# The Student Right to Know Before You Go Act of 2017

Next to home ownership, a college education is often the most expensive investment Americans will make in their lifetime. Obtaining some level of post-secondary degree or certificate is often essential to securing employment in the modern workforce.

However, rising educational costs and uncertainty in the job market have made the stakes higher than ever for young people looking to invest in higher education. In deciding between colleges and areas of study, students have a right to know how long it will take to complete their education, the likelihood they will graduate, their chances of getting a job when they finish, the odds they will default on their student loans, how much they can expect to earn and how much it will cost.

According to the College Board, the average cost of tuition and fees for the 2016–2017 school year was $33,480 at private colleges, $9,650 for state residents at public colleges, and $24,930 for out-of-state residents attending public universities. The average student loan borrower in the college class of 2016 carried over $38,000 in debt.[1]

Currently, prospective students are forced to make costly and critical decisions about furthering their education with very little or inaccurate information. For example, the US Department of Education makes some institutional data available through its College Scorecard, but the information is, at best, extremely limited. States and private websites also try to put out similar information, but the data typically only examines first-time, full-time students or students who remain within a given state after college.

The Student Right to Know Before You Go Act would:

- Produce highly accurate information about college and student outcomes while guaranteeing the privacy of sensitive information through a process that is resistant to Equifax-style data breaches or hacking.
- Use information that is already gathered to match encrypted student records and financial assistance records with encrypted employment and earnings data through a technological process designed to protect students' privacy called secure multi-party computation.
- **Provide students and their families with access to a more complete picture of the costs and outcomes of their education choices without sacrificing individual privacy.**

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[1] https://trends.collegeboard.org/sites/default/files/2016-trends-college-pricing-web_0.pdf and
https://www.cbsnews.com/news/congrats-class-of-2016-youre-the-most-indebted-yet/

## Examples of Key Differences Between Institutional-Level Student Outcomes Data Made Available Under Current Law, and Under the Student Right to Know Before You Go Act

| Metric | Under Current Law | Under the Student Right to Know Before You Go Act |
|---|---|---|
| *Post-Graduation Earnings Averages* | Under current law, no information is made available on average post-graduation earnings. | This Act would calculate earnings (average, median, and at various percentage intervals) broken down by:<br>1) Educational institution<br>2) Program of study and credential received<br>3) State of employment<br>4) Completion status |
| *Graduation Rate* | An institution's graduation rates are only calculated for first-time, full-time students. | Graduation rates would be made available for first-time full- and part-time students. The bill would also make available graduation rates for non-first-time students (both full- and part-time). |
| *Degree or Certificate-Seeking Status* | Under current law, a school's graduation rates are calculated for first-time, full-time degree-seeking students (including certificates) but with no disaggregation based on type of credential. | This Act would separate out students who are not seeking a degree or certificate so they do not count toward or against an institution's graduation rates based solely on a student's declared intent. |
| *Average Loan Debt Upon Graduation* | This information is not calculated under current law. | This Act would calculate the average federal loan debt for students upon graduation and would be disaggregated based on a number of factors. |
| *Average Loan Debt for Non-Completers* | This information is not calculated under current law. | This Act would calculate the average amount of total federal loan debt for students who do not complete a program of study and would be disaggregated based on a number of factors. |
| *Rates of Continuation to Higher Levels of Education* | These rates are not calculated under current law. | This Act would calculate the percent of students from a given institution and given program who go on to higher levels of education (post-baccalaureate, doctoral programs, law school, etc.). |
| *Outcome Measures for Students Who Received a Federal Pell Grant, Stafford Loans, or GI Bill Benefits* | Current law requires institutions to make available, upon request, to current and prospective students graduation and completion data of certificate- and degree-seeking full-time undergraduate Pell Grant recipients and loan recipients. However, a 2011 study estimated that many institutions do not comply with this requirement and implementation varies across campuses, making cross-campus comparisons unreliable. | Rather than allowing broad institutional discretion, this Act would require and enable the calculation of outcome metrics disaggregated by students who receive: Pell Grants, Stafford Loans, and GI Bill benefits. |

# What is Secure Multi-Party Computation?

- Secure Multi-Party Computation (MPC) is a technology that allows for specific mathematical calculations to be performed on different data sets, held by different parties who may not trust each other, without each party having to reveal their data in a readable form to anyone else. Instead, calculations can be performed on encrypted data.
- MPC uses advanced cryptographic technology (essentially enhanced encryption) to protect the underlying data, enabling calculations to be performed on the data, while preventing the underlying data from being accessed by other parties or falling into the wrong hands.
  - As an example, if three friends wanted to figure out their average income, but didn't want to reveal their income to each other, they could use MPC to calculate it.
  - Each person would encrypt their annual income (the underlying data) using a special tool and process which would enable them to determine the average of the incomes, even without being able to decrypt original (or underlying) data or learn anything about each other's individual incomes.
- Several U.S. government research agencies, including the National Science Foundation (NSF), Defense Advanced Research Projects Agency (DARPA), Intelligence Advanced Research Projects Activity (IARPA), and Department of Homeland Security (DHS) have funded research into MPC.

### What are the advantages of Secure Multi-Party Computation?

- Typically, organizations working with sensitive data will attempt to protect that data through legal means (contracts, acceptable use policies, etc), and through technical efforts intended to prevent the data from being lost or stolen (firewalls, anti-virus, etc.).
- However, both of these methods can fail. Individuals can violate their contractual obligations or ignore policies. Likewise, outside parties can breach cybersecurity defenses and steal sensitive data.
- With an MPC system, the underlying, raw, sensitive data never leaves the control of the submitting party. Instead, approved statistical queries are performed through a secure protocol on encrypted versions of the data. As such, if the encrypted data is somehow lost or stolen, nothing sensitive will be accessible.

### What type of problems has Secure Multi-Party Computation been used to solve?

- MPC has been used by the Boston Women's Workforce Council to calculate gender wage-gap information, using data that has been voluntarily submitted by employers.[2]
- The Estonian government used MPC to examine tax data and student records in order to determine whether working while in college increased student dropout rates.[3]
- The annual sugar beet auction in Denmark uses MPC to allocate farming quotas.[4]

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[2] http://www.cs.bu.edu/techreports/pdf/2016-008-mpc-lightweight-web-app.pdf
[3] https://edps.europa.eu/sites/edp/files/publication/17-06-09_triin-siil_sharemind_en.pdf
[4] https://csrc.nist.gov/csrc/media/events/meeting-on-privacy-enhancing-cryptography/documents/toft.pdf