Gains from Larger Dropout Reductions

The marginal tax revenue from advancing students to higher education levels exceeds that of preventing additional dropouts. For instance:

- Moving 10% of students from a high school diploma to an associate degree increases lifetime state tax revenue by \$20.5 million.
- Moving from a bachelor's to a graduate degree adds \$43.1 million in state tax gains.

This demonstrates that improving educational attainment has a considerable fiscal impact compared to reducing dropout rates.

### 3. State and Federal Tax Gains Scale Proportionally with Dropout Reductions

The increase in tax revenue is nearly linear as dropout reductions scale from 1% to 10%. For example:

- Lifetime federal tax gains for high school graduates grow from \$10.8 million (1%) to \$108.4 million (10%).
- This proportional scaling suggests that the economic impact of dropout prevention is predictable, making it easier for policymakers to assess the financial returns of such programs.

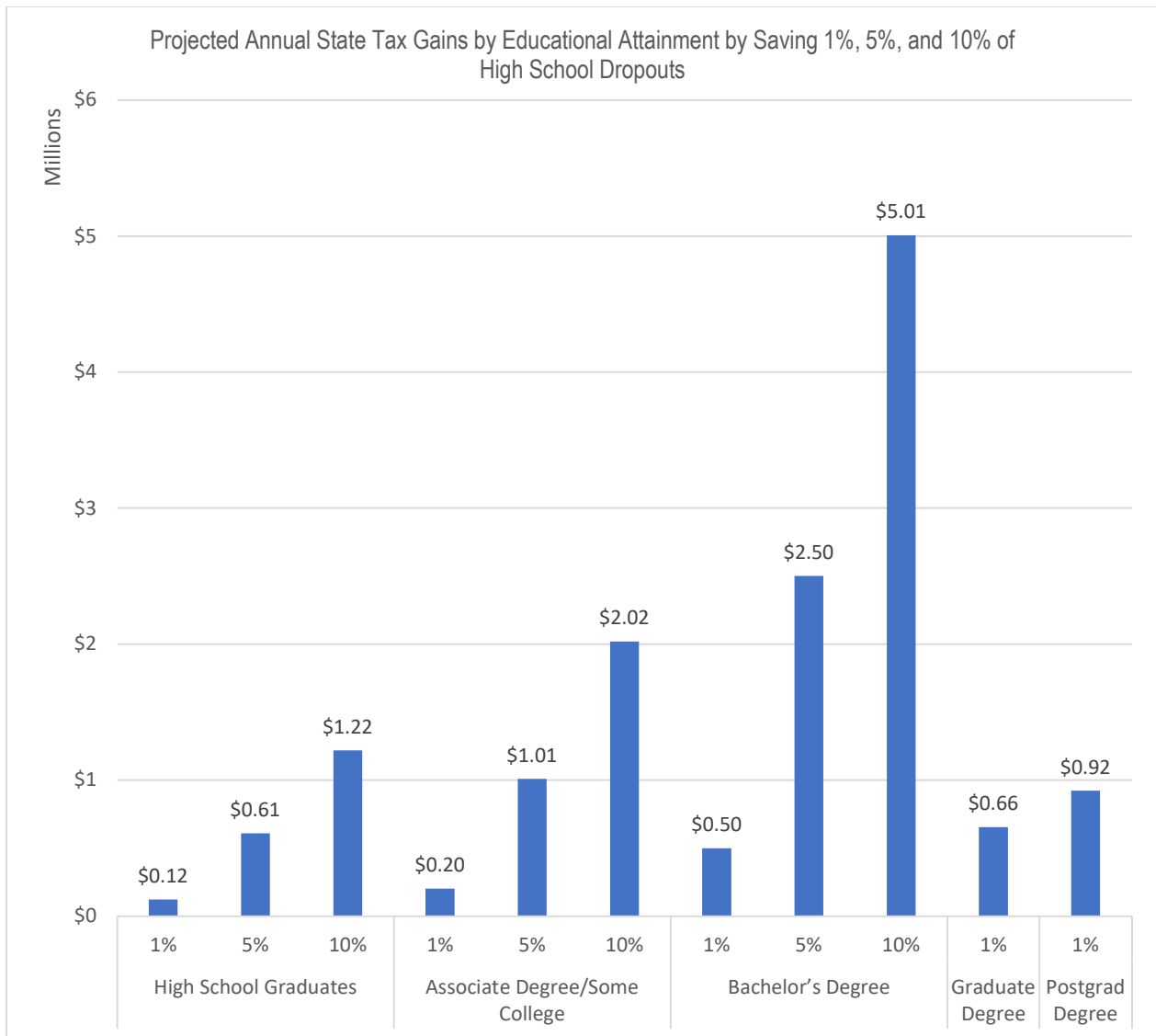
### 4. Higher Education Levels Drive Exponentially Larger Tax Gains Across All Tax Categories

Revenue contributions increase exponentially as students attain higher education. For example, at the 10% dropout reduction level:

- High School Graduates: Combined lifetime tax revenue (state + federal) is \$163.1 million.
- This shows that investing in policies that support dropout prevention and pathways to graduate and postgraduate education yields the most significant fiscal returns across all tax categories.

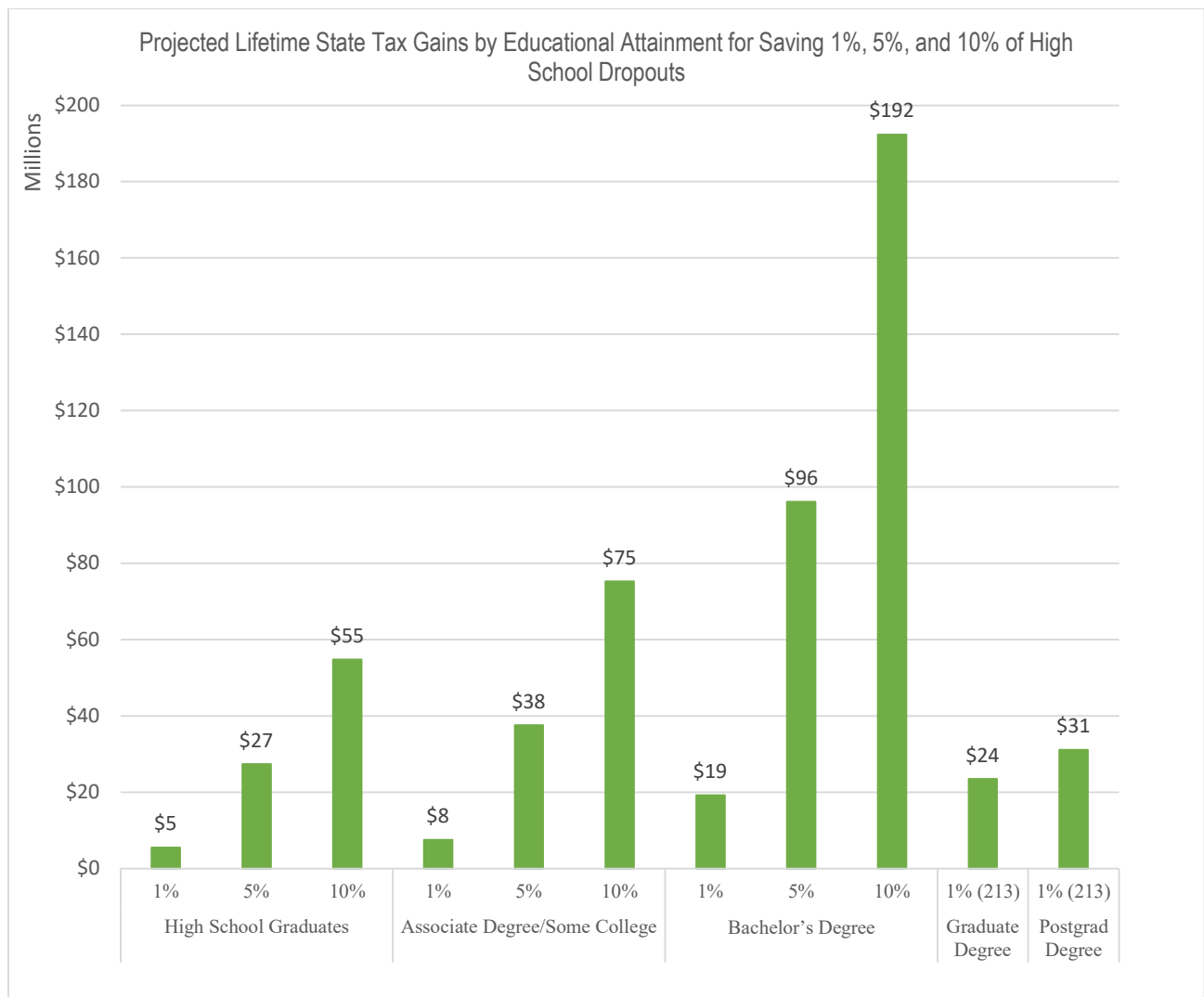
The following two bar graphs illustrate these findings graphically.



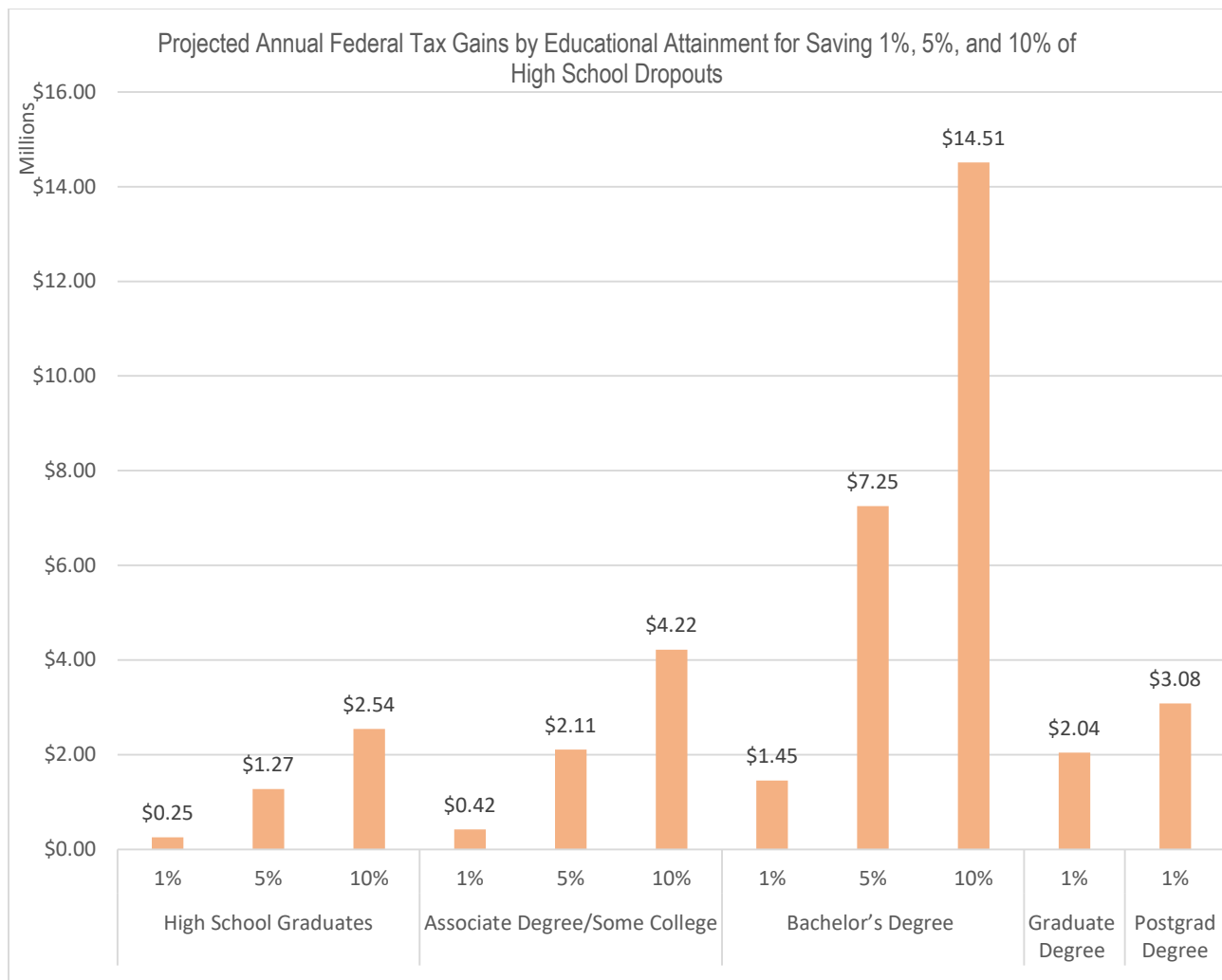


1% = 213, 5% = 1066, 10%= 2133 High School Dropout (HSDO). The amount is rounded off to the nearest two decimal places

This Bar graph shows the annual state tax gains associated with preventing 1%, 5%, and 10% of students from dropping out of high school, segmented by educational attainment levels. The gains progressively increase as the percentage of students saved from dropping out and their educational attainment levels rise. For instance, preventing 1% of dropouts generates \$121,623 (0.12 million) annually in state tax gains for high school graduates, while for postgraduate degree holders, it jumps to \$923,355 (0.92 million). Similarly, preventing 10% of dropouts results in \$1.2 million in state tax gains for high school graduates and \$5.01 million for graduates. This trend highlights the substantial fiscal benefits of reducing dropout rates and achieving higher educational outcomes.

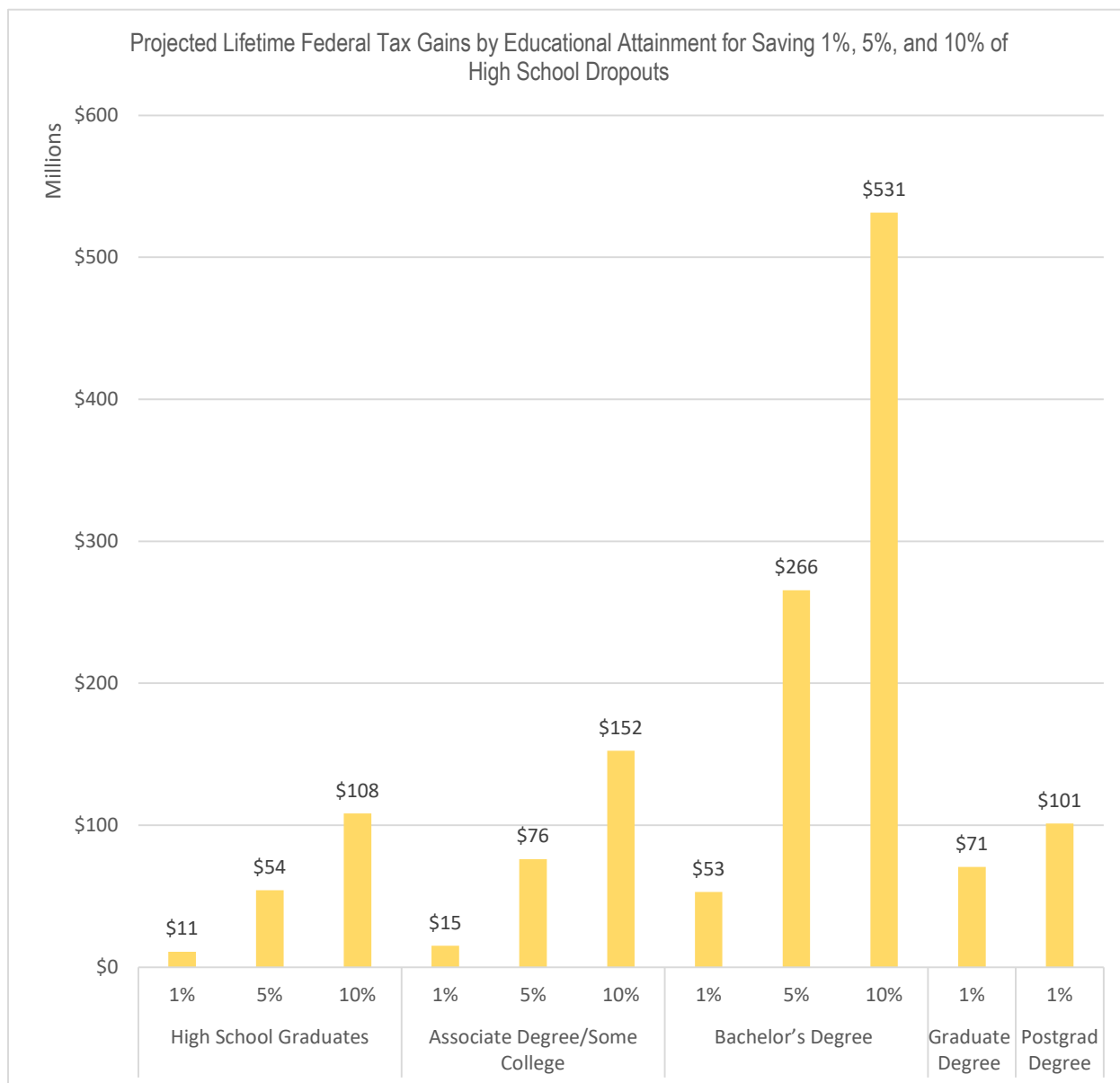


The bar graph outlines the lifetime state additional tax gains associated with preventing 1%, 5%, and 10% of students from dropping out of high school based on their subsequent educational attainment. Lifetime gains increase significantly with higher education levels and more significant reductions in dropout rates. This trend highlights the long-term fiscal advantages of improving educational attainment and reducing dropout rates.



1% = 213, 5% = 1066, 10% = 2133 High School Dropout (HSDO). The amount is rounded off to the nearest two decimal places

This graph highlights the annual federal additional tax gains achieved by preventing 1%, 5%, and 10% of high school students from dropping out and the group moves up by each educational attainment level. The data shows a significant increase in federal tax revenue as both the percentage of students saved and their educational attainment levels rise. For instance, preventing 1% of dropouts generates \$253,896 annually for high school graduates, compared to \$3.1 million for postgraduate degree holders. Similarly, a 10% reduction yields \$2.5 million for high school graduates and \$14.5 million for undergraduates. These figures demonstrate the federal fiscal benefits of dropout prevention programs, particularly when paired with policies to enhance educational achievement. Here is another way of interpreting these results based on Table 6.



1% = 213, 5% = 1066, 10% = 2133 High School Dropout (HSDO). The amount is rounded off to the nearest whole number

This graph outlines the lifetime federal tax gains associated with preventing 1%, 5%, and 10% of students from dropping out of high school, broken down by educational attainment. The data reveals exponential increases in federal tax revenue as the percentage of students saved and their educational attainment levels rise. For example, saving 1% of students results in \$11 million in lifetime federal tax gains for high school graduates, increasing to \$101 million for postgraduate degree holders. Similarly, a 10% reduction in dropouts yields \$108 million for high school graduates and exceeds \$531 million for bachelor's degree holders. This demonstrates the long-term economic benefits of preventing dropouts and supporting advanced education.

Table 6 illustrates the importance of being in school and achieving higher levels of education for individuals, as well as for the state and federal government. Here is a summary of how of this importance.

### *Annual State Tax Gains*

1. **1% Reduction (213 Students):** At the lowest level of intervention, annual state tax gains are relatively modest, ranging from \$121,623 for high school graduates to \$923,355 for postgraduates. However, even a tiny intervention yields significant returns, especially as educational attainment increases.
2. **5% Reduction (1,066 Students):** A more significant reduction in dropout rates results in notable gains, with annual tax revenue increasing from \$608,686 for high school graduates to \$4.6 million for postgraduate degree holders. This indicates an exponential return growth as more students remain in the education pipeline.
3. **10% Reduction (2,133 Students):** The most significant intervention produces the most dramatic results, with state tax gains spanning \$1.2 million for high school graduates to \$5.05 million for bachelor's degree holders. This highlights the economic value of comprehensive programs to prevent dropouts and support higher educational attainment.

### *Lifetime State Tax Gains*

1. **1% Reduction (213 Students):** Preventing 1% of students from dropping out generates lifetime tax gains ranging from \$5 million for high school graduates to \$31 million for postgraduate degree holders. This demonstrates that even modest interventions have meaningful long-term economic impacts.
2. **5% Reduction (1,066 Students):** At a 5% dropout reduction, lifetime state tax gains grow substantially, from \$27 million for high school graduates to \$96 million for bachelor's degree holders. This reflects the cumulative value of larger-scale dropout prevention efforts.
3. **10% Reduction (2,133 Students):** The most significant impact is when 10% of dropouts are saved, with lifetime tax gains increasing from \$55 million for high school graduates to \$192 million for bachelor's degree holders. These figures highlight the compounding effect of long-term educational and fiscal policies.

### *Annual Federal Tax Gains*

1. **1% Reduction (213 Students):** Preventing 1% of dropouts results in annual federal tax gains ranging from \$253,896 for high school graduates to \$3,082,536 for postgraduates. This highlights the relatively larger contribution of higher education levels to federal tax revenue.
2. **5% Reduction (1,066 Students):** At a 5% dropout reduction, annual tax gains grow substantially, from \$1,270,672 for high school graduates to \$15,427,152 for postgraduates. This scaling effect demonstrates how broad dropout prevention initiatives can yield significant federal fiscal benefits.
3. **10% Reduction (2,133 Students):** Preventing 10% of dropouts generates the highest returns, with annual federal tax gains ranging from \$2,542,536 for high school graduates to \$30,868,776 for postgraduates. This reinforces the compounded economic impact of saving a larger portion of students from dropping out and advancing their education.

*Lifetime Federal Tax Gains*

- 1. 1% Reduction (213 Students): Preventing 1% of dropouts generates lifetime federal tax gains ranging from \$10.8 million for high school graduates to \$101.3 million for postgraduates. Even at this modest level, the fiscal benefits are substantial, especially as educational attainment increases.
- 2. 5% Reduction (1,066 Students): A 5% reduction significantly boosts lifetime federal tax revenue, ranging from \$54.2 million for high school graduates to \$507.2 million for postgraduates. This shows the impact of larger-scale dropout interventions, particularly when paired with educational attainment.
- 3. 10% Reduction (2,133 Students): Preventing 10% of dropouts yields the most dramatic gains, with lifetime tax contributions increasing from \$108.4 million for high school graduates to over \$0.5 billion for bachelor’s degree holders. This highlights the transformative economic impact of large-scale educational reforms.

*Crime by Educational Attainment*

We used the per capita crime expenditure data from Georgia for 2017 (Buehler, 2021) and adjusted it to reflect the dollar value as of July 2023. By multiplying the adjusted per capita expenditure by the population of Georgia in July 2023, as provided by the United States Census Bureau, we calculated a total expenditure on crime of \$8.3 billion.

Next, we allocated this total expenditure between the federal and state governments, dividing it based on our calculations, which indicate a distribution of 19% for the federal government and 81% for the state government (Buehler, 2021). This means the state government accounts for \$6.73 billion, while the federal government contributes \$1.58 billion.

We used the Georgia Crime Information Center (2023) report to determine the average crime expenditure. We divided the total expenditure by the number of reported index crimes (Part 1 Crimes) in Georgia during 2023, resulting in an average expenditure of 37705. Further analysis showed that the state shares 30541 of this expenditure, while the federal government contributes \$7,164 for crime control. We calculate the state and federal governments' expenditures separately on each potential criminal based on the Prison inmates survey in 2016 and released by the United States Bureau of Justice Statistics (2024). According to this survey, the educational attainment of inmates above 18 years of age nationally and in Georgia is shown in Table 7.

Table 7: Inmates by Educational Attainment

Education	Percentage
High School Dropout	61
High School Graduates	20
Some College	13
At least 4-year College Degree	6

Source: Prison Inmates Survey 2016 United States Bureau of Justice Statistics, 2024

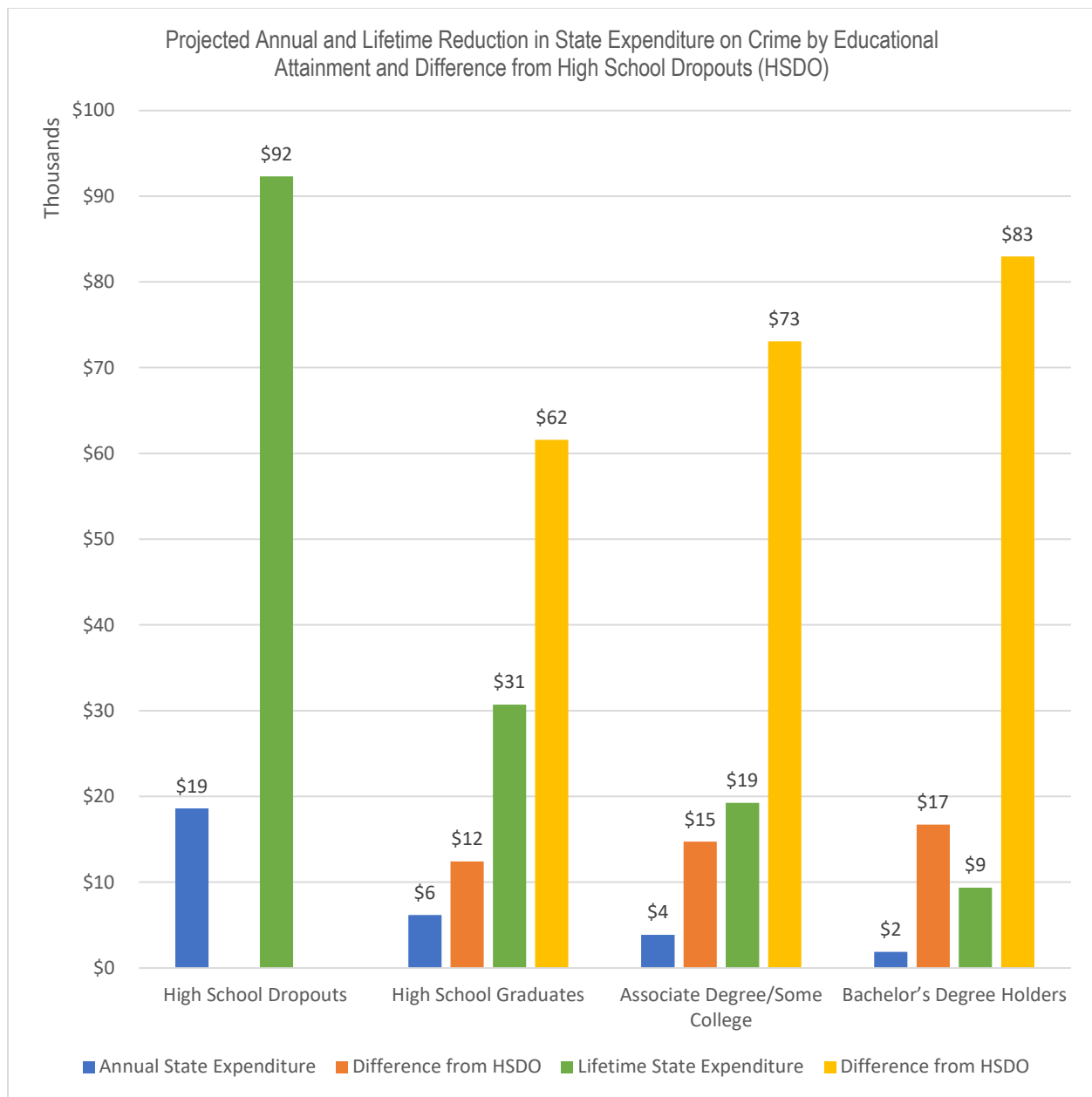
Utilizing the table on education attainment for the 2022 cohort, we estimate the number of individuals likely to engage in criminal behavior and multiply this figure by the average expenditures to determine the total spending associated with projected crime. To obtain an individual estimate,

we divide this total by the number of individuals within each educational attainment category. According to Kaebler (2021), the average time served by state prisoners released in 2018—from their initial admission to their first release—was 2.7 years, while the average duration spent in the legal system is 0.615 years (Ostrom et al., 2016). Therefore, when considering both components, an individual involved in criminal activity spends an average of 3.31 years in the criminal justice system per offense—calculated by adding 0.615 years in the legal system to 2.7 years in prison. We then multiply state and federal government expenditures, adjusted for educational attainment, by 3.31 to estimate the lifetime costs incurred by state and federal systems due to crime based on the assumption that at least half of these individuals will recidivate.

**Table: State and Federal Crime Expenditures by Educational Level**

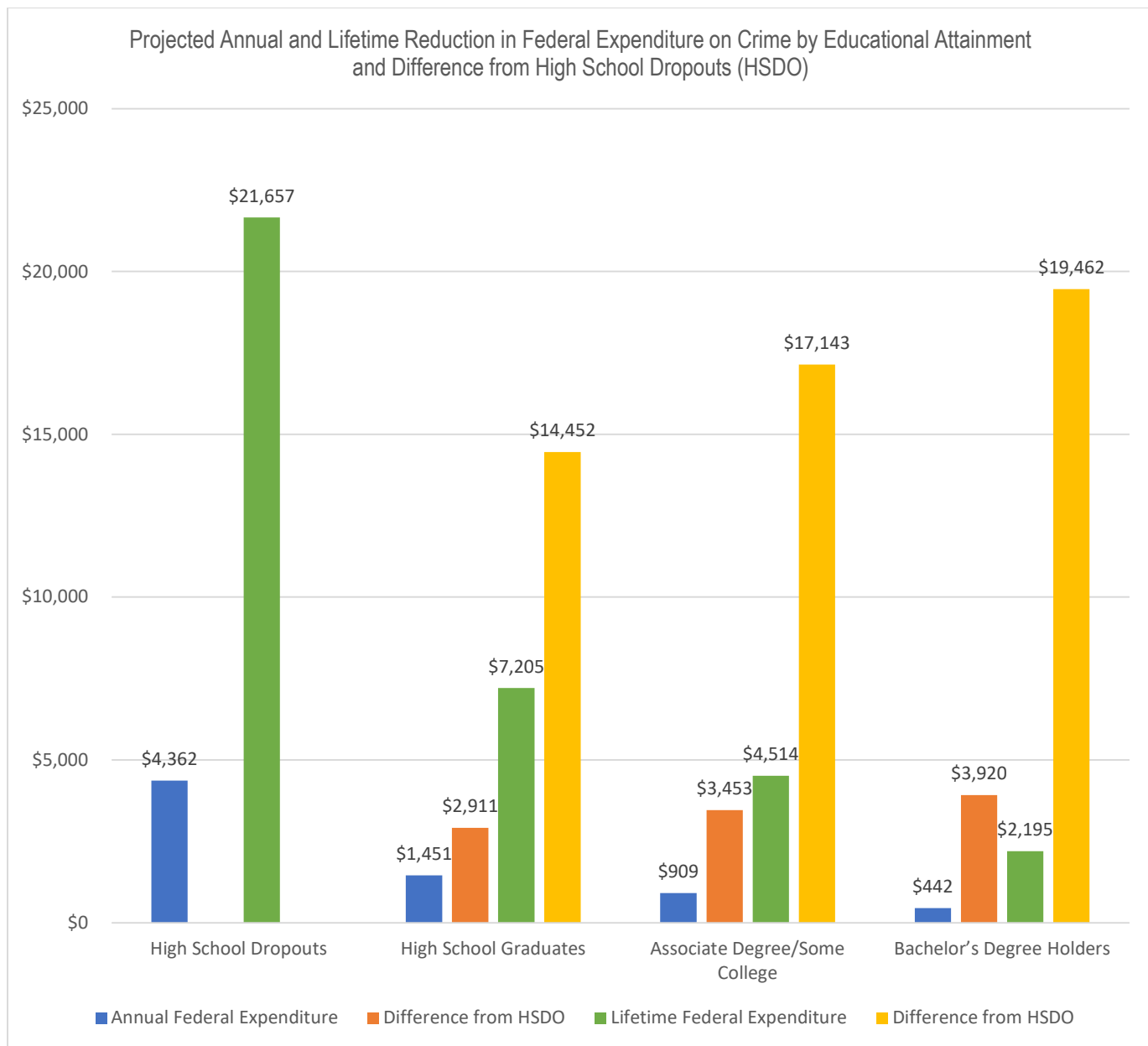
Crime Expenditure	High School Dropouts	High School Graduates	Associate Degree/Some College	Bachelor's Degree Holders
Annual State Expenditure	\$18,594	\$6,188	\$3,876	\$1,884
Difference	-	\$12,406	\$14,718	\$16,710
Lifetime State Expenditure	\$92,319	\$30,723	\$19,245	\$9,354
Difference	-	\$61,596	\$73,074	\$82,965
Annual Federal Expenditure	\$4,362	\$1,451	\$909	\$442
Difference	-	\$2,911	\$3,453	\$3,920
Lifetime Federal Expenditure	\$21,657	\$7,205	\$4,514	\$2,195
Difference	-	\$14,452	\$17,143	\$19,462

This table underscores the significant decrease in crime-related expenditures at both state and federal levels linked to higher educational attainment. High school dropouts represent the highest crime-related costs, averaging \$18,594 annually in state expenditures and a lifetime cost of \$92,319 per individual. These costs diminish considerably as individuals achieve greater levels of education: - Transitioning from dropouts to high school graduates' results in an annual reduction of \$15,317 in total crime costs (\$12,406 at the state level and \$2,911 federally), equating to a lifetime savings of \$76,048. Attaining a bachelor's degree yields the most substantial savings, with a reduction of \$20,630 annually in total crime costs (\$16,710 state and \$3,920 federal) and a lifetime reduction of \$102,427.



The bar graph shows how crime-related state expenditures vary based on education levels, highlighting both annual and lifetime costs. High school dropouts have the highest costs, with the state spending \$18,594 annually and \$92,319 over a lifetime for this group. High school graduates show a significant reduction, with annual costs dropping to \$6,188 and lifetime costs at \$30,723, saving \$12,406 annually and \$61,596 over a lifetime compared to dropouts. For those with some college or an associate degree, the costs decrease further to \$3,876 annually and \$19,245 over a lifetime, representing even greater savings of \$14,718 annually and \$73,074 over a lifetime. Bachelor's degree holders have the lowest costs by far, with the state spending just \$1,884 annually and \$9,354 over a lifetime, saving \$16,710 annually and \$82,965 over a lifetime compared to dropouts. The bar graph clearly shows that as education levels increase, the state's crime-related expenditures decrease dramatically, emphasizing the financial benefits of higher education for society.





The bar graph compares federal annual and lifetime crime-related expenditures for individuals based on their educational attainment. The data highlights a clear trend: federal crime-related costs decrease significantly as education levels increase.

High school dropouts (HSDO) have the highest expenditures, costing the federal government \$4,362 annually and \$21,657 over a lifetime. High school graduates show a considerable reduction, with annual costs dropping to \$1,451 and lifetime costs at \$7,205. This represents savings of \$2,911 annually and \$14,452 over a lifetime compared to dropouts.

For individuals with an associate degree or some college education, the expenditures decline to \$909 annually and \$4,514 over a lifetime, saving \$3,453 annually and \$17,143 over a lifetime compared to dropouts. Bachelor's degree holders have the lowest costs, with federal crime-

related expenditures at just \$442 annually and \$2,195 over a lifetime. This marks a savings of \$3,920 annually and \$19,462 over a lifetime compared to dropouts.

The graph illustrates the strong relationship between higher educational attainment and reduced federal spending on crime, emphasizing the economic benefits of education for individuals and government resources.

### *Analysis of Saving 1%, 5%, and 10% High School Dropouts with Potential Deviance Behavior on State and Federal Crime Expenditure*

**Table: State Gains in Georgia for Saving 1%, 5%, and 10% High School Dropouts from Crime**

Level of Measurement	Education Level	1% Saved	5% Saved	10% Saved
Annual Expenditure Savings	High School Graduates	\$1,612,780	\$8,051,494	\$16,102,988
	Associate Degree	\$1,913,340	\$9,551,982	\$19,103,964
	Bachelor's Degree	\$2,172,300	\$10,842,795	\$21,689,580
Lifetime Expenditure Savings	High School Graduates	\$8,007,480	\$39,975,804	\$79,951,608
	Associate Degree	\$9,499,620	\$47,425,026	\$94,850,052
	Bachelor's Degree	\$10,785,450	\$53,844,285	\$107,688,570

1% = 130 Students, 5% = 649 Students, 10% = 1,298 Students

The table presents state expenditure savings for the annual and lifetime costs associated with reducing the number of high school dropouts by 1%, 5%, and 10%, assuming these students are moved to higher educational levels: high school graduates, associate degree holders, or bachelor's degree holders.

Savings are calculated based on the differences in crime-related state expenditures between high school dropouts and students at higher educational levels. The table shows how educational attainment affects short-term (annual) and long-term (lifetime) state savings.

#### 1. Short-Term Impact (Annual Savings):

Savings increase significantly as more dropouts are saved:

- Moving 1% of dropouts to higher educational levels would save the state between \$1.61M (high school graduates) and \$2.17m (bachelor's degree holders) annually.
- Moving 10% of dropouts results in annual savings of \$16.10 million (high school graduates) to \$21.69M (bachelor's degree holders).
- Educational attainment matters: The higher the level of education, the larger the annual savings. For example, the state saves \$ 5.58 million more annually if 10% of dropouts achieve a bachelor's degree (\$ 21.69 million) compared to only high school graduation (\$ 16.10 million).

#### 2. Long-Term Impact (Lifetime Savings):

The lifetime savings are 5x larger than annual savings, reflecting the cumulative benefits of reduced crime costs over time.

- For 1% of dropouts saved, lifetime savings range from \$ 8.01 million (high school graduates) to \$10.79 million (bachelor's degree holders).
- For 10% of dropouts saved, lifetime savings range from \$79.95 million (high school graduates) to \$ 107.69 million (bachelor's degree holders).

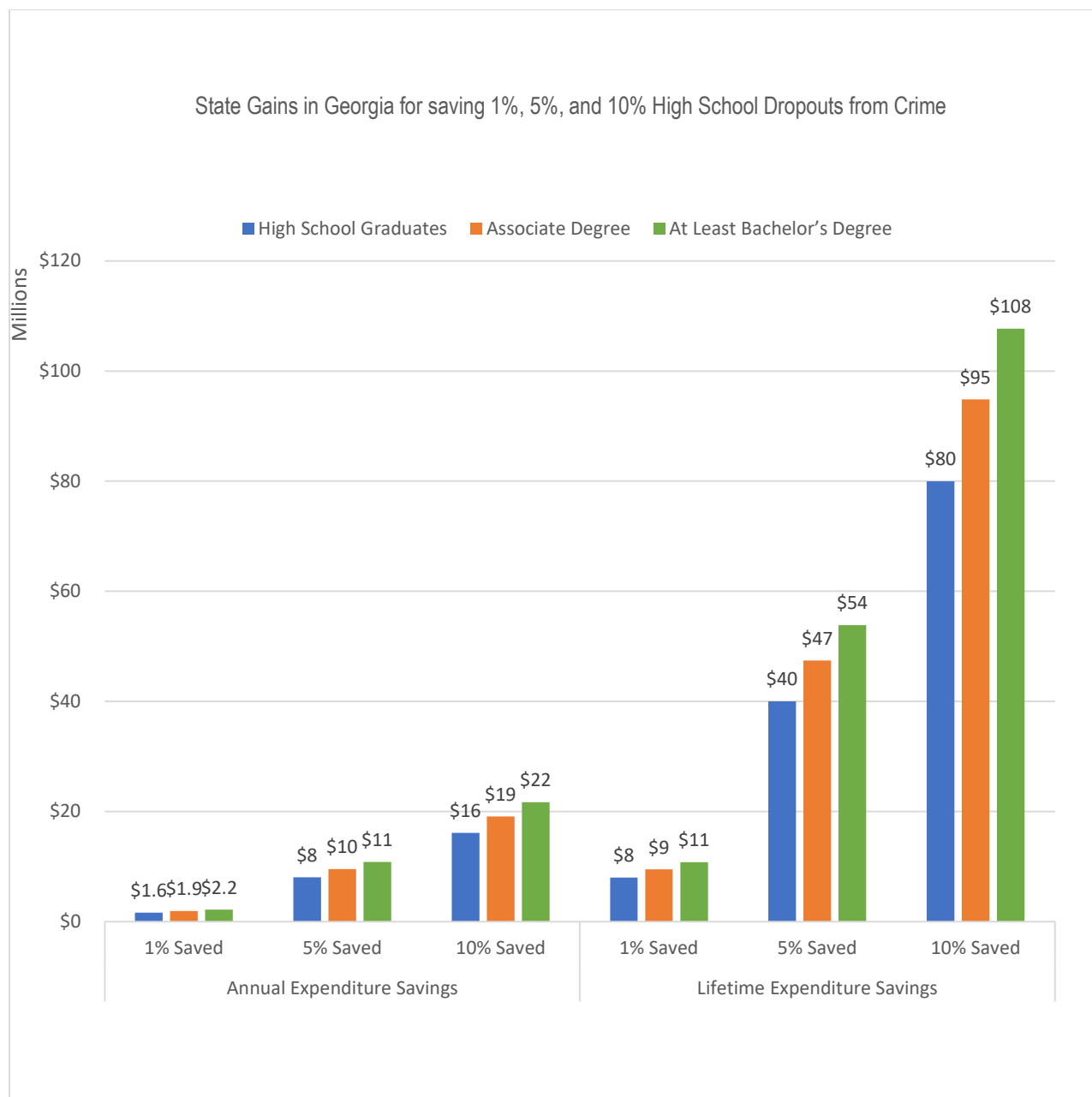
Higher education amplifies long-term benefits: Moving dropouts to a bachelor's degree leads to \$ 27.74 million more lifetime savings (for 10%) compared to high school graduation.

### 3. Efficiency of Investment:

- Saving 1% of dropouts results in measurable savings, but the impact multiplies significantly with higher percentages:
- Moving 10% of dropouts to high school graduates leads to 5x the savings compared to 1%.
- Moving 10% of dropouts to bachelor's degrees generates more than \$100 million in lifetime savings.

### 4. Policy Implications:

- The long-term economic impact of higher education is profound: Investing in programs that help dropouts attain higher education levels (e.g., high school diplomas, associate degrees, or bachelor's degrees) could save millions annually and billions over several decades.
- Targeting higher education levels provides exponential savings: Policies that move dropouts toward bachelor's degrees yield the highest returns for the state.



**Table: Federal Gains in Georgia for Saving 1%, 5%, and 10% High School Dropouts from Crime**

Level of Measurement	Education Level	1% Saved	5% Saved	10% Saved
Annual Expenditure Savings	High School Graduates	\$378,430	\$1,889,239	\$3,778,478
	Associate Degree	\$448,890	\$2,240,997	\$4,481,994
	Bachelor's Degree	\$509,600	\$2,544,080	\$5,088,160
Lifetime Expenditure Savings	High School Graduates	\$1,878,760	\$9,379,348	\$18,758,696
	Associate Degree	\$2,228,590	\$11,125,807	\$22,251,614
	Bachelor's Degree	\$2,530,060	\$12,630,838	\$25,261,676

1% = 130 Students, 5% = 649 Students, 10% = 1,298 Students

This table analyzes savings in state expenditures based on reducing the number of high school dropouts and increasing their educational attainment. The savings are categorized into two types:

1. Annual Expenditure Savings: These represent the short-term savings achieved every year for every 1%, 5%, and 10% of dropouts saved by moving them to higher levels of education (e.g., high school graduates, associate degrees, bachelor's degrees).
2. Lifetime Expenditure Savings: These represent the long-term, cumulative savings over the lifetime of the individuals who were moved to higher education levels.

## *Inferences*

### 1. Higher Educational Attainment Significantly Increases Savings

- Moving dropouts to higher levels of education leads to more significant savings in annual and lifetime expenditures.
  - For 10% saved, annual savings increase from \$3.78M (High School Graduates) to \$5.09M (Bachelor's Degree).
  - Similarly, lifetime savings increase from \$18.76M (High School Graduates) to \$25.26M (Bachelor's Degree).
- This shows that Bachelor's Degrees generate \$1.31M more annually and \$6.5M over a lifetime compared to High School Graduates.

### 2. Scaling Up Dropout Reduction Leads to Proportional Increases in Savings

- Savings grow proportionally as the percentage of dropouts saved increases.
- For High School Graduates, annual savings increase from \$378K (1%) to \$3.78M (10%) (a 10x increase).
- For Bachelor's Degrees, lifetime savings grow from \$2.53M (1%) to \$25.26M (10%), showing the scaling effect of larger dropout reductions.

### 3. Lifetime Savings Far Exceed Annual Savings

- Lifetime savings are approximately 5x larger than annual savings, emphasizing the long-term benefits of dropout reduction programs.
- For 10% saved as High School Graduates:
  - Annual savings = \$3.78M, but lifetime savings = \$18.76M.
- For 10% saved as Bachelor's Degree holders:
  - Annual savings = \$5.09M, but lifetime savings = \$25.26M.

### 4. Incremental Gains by Education Level

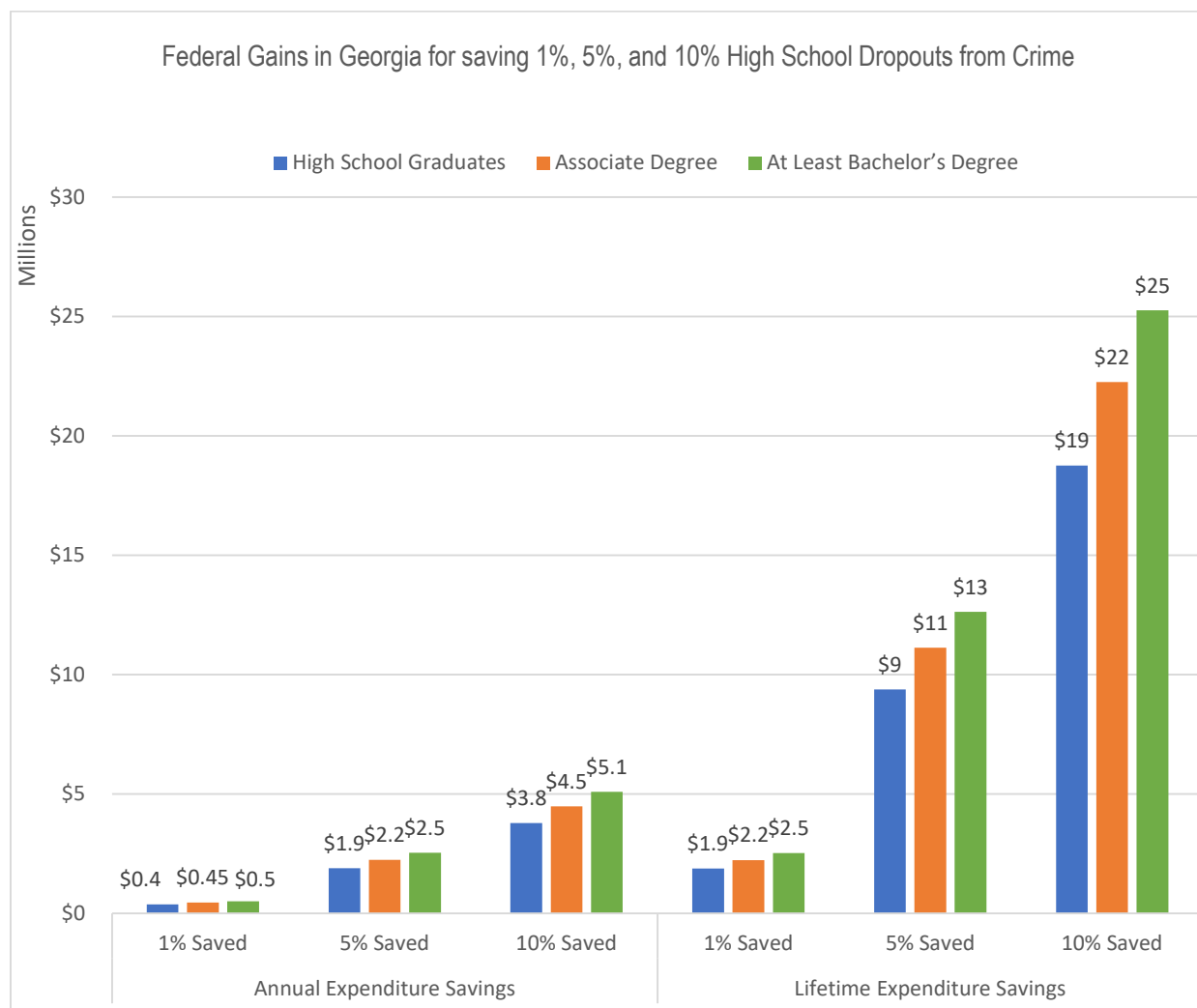
- Moving dropouts from High School Graduates to higher levels of education results in incremental financial gains:
  - Annual savings range from \$70 thousand to \$131 thousand per 1% saved as we move from High School Graduates to Associate Degrees or Bachelor's Degrees.
  - Lifetime savings range from \$350 thousand to \$650 thousand per 1% saved.

## 5. Bachelor's Degree Maximizes Savings

- Across all scenarios (1%, 5%, and 10% saved), Bachelor's Degree holders generate the highest savings:
  - For 10% saved, annual savings = \$5.09M and lifetime savings = \$25.26M.
  - Bachelor's Degrees result in the most significant economic benefits, making it the most impactful educational attainment to target for dropout reduction programs.

## 6. Long-Term Planning is Key

- While annual savings provide short-term fiscal benefits, lifetime savings highlight the importance of long-term investments in education
- Lifetime savings are significantly larger and compound over time, making dropout reduction a sustainable economic strategy.



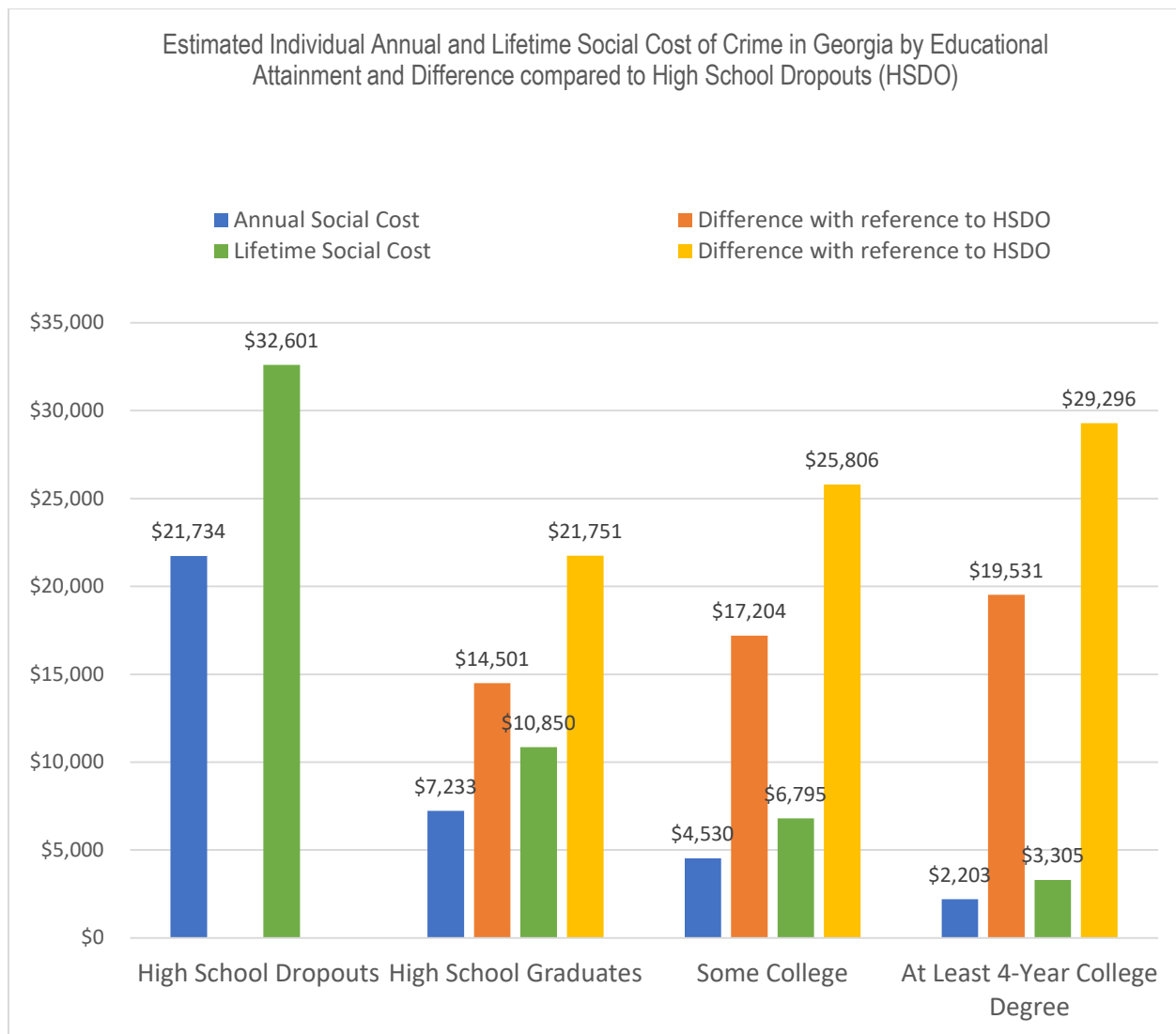
## Social Cost of Crime

The social cost of crime includes both tangible losses, like property damage, and intangible burdens, such as the pain and suffering inflicted on individuals and society due to criminal behavior. According to Miller et al. (2021), crime-related costs in the United States reached \$2.6 trillion in 2017, with \$620 billion attributed to direct monetary expenses, including medical treatment, property loss, and legal system costs, while \$1.95 trillion represented intangible costs such as pain, suffering, and a diminished quality of life. Violent crimes accounted for 85% of these costs, with murder incurring the highest per-incident social cost at \$7.8 million, influenced by the present value of a person's entire life and the significant impact on the quality of life for victims, including mental health issues.

We utilized Miller et al. (2021) calculations regarding the cost of crime in the United States and analyzed the Georgia Crime Information Center (2023) report to determine the social cost of crime in Georgia, focusing on reported index crimes, including cases of family violence involving children. Our findings indicate that the social cost of crime in Georgia amounts to \$9.2 billion, with a weighted average cost per crime of 35699. We applied this information to estimate the annual social cost of crime for potential offenses within our cohort, categorized by educational attainment, as well as to assess federal and state expenditures related to crime. Utilizing an average recidivism rate of 1.5, we calculated the lifetime social cost of crime. The following table presents the social cost of crime in Georgia by educational attainment.

**Table: Social Costs of Crime by Educational Attainment**

Social Cost of Crime	High School Dropouts	High School Graduates	Some College	At Least 4-Year College Degree
Annual Social Cost	\$21,734	\$7,233	\$4,530	\$2,203
Difference in Annual Social Cost (vs. Dropouts)	-	-\$14,501	-\$17,204	-\$19,531
Lifetime Social Cost	\$32,601	\$10,850	\$6,795	\$3,305
Difference in Lifetime Social Cost (vs. Dropouts)	-	-\$21,751	-\$25,806	-\$29,296



#### Annual Savings:

- Transitioning from dropouts to high school graduates reduces annual social costs by \$14,501 per person.
- Moving to 4-year degree holders provides the largest savings of \$19,531 annually.

#### Lifetime Savings:

- Dropouts incur \$32,601 per person in lifetime social costs, while 4-year degree holders incur just \$3,305.
- Transitioning from dropouts to high school graduates saves \$21,751 per person over a lifetime, while transitioning to 4-year degree holders saves \$29,296.



## *Economic Impact of Saving 1%, 5%, and 10% High School Dropouts with Potential Deviant Behavior on Social Cost of Crime in Georgia*

**Table: Individual Annual and Lifetime Gains in Social Cost of Crime for Georgia by Saving 1%, 5%, and 10% High School Dropouts from Crime**

Education Level	% Criminals Saved	Annual State Gain	Lifetime State Gain
High School Graduates	1% (130)	\$1,885,130	\$2,827,630
	5% (649)	\$9,413,149	\$14,101,199
	10% (1,298)	\$18,828,897	\$28,234,798
Some College	1% (130)	\$2,236,520	\$3,354,780
	5% (649)	\$11,167,996	\$16,734,094
	10% (1,298)	\$22,338,592	\$33,500,388
At Least 4-Year College Degree	1% (130)	\$2,539,030	\$3,808,480
	5% (649)	\$12,678,119	\$18,995,704
	10% (1,298)	\$25,355,938	\$38,023,208

The table analyzes state gains from annual and lifetime social crime costs when saving 1%, 5%, or 10% of potential criminals among high school dropouts and transitioning them to higher education levels (high school graduates, some college, or bachelor's degree). The savings are calculated based on reduced crime rates and lower associated social costs at these higher education levels. This analysis highlights the financial and social benefits of educational interventions targeting high school dropouts. Even modest improvements in educational attainment can yield substantial state savings by decreasing crime-related expenditures. Policies that prioritize preventing dropouts and promoting higher education can have a transformative impact on both individual lives and public budgets.

### 1. Gains Increase with Higher Education Levels

- Moving potential criminals to higher levels of education yields more considerable state gains due to lower crime rates and reduced individual social costs.
- For 1% of criminals saved (130 individuals):
  - Annual state gain increases from \$1.88M (graduates) to \$2.54M (bachelor's degree).
  - Lifetime state gain increases from \$2.83M (graduates) to \$3.81M (bachelor's degree).
- For 10% of criminals saved (1,298 individuals):
  - Annual state gain increases from \$18.83M (graduates) to \$25.36M (bachelor's degree).
  - Lifetime state gain increases from \$28.23M (graduates) to \$38.02M (bachelor's degree).

### 2. Larger Proportions Saved = Larger Gains

- The state gains grow proportionally with the percentage of criminals saved. For instance:
- Saving 5% of criminals results in 5 times the gains of saving 1%.
- Saving 10% of criminals results in 10 times the gains of saving 1%.

### 3. Significant Difference Between Education Levels

- Transitioning criminals from high school dropouts to high school graduates generates substantial gains. For example:
  - At 10% saved, the state gains \$28.23M (lifetime).
- Further moving a person with a likely criminal behavior to a bachelor's degree holder generates even higher savings:
  - At 10% saved, the lifetime gain rises to \$38.02 million a difference of nearly \$10 million compared to high school graduates.

### 4. Policy Impact

- Small interventions (e.g., saving just 1% of dropouts) can result in millions of dollars in savings for the state:
- Saving 1% (130 individuals) and transitioning them to bachelor's degrees saves the state \$3.8M in lifetime costs.

### *Inferences: Social Cost of Crime*

Here is what can be inferred about the social cost of crime in Georgia and educational attainment.

#### 1. Education is a Cost-Effective Crime Prevention Tool

- The data strongly supports the preventive impact of education on crime.
- The gains from saving even small percentages of high school dropouts demonstrate the economic efficiency of investing in education programs, particularly for at-risk populations.

#### 2. Prioritizing Higher Education Increases Savings

- The marginal benefit of moving individuals to higher education levels grows as crime rates and costs decrease significantly:
- High school graduates reduce annual crime costs by about 66.7% compared to dropouts.
- Bachelor's degree holders reduce annual crime costs by nearly 90% compared to dropouts.

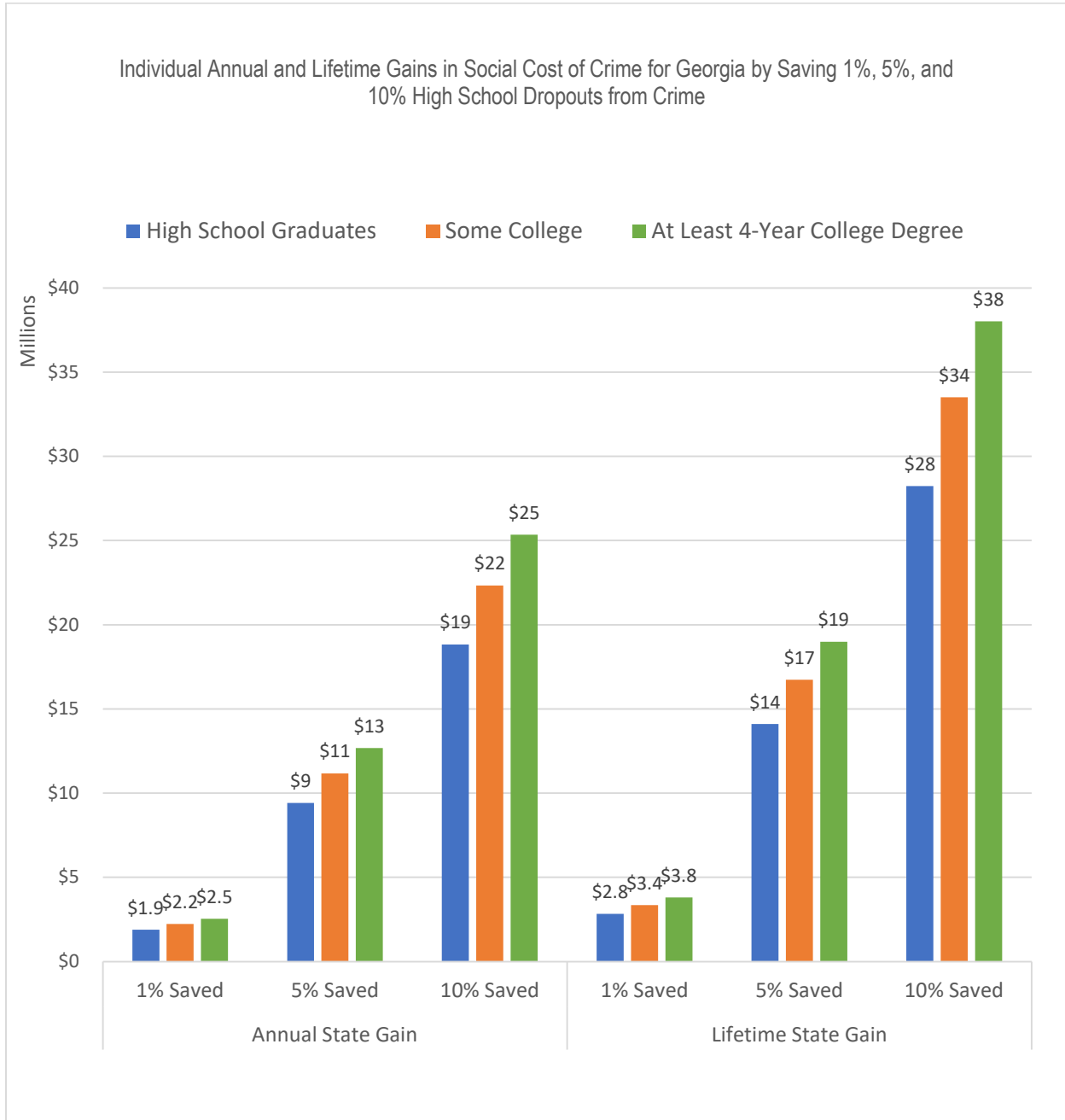
#### 3. Scaling Up Has a Major Societal Impact

- If 10% of dropouts transitioned to high school graduates, the state would save \$28.23M in lifetime costs.
- If scaled to some college or bachelor's degrees, savings grow to \$33.50M and \$38.02M, respectively.

#### 4. Policy Implications:

These findings emphasize the importance of programs that:

- Reduce dropout rates
- Encourage post-secondary education, particularly for at-risk populations.
- Beyond direct cost savings, reduced crime rates contribute to improved community well-being: Safer neighborhoods, higher workforce participation, and greater economic productivity.



This graph highlights the impact of educational attainment on annual and lifetime state gains in reducing the social costs of crime. The data is presented across three education levels—High School Graduates, Some College, and At Least a 4-Year College Degree—and demonstrates the state savings achieved by saving 1%, 5%, and 10% of at-risk individuals. For annual state gains, saving 1% of at-risk individuals yields \$1.89 million for High School Graduates, \$2.24 million for Some College, and \$2.54 million for individuals with a 4-Year College Degree. At the 5% saved level, these figures grow to \$9.41 million, \$11.17 million, and \$12.67 million, respectively, while at the 10% saved level, they rise significantly to \$18.83 million for High School Graduates, \$22.33 million for Some College, and \$25.35 million for individuals with a 4-Year College Degree. The consistent increase in annual savings with higher education levels and larger percentages saved highlights the strong economic benefits of educational attainment.

Similarly, lifetime state gains follow a comparable trend. At the 1% saved level, lifetime gains amount to \$2.83 million for High School Graduates, \$3.35 million for Some College, and \$3.81 million for individuals with a 4-Year College Degree. At the 5% saved level, lifetime gains reach \$14.10 million for High School Graduates, \$16.73 million for Some College, and \$18.99 million for individuals with a 4-Year College Degree. These gains increase substantially when saving 10% of at-risk individuals, reaching \$28.23 million, \$33.50 million, and \$38.02 million, respectively. The graph clearly demonstrates that higher education levels consistently result in greater state savings, both annually and over a lifetime, with individuals holding a 4-Year College Degree contributing the highest economic benefit at every percentage saved. These findings underscore the critical role of education in reducing crime-related expenditures and improving economic outcomes.

*Health Expenditure by Educational Attainment*

The primary public spending on health is Medicaid health insurance. We calculated Medicaid spending by education level using the Current Population Survey 2024, as shown in Table 8. According to the Georgia Department of Community Health (2023), the average Medicaid spending per member in Georgia is \$4,924. We used these statistics to determine the annual and lifetime public expenditure on health, as shown in Table 9.

Table 8: Medicaid by Educational Attainment

Educational Attainment	Row %	Normalized % (Based on Sum of Row %)
(High School Dropouts)	28%	40%
(High School Graduates)	18%	26%
(Some College)	12%	17%
(Bachelor’s Degree)	6%	8%
(Master’s Degree)	4%	5%
(PhD)	3%	4%
Sum	70%	100%

Source: Current Population Survey 2024

Table 9: Annual and Lifetime Health Expenditures by Educational Level

Health Expenditure	High School Dropouts	High School Graduates	Associate degree/Some College	Bachelor's Degree Holders	Graduate Degree Holders	Postgraduate Degree Holders
Annual Health Expenditure	\$1,970	\$1,280	\$837	\$394	\$246	\$197
Difference Compared to HSDOs	\$0	\$690	\$1,133	\$1,576	\$1,724	\$1,773
Lifetime Health Expenditure	\$92,590	\$57,600	\$33,480	\$15,760	\$9,840	\$7,880
Difference Compared to HSDOs	\$0	\$34,990	\$59,110	\$76,830	\$82,750	\$84,710

### 1. Annual Health Expenditure:

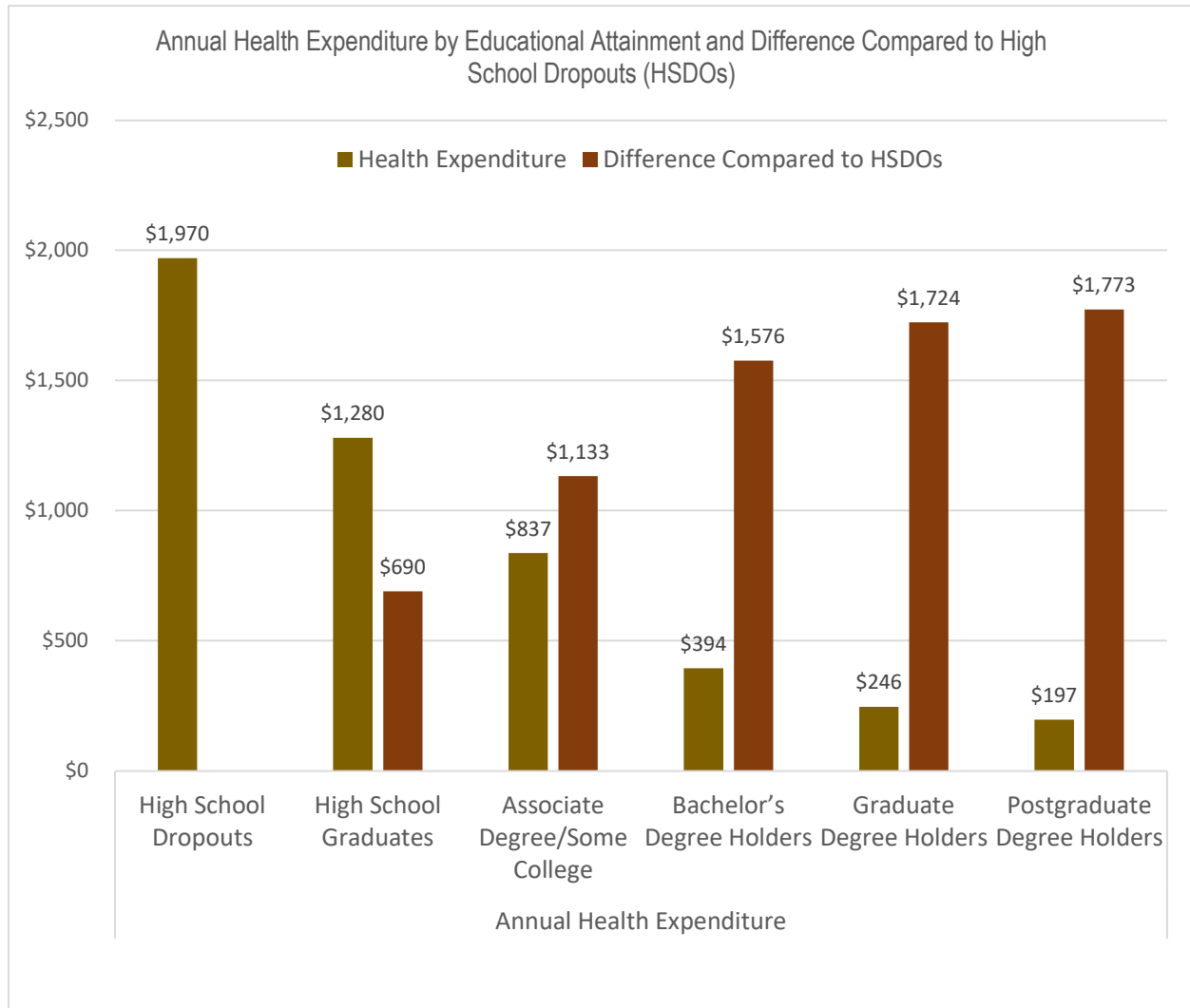
- Annual health expenditure decreases significantly as educational attainment increases.
  - High School Dropouts incur the highest annual expenditure (\$1,970), while Postgraduate Degree Holders incur the lowest (\$197).
  - This indicates that higher education levels are associated with lower annual health costs.
- The difference in annual expenditure compared to High School Dropouts increases with education:
  - High School Graduates spend \$690 less annually.
  - Postgraduate Degree Holders spend \$1,773 less annually, showcasing the most significant reduction.

### 2. Lifetime Health Expenditure:

- Lifetime health expenditure also decreases with higher levels of education:
  - High School Dropouts have the highest lifetime expenditure (\$92,590), while Postgraduate Degree Holders have the lowest (\$7,880).
  - The lifetime savings associated with higher education are significant.
- Differences compared to High School Dropouts highlight the cost-saving impact of education:
  - High School Graduates save \$34,990 in lifetime health costs.
  - Postgraduate Degree Holders save \$84,710, nearly a 90% reduction compared to Dropouts.

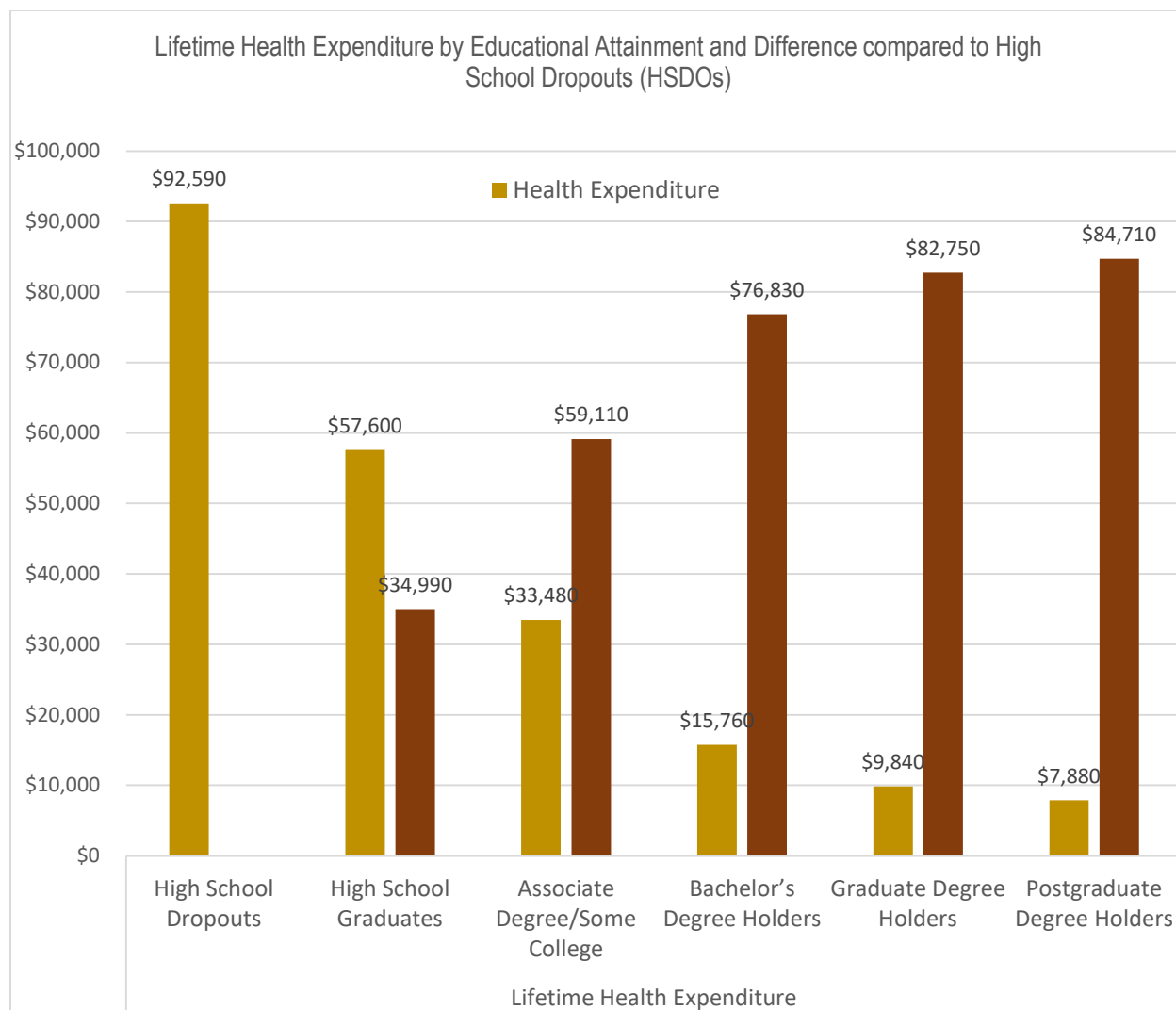
### 3. General Trends and Implications:

- There is a clear inverse relationship between educational attainment and health expenditure (both annual and lifetime).
- These findings underscore the economic benefits of higher education in terms of income and reducing health-related costs.
- Policymakers could use this data to advocate for increasing access to higher education to reduce long-term public health expenditures.



This annual expenditure bar graph illustrates the relationship between educational attainment and annual health expenditure, highlighting the differences in spending compared to High School Dropouts (HSDOs). The first set of bars shows the actual annual health expenditure for each education level, starting at \$1,970 for High School Dropouts and progressively decreasing to \$197 for Postgraduate Degree Holders. The data shows a clear inverse relationship between education and health costs; individuals with higher levels of schooling incur significantly lower annual health expenses. This trend underscores the role of education in improving health outcomes and reducing financial burdens associated with healthcare.

The second set of bars illustrates the differences in health expenditure compared to HSDOs. These disparities increase as education levels rise, with High School Graduates saving \$690 annually compared to HSDOs and Postgraduate Degree Holders saving \$1,773. This visualization highlights that the higher the educational attainment, the more significant the reduction in health-related expenses. It emphasizes the long-term economic benefits of investing in education for individuals and the broader societal savings in healthcare costs.



This lifetime bar graph illustrates the relationship between educational attainment and lifetime health expenditure and the differences in spending compared to High School Dropouts (HSDOs). The first group of bars shows the total lifetime health expenditure across education levels, starting at \$93,000 for High School Dropouts and decreasing to just \$8,000 for Postgraduate Degree Holders. The graph reveals a strong inverse relationship between education and lifetime healthcare costs; individuals with higher levels of education consistently incur lower lifetime health expenses. This trend emphasizes the long-term financial advantages of higher education in reducing personal health-related expenditures.

The second set of bars visualizes the savings in lifetime health expenditure compared to HSDOs. These savings increase significantly with education: High School Graduates save \$35,000 over their lifetime, while Postgraduate Degree Holders realize the highest savings at \$85,000. The growing magnitude of savings across education levels highlights the economic advantages of investing in education for individuals and society, as lower healthcare costs can ease the burden on public health systems. This graph conveys the significant and cumulative financial benefits of enhancing educational attainment.

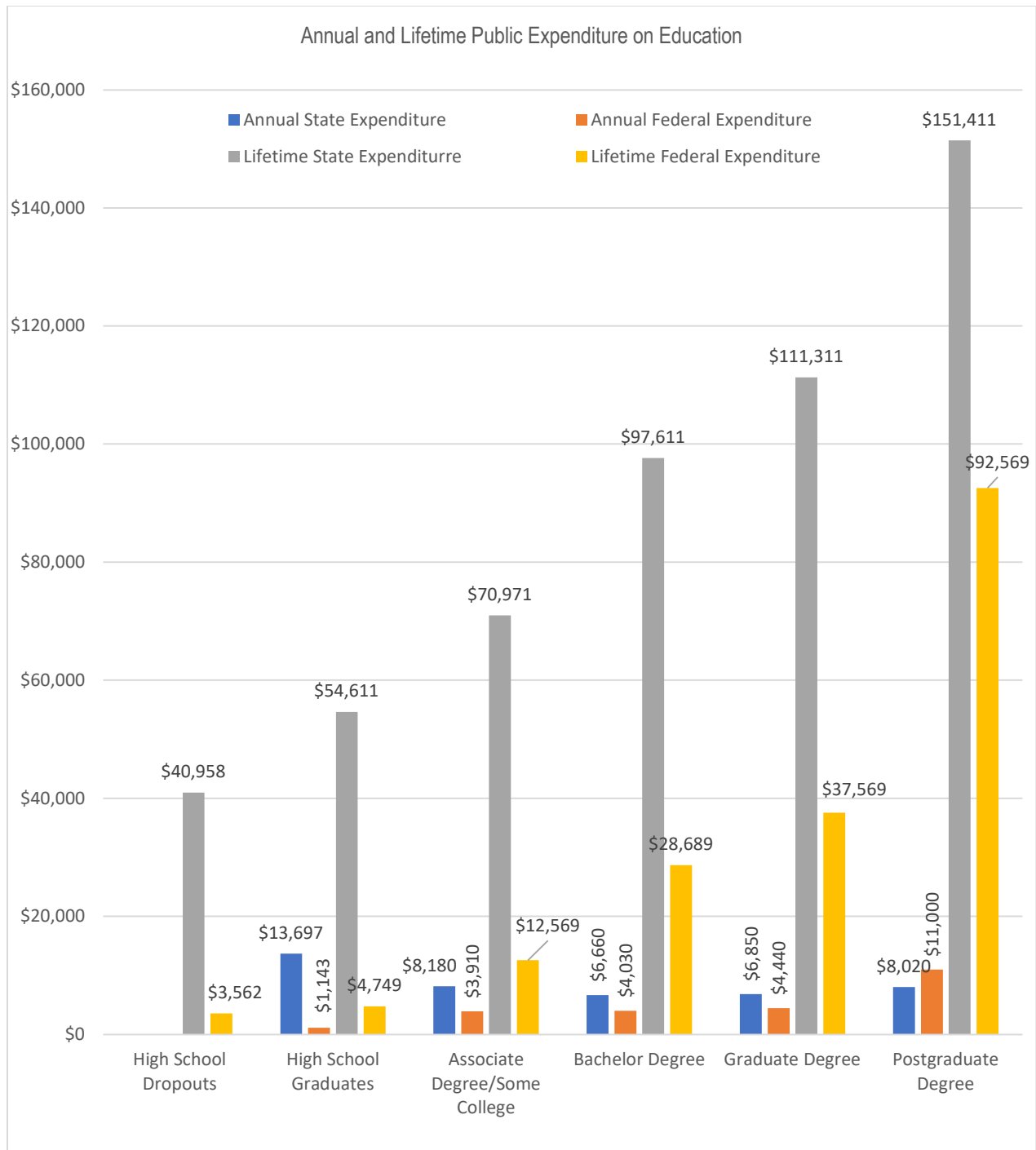
## Expenditure on Education

The World Population Review (2024) indicates that the average spending per pupil in the United States is 14840. The federal government contributes 7.7% of this amount, while state governments account for 92.3%. Ma & Pender (2023) calculated the institutional revenues per full-time equivalent (FTE) student for the 2020-2021 academic year, allowing us to analyze the distribution of state and federal expenditures on public higher education across various degree levels: Associate, Bachelor's, Master's, and Doctoral. We assessed both annual and lifetime public expenditures on education, with annual expenditures representing yearly costs further divided into state and federal contributions. In contrast, lifetime educational expenditure reflects the total cost of each degree, including all prior degrees, as students progress through their education. For instance, the lifetime state and federal expenditure for postgraduate degrees encompasses the total investment from high school through the postgraduate level. Typically, a high school diploma requires four years; however, we assumed that students drop out during the 11th grade, resulting in an annual expenditure of zero for high school dropouts, while their lifetime expenditure accounts for the three years of public investment made before their departure.

Annual and Lifetime Expenditure on Education	High School Dropouts	High School Graduates	Associate Degree/Some College	Bachelor Degree	Graduate Degree	Postgraduate Degree
Annual State Expenditure	\$0	\$13,697	\$8,180	\$6,660	\$6,850	\$8,020
Annual Federal Expenditure	\$0	\$1,143	\$3,910	\$4,030	\$4,440	\$11,000
Lifetime State Expenditure	\$40,958	\$54,611	\$70,971	\$97,611	\$111,311	\$151,411
Lifetime Federal Expenditure	\$3,562	\$4,749	\$12,569	\$28,689	\$37,569	\$92,569

\*A High School Graduate Degree is a 4 years Degree





The bar graph illustrates the progression of Annual and Lifetime State and Federal Expenditures on Education across different educational attainment levels, highlighting the cumulative nature of educational costs. Annual state spending starts at \$13,697 for High School Graduates and decreases with higher degrees, reaching \$6,660 for Bachelor's Degrees, before rising to \$8,020 for Postgraduate Degrees. In contrast, federal spending increases steadily with each level, from \$1,143 annually for High School Graduates to \$11,000 for Postgraduate Degrees, reflecting the federal government's more significant role in funding advanced education.

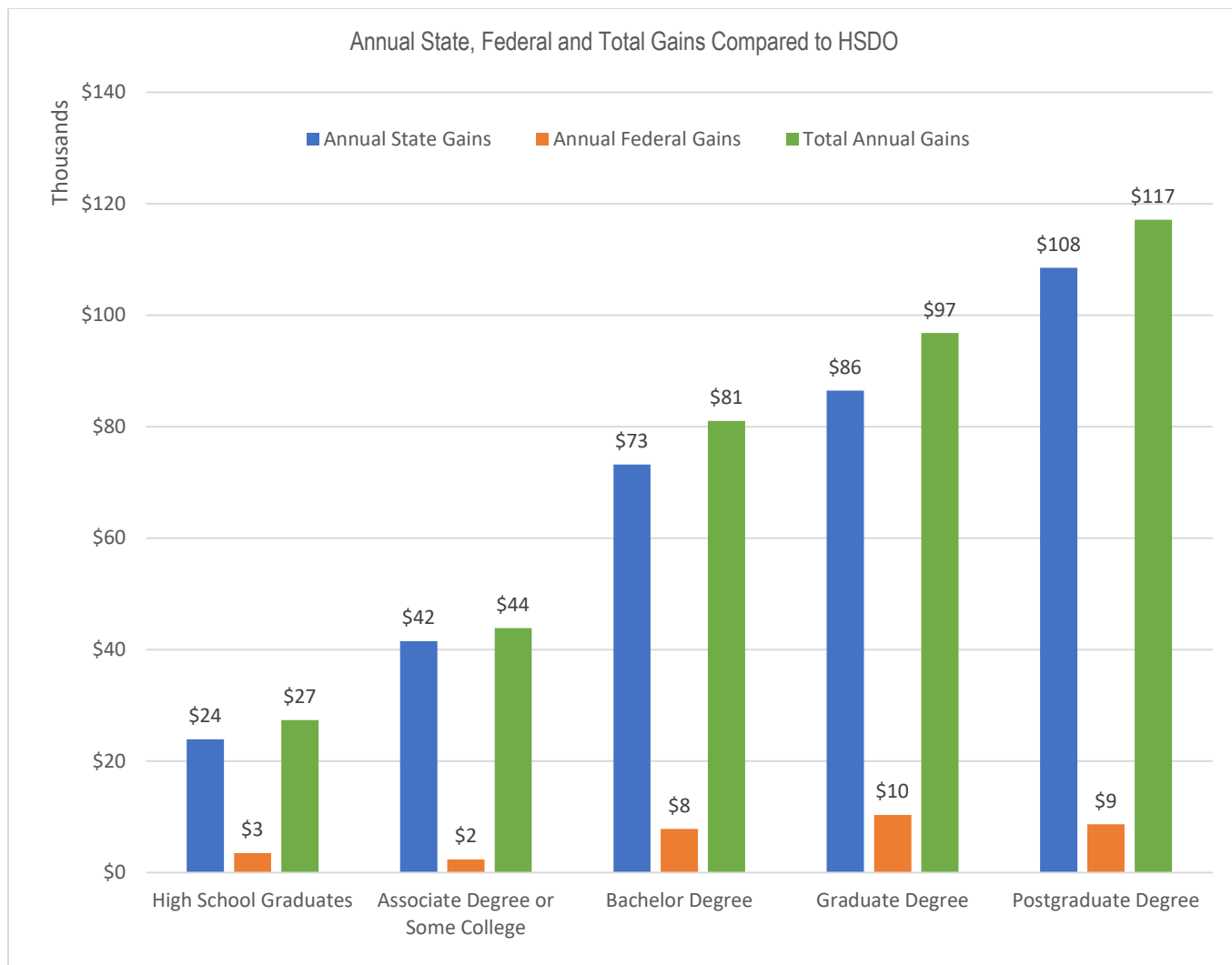
Lifetime expenditures exhibit a significant upward trend due to the cumulative nature of educational costs as individuals pursue higher degrees. For example, lifetime state expenditures start at \$40,958 for high school dropouts and increase to \$151,411 for postgraduate degrees, while federal spending rises from \$3,562 to \$92,569 over the same period. This trend emphasizes the total financial commitment necessary for advanced education and highlights the evolving balance between state and federal contributions at higher levels of educational attainment.

### *Combined Annual and Lifetime Analysis*

We are now analyzing various factors, such as income, taxes, health, crime, and education, to determine the annual and lifetime benefits of education for individuals with higher educational attainment compared to high school dropouts.

Annual Individual Differences Compared to HSDO	High School Dropouts	High School Graduates	Associate Degree/Some College	Bachelor Degree	Graduate Degree	Postgraduate Degree
Income	\$36,816	\$46,748	\$53,300	\$77,636	\$90,324	\$112,216
Difference*	—	9,932	16,484	40,820	53,508	75,400
State Tax	\$1,479	\$2,050	\$2,426	\$3,826	\$4,555	\$5,814
Difference	—	\$571	\$947	\$2,347	\$3,076	\$4,335
Federal Tax	\$2,536	\$3,728	\$4,514	\$9,340	\$12,132	\$17,008
Difference	—	\$1,192	\$1,978	\$6,804	\$9,596	\$14,472
Total Health Expenditure	\$1,970	\$1,280	\$837	\$394	\$246	\$197
State Expenditure	\$571	\$371	\$243	\$114	\$71	\$57
Difference	—	\$200	\$328	\$457	\$500	\$514
Federal Expenditure	\$1,399	\$909	\$594	\$280	\$175	\$140
Difference	—	\$490	\$805	\$1,119	\$1,224	\$1,259
Total Education Expenditure	\$0	\$14,840	\$12,090	\$10,690	\$11,290	\$19,020
State Expenditure	\$0	\$13,697	\$8,180	\$6,660	\$6,850	\$8,020
Federal Expenditure	\$0	\$1,143	\$3,910	\$4,030	\$4,440	\$11,000
State Expenditure on Crime	\$18,594	\$6,188	\$3,876	\$1,884	\$1,884	\$1,884
Difference	—	\$12,406	\$14,718	\$16,710	\$16,710	\$16,710
Federal Expenditure on Crime	\$4,362	\$1,451	\$909	\$442	\$442	\$442
Difference	—	\$2,911	\$3,453	\$3,920	\$3,920	\$3,920
State Social Cost of Crime	\$21,734	\$7,233	\$4,530	\$2,203	\$2,203	\$2,203
Difference	—	\$14,501	\$17,204	\$19,531	\$19,531	\$19,531
Total Annual State Gains Compared to HSDO	—	\$23,913	\$41,501	\$73,205	\$86,475	\$108,470
Total Annual Federal Gains Compared to HSDO	—	\$3,450	\$2,326	\$7,813	\$10,300	\$8,651
Total Annual Gains Compared to HSDO	—	\$27,363	\$43,827	\$81,018	\$96,775	\$117,121

\*Difference is compared to High School Dropouts (HSDO)



The bar graph illustrates the annual gains from higher education for both the state of Georgia and the federal government. As educational attainment rises, state and federal gains consistently increase due to factors such as higher incomes, increased tax revenues, lower social costs associated with crime, and reduced health-related expenditures.

### State Gains

- High School Graduates: \$23,913 more annually.
- Associate Degree/Some College: \$41,501 more annually.
- Bachelor's Degree: \$73,205 more annually.
- Graduate Degree: \$86,475 more annually.
- Postgraduate Degree: \$108,470 more annually, representing the highest state gain.

State gains consistently rise with higher education due to increased tax revenues, lower social costs, and reduced crime-related expenses.

## Federal Gains

- High School Graduates: \$3,450 more annually than High School Dropouts (HSDOs).
- Associate Degree/Some College: \$2,326 more annually, showing a slight decline compared to high school graduates, likely due to increased federal investment in education.
- Bachelor's Degree: \$7,813 more annually.
- Graduate Degree: \$10,300 more annually, representing the highest federal gain.
- Postgraduate Degree: \$8,651 more annually, slightly less than those with graduate degrees. This difference can be attributed to the highest annual investment of 11000 at the postgraduate level compared to \$4,440 at the Master's level. In the long term, the return on this investment surpasses that of all other education levels.
- Combined Gains (State + Federal)
- The combined gains consistently rise, highlighting the accumulating economic and social advantages of higher education for governments.
- High School Graduates: \$27,363 more each year compared to high school dropouts.
- Associate Degree/Some College: \$43,827 more each year.
- Bachelor's Degree: \$81,018 more each year.
- Graduate Degree: \$96,775 more each year.
- Postgraduate Degree: \$117,121 more each year, representing the highest combined gain.

## Annual Analysis of Saving 1%, 5%, and 10% High School Dropouts

Annual Saving Scenario	High School Dropouts	High School Graduates	Associate Degree or Some College	Bachelor Degree	Graduate Degree	Postgraduate Degree
Individual State Gains		\$23,913	\$41,501	\$73,205	\$86,475	\$108,470
1%	233	\$5,571,729	\$9,669,733	\$17,056,765	\$20,148,675	\$25,273,510
5%	1066	\$25,491,258	\$44,240,066	\$78,036,530		
10%	2133	\$51,006,429	\$88,521,633	\$156,146,265		
Individual Federal Gains		\$3,450	\$2,326	\$7,813	\$10,300	\$8,651
1%	233	\$803,850	\$541,958	\$1,820,429	\$2,399,900	\$2,015,683
5%	1066	\$3,677,700	\$2,479,516	\$8,328,658		
10%	2133	\$7,358,850	\$4,961,358	\$16,665,129		
Total Gains		\$27,363	\$43,827	\$81,018	\$96,775	\$117,121
1%	233	\$6,375,579	\$10,211,691	\$18,877,194	\$22,548,575	\$27,289,193
5%	1066	\$29,168,958	\$46,719,582	\$86,365,188		
10%	2133	\$58,365,279	\$93,482,991	\$172,811,394		

Reducing high school dropout rates is a vital investment that offers extensive economic and social benefits. By ensuring students finish high school and advance to higher education, the data demonstrates that we can unlock significant financial gains through increased earnings, higher tax contributions, and lowered societal costs such as crime and healthcare. This analysis examines the potential benefits of keeping 1%, 5%, and 10% of students from dropping out and assisting them in attaining higher education levels, emphasizing the annual economic impact of such interventions.

#### 1. Impact of Saving 1% (233 Students)

- Even saving just 1% of students leads to millions of dollars in economic and social benefits, with high annual returns on investments to reduce dropout rates. Compared to High School Dropouts (HSDO):
  - High School Graduates: \$6 million
  - Associate Degree/Some College: \$10 million
  - Bachelor's Degree: \$19 million
  - Graduate Degree: \$23 million
  - Postgraduate Degree: \$27 million

#### 2. Impact of Saving 5% (1066 Students)

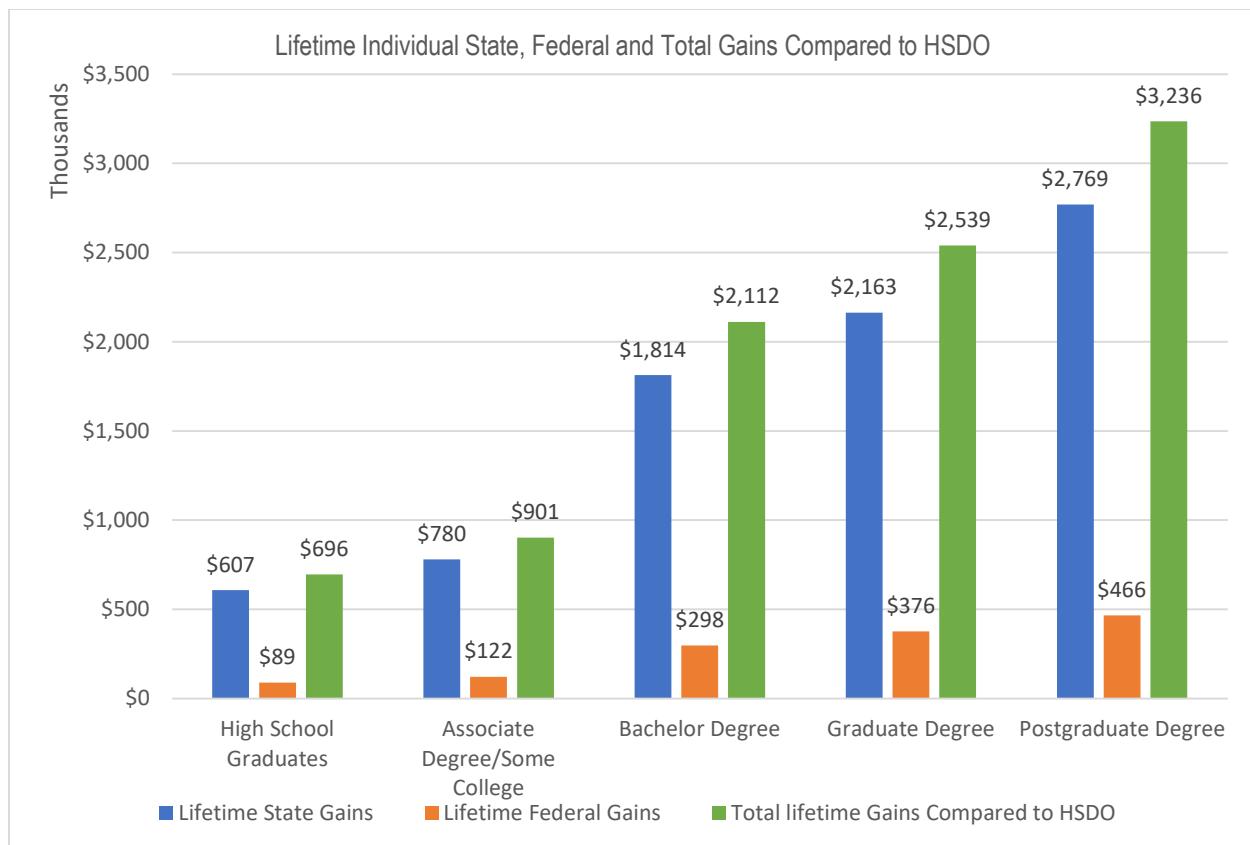
- Increasing retention by 5% yields exponentially higher benefits, with total gains of nearly 50 million for Associate Degree/Some College and \$86 million for bachelor's degree holders degrees, highlighting the compounding economic advantages of education. Compared to High School Dropouts (HSDO)
  - High School Graduates: \$29 million
  - Associate Degree/Some College: \$47 million
  - Bachelor's Degree: \$86 million.

#### 3. Impact of Saving 10% (2133 Students)

- Saving 10% of students from dropping out generates immense societal and economic returns, with combined benefits approaching \$175 million for bachelor's degree holders. Compared to High School Dropouts (HSDO)
  - High School Graduates: \$58 million
  - Associate Degree/Some College: \$93 million.
  - Bachelor's Degree: \$173 million.

### Combined Lifetime Analysis

Individual Lifetime Differences Table	High School Dropouts	High School Graduates	Associate Degree/Some College	Bachelor Degree	Graduate Degree	Postgraduate Degree
Lifetime Income	\$994,032	\$1,495,936	\$1,652,300	\$2,639,624	\$2,980,692	\$3,590,912
Difference	—	\$501,904	\$658,268	\$1,645,592	\$1,986,660	\$2,596,880
Lifetime State Tax	\$39,933	\$65,600	\$75,206	\$130,084	\$150,315	\$186,048
Difference	—	\$25,667	\$35,273	\$90,151	\$110,382	\$146,115
Lifetime Federal Tax	\$68,472	\$119,296	\$139,934	\$317,560	\$400,356	\$544,256
Difference	—	\$50,824	\$71,462	\$249,088	\$331,884	\$475,784
Lifetime Health Expenditure	\$92,590	\$57,600	\$33,480	\$15,760	\$9,840	\$7,880
State Expenditure	\$26,851	\$16,704	\$9,709	\$4,570	\$2,854	\$2,285
Difference		\$10,147	\$17,142	\$22,281	\$23,997	\$24,566
Federal Expenditure	\$65,739	\$40,896	\$23,771	\$11,190	\$6,986	\$5,595
Difference		\$24,843	\$41,968	\$54,549	\$58,753	\$60,144
Lifetime Education Expenditure by Degree	\$44,520	\$59,360	\$24,180	\$42,760	\$22,580	\$95,100
State Expenditure	\$40,958	\$54,611	\$16,360	\$26,640	\$13,700	\$40,100
Federal Expenditure	\$3,562	\$4,749	\$7,820	\$16,120	\$8,880	\$55,000
Lifetime State Education	\$40,958	\$54,611	\$70,971	\$97,611	\$111,311	\$151,411
Difference		(\$13,653)	(\$30,013)	(\$56,653)	(\$70,353)	(\$110,453)
Lifetime Federal Education	\$3,562	\$4,749	\$12,569	\$28,689	\$37,569	\$92,569
Difference	—	(\$1,187)	(\$9,007)	(\$25,127)	(\$34,007)	(\$89,007)
Lifetime State Expenditure on Crime	\$92,319	\$30,723	\$19,245	\$9,354	\$9,354	\$9,354
Difference	—	\$61,596	\$73,074	\$82,965	\$82,965	\$82,965
Lifetime Federal Expenditure on Crime	\$21,657	\$7,205	\$4,514	\$2,195	\$2,195	\$2,195
Difference	—	\$14,452	\$17,143	\$19,462	\$19,462	\$19,462
Lifetime Social Cost of Crime	\$32,601	\$10,850	\$6,795	\$3,305	\$3,305	\$3,305
Difference	—	\$21,751	\$25,806	\$29,296	\$29,296	\$29,296
Total Lifetime State Benefits	—	\$607,412	\$779,550	\$1,813,632	\$2,162,947	\$2,769,369
Total Lifetime Federal Benefits	—	\$88,932	\$121,566	\$297,972	\$376,092	\$466,383
Total Lifetime Benefits Compared to HSDO	—	\$696,344	\$901,116	\$2,111,604	\$2,539,039	\$3,235,752



The lifetime benefits of education reveal a compelling case for reducing high school dropout rates and encouraging higher educational attainment. Compared to high school dropouts, individuals with higher education levels contribute significantly more to state and federal revenues while reducing societal costs. For instance, lifetime state benefits range from \$607,412 for High School Graduates to \$2,769,369 for Postgraduate Degree holders, while benefits for Georgia range from 607,412 to 2.77 million, and federal benefits climb from \$88,932 to \$466,383 over the same levels. These benefits exceed \$3.2 million for Postgraduate Degrees, showcasing education's exponential financial and societal returns. This underscores the transformative potential of investing in education policies to foster long-term economic growth and social stability.

## 1. Lifetime State Benefits

- Lifetime state benefits rise significantly with higher education levels. Compared to High School Dropouts (HSDO)
  - High School Graduates: \$607,412
  - Associate Degree/Some College: \$779,550 more over a lifetime.
  - Bachelor's Degree: \$1,813,632 more, a significant increase reflecting the higher earnings and tax contributions.
  - Graduate Degree: \$2,162,947 more, showcasing the compounded benefits of advanced education.
  - Postgraduate Degree: \$2,769,369 more, the highest state benefit.

## 2. Lifetime Federal Benefits

- Federal benefits increase steadily with higher education levels, reflecting increased tax revenues and reduced dependency on federal resources. Compared to a High School Dropouts (HSDO)
  - High School Graduates: \$88,932
  - Associate Degree/Some College: \$121,566
  - Bachelor's Degree: \$297,972
  - Graduate Degree: \$376,092.
  - Postgraduate Degree: \$466,383

## 3. Combined Lifetime Benefits

- Combined benefits increase substantially with higher education, demonstrating advanced degrees' compounding financial and societal advantages. Compared to a High School Dropouts (HSDO)
  - High School Graduates: \$696,344 more
  - Associate Degree/Some College: \$901,116 more.
  - Bachelor's Degree: \$2 million more.
  - Graduate Degree: \$2.5 million more.
  - Postgraduate Degree: \$3.2 million more.
  - Lifetime Analysis of Saving 1%, 5%, and 10% High School Dropouts

Lifetime Saving Scenario	High School Dropouts	High School Graduates	Associate Degree or Some College	Bachelor Degree	Graduate Degree	Postgraduate Degree
State Gains		\$607,412	\$779,550	\$1,813,632	\$2,162,947	\$2,769,369
1%	233	\$141,526,996	\$181,635,150	\$422,576,256	\$503,966,651	\$645,262,977
5%	1066	\$647,501,192	\$831,000,300	\$1,933,331,712	\$2,305,701,502	\$2,952,147,354
10%	2133	\$1,295,609,796	\$1,662,780,150	\$3,868,477,056	\$4,613,565,951	\$5,907,064,077
Federal Gains		\$88,932	\$121,566	\$297,972	\$376,092	\$466,383
1%	233	\$20,721,156	\$28,324,878	\$69,427,476	\$87,629,436	\$108,667,239
5%	1066	\$94,801,512	\$129,589,356	\$317,638,152	\$400,914,072	\$497,164,278
10%	2133	\$189,691,956	\$259,300,278	\$635,574,276	\$802,204,236	\$994,794,939
Total Gains		\$696,344	\$901,116	\$2,111,604	\$2,539,039	\$3,235,752
1%	233	\$162,248,152	\$209,960,028	\$492,003,732	\$591,596,087	\$753,930,216
5%	1066	\$742,302,704	\$960,589,656	\$2,250,969,864		
10%	2133	\$1,485,301,752	\$1,922,080,428	\$4,504,051,332		



The table illustrates how even a small percentage reduction in dropout rates can significantly affect state and federal governments over the long term. For example, saving just 1% of students (233 individuals) from dropping out and helping them attain higher education can yield lifetime benefits exceeding \$750 million if they earn a postgraduate degree. If this is scaled to 10% (2,133 students), the same group's lifetime benefits approach \$7 billion. These statistics emphasize how a relatively small number of individuals can significantly enhance public revenues, decrease societal costs, and stimulate economic growth when supported in achieving higher education. Such transformative outcomes underscore the essential role of targeted investments in education in promoting long-term prosperity for both state and federal governments. Here is a detailed analysis of how saving this small number of people has high economic returns at each level.

### 1. Impact of Saving 1% (233 Students)

- Saving 1% of students results in lifetime benefits exceeding \$750 million for Postgraduate Degree holders, showing the significant long-term value of dropout prevention efforts. Compared to high school dropouts:
  - High School Graduates: \$162 million.
  - Associate Degree/Some College: \$210 million.
  - Bachelor's Degree: \$492 million.
  - Graduate Degree: \$592 million.
  - Postgraduate Degree: \$754 million.

### 2. Impact of Saving 5% (1066 Students)

- A 5% reduction in dropout rates generates billions in lifetime benefits, with bachelor's degree holders contributing over \$2.3 billion, highlighting the exponential returns from higher education. Compared to high school dropouts:
  - High School Graduates: \$742 million.
  - Associate Degree/Some College: \$960 million.
  - Bachelor's Degree: \$2.3 billion.

### 3. Impact of Saving 10% (2133 Students)

- Saving 10% of students generates lifetime benefits nearing \$4.5 billion for bachelor's degrees, demonstrating the monumental financial impact of targeted educational interventions. Compared to high school dropouts:
  - High School Graduates: \$1.5 billion.
  - Associate Degree/Some College: \$2 billion.
  - Bachelor's Degree: \$4.5 billion.

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