Delaware announced on Wednesday a new effort to encourage high-achieving low-income students to apply to top colleges, saying it would send application fee waivers and other information to every such high school senior in the state.

The program — a collaboration between Gov. Jack Markell, a Democrat, and the College Board, which administers the SAT — is a response to recent research showing that most poor students with high grades do not apply to any top colleges. Instead, many attend colleges with fewer resources and fail to graduate, at a time when the wage gap between college graduates and everyone else is near a record high.

The pattern contributes to income inequality and holds down social mobility, economists say.

In a separate move Wednesday, also in response to the recent research, Wellesley College unveiled a calculator designed to show poor and middle-class students that they would pay only a small fraction of the published tuition if they attended the college. Similar calculators already exist, but Wellesley’s may be the simplest, requiring many fewer steps.

Delaware is already one of three states — Idaho and Maine are the others — that pays for all high school juniors to take the SAT, according to the College Board. Delaware began doing so in 2010-11, in reaction to the Obama administration’s Race to the Top education program.
Under the new effort, paid for by the College Board, high-achieving low-income students will also receive a packet of information on selective colleges, as well as waivers for the application fee. The information includes details on admission and financial aid policies, as well as on the variation in graduation rates at different colleges.

In a recent experiment by Caroline M. Hoxby of Stanford and Sarah E. Turner of the University of Virginia, similar packets increased the number of students who applied to top colleges.

The Delaware packets will also include a letter from 10 elite colleges — the members of the Ivy League, as well as M.I.T. and Stanford — saying that the students are candidates for admission. The governor and the state’s education secretary will add their own letters, congratulating the students on their success.

Because Delaware is a small state, with only about 9,000 high school seniors, the new program applies to relatively few students: about 80 who are candidates for admission to elite colleges, and an additional 300 with grades and test scores high enough to be admitted to other four-year colleges. But officials say they hope the model encourages larger states to take similar steps.

“Kids have earned opportunities they do not take,” David Coleman, the president of the College Board, said in an interview. “It’s our mission to fix that.”

One unresolved question is how colleges will respond if they begin receiving many more applications from low-income students who are qualified for admission. A recent study, by Dr. Hoxby and Christopher Avery of Harvard, found that only 34 percent of high-achieving high school seniors in the bottom fourth of the income distribution attended any of the country’s 238 most selective colleges. Many who do not apply live in smaller metropolitan areas.

If more such students were to apply, colleges could face new pressures on their financial aid budgets. An array of college administrators have said they are eager to recruit more low-income students, even though they have largely failed to do so in recent years.
Wellesley, a women’s college outside Boston whose alumnae include Hillary Rodham Clinton, enrolls a larger percentage of lower-income students than most elite colleges. Still, officials there said that many high school students remained confused about how much it would cost for them to attend and declined to apply.

The new calculator — which asks, anonymously, for six pieces of financial information, including income and home value — will help, the officials said.

“The conversation that takes place around college costs is largely misguided,” said Phillip B. Levine, a professor of economics at the college, who developed the calculator. “People focus only on the sticker price.”

The published cost of a year at Wellesley, including tuition, room and board, and fees, is $57,042. But about 60 percent of students receive financial aid.

A typical married couple earning $85,000 a year who have no other students in college would pay about $12,000 to send a child to Wellesley. A typical couple earning $50,000 would pay about $4,000.

The calculator somewhat understates the amount that families pay by ignoring the money that students themselves pay, on top of what their parents pay. Most students at Wellesley who receive financial aid pay about $5,000 a year, through a combination of a loan and wages from a campus job.