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## Investing in Higher Education Through the Minnesota State Grant Program:

### *A Review of Research on Positive Effects of Need-Based Grant Aid*

#### INTRODUCTION

For decades, Minnesota has enjoyed the economic and social benefits of a well-educated population. However, sustaining these benefits may become more difficult. And if viewed in the context of the global economy, the state may already be falling behind.

The United States has been a leader globally for those earning an associate degree or higher. The current 45 to 54 age cohort in the United States has a higher proportion with an associate degree or more education than all but three countries. However, when considering educational attainment for current United States 25 to 34-year-olds, many countries have increased their performance while the United States has remained stagnant — and this cohort now ranks sixteenth.<sup>1</sup> For Minnesota, the 25 to 34-year-old cohort ranks third in the nation for those with an associate degree or higher, but ranks at or behind eight other countries.

Minnesota's economy has historically been driven by the education of its citizens. Evidence of this is in the research by the Georgetown Center for Education and the Workforce which notes the state is second in the nation for the share of jobs requiring postsecondary education. Further, the center reports that Minnesota's economy will require 70% of its population to have at least some college education in 2018, and that 85% of all new jobs created in Minnesota in the future will require some level of postsecondary education.<sup>2</sup> Currently 68% of Minnesotans have at least some college education, up from 65% in 2000.<sup>3</sup> Given global competition, the challenge for Minnesota will be not merely maintaining, but improving rates of college completion.

*This is one in a series of research-based briefs prepared by the Minnesota Private College Council for members and other interested parties.*

*If you have a question or suggestion for a topic for a future issue brief, please contact the research staff at the Council.*

*Student aid has been found to have a positive impact on college completion. Unmet need causes students to deviate from full-time enrollment and living on campus — behavior linked to academic success. Rather, unmet need causes students to attend part-time, live off campus and work long hours to avoid borrowing, which are factors that decrease persistence and completion dramatically.*

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Minnesota's higher education completion levels will be challenged by increasing diversity in race/ethnicity and socioeconomic status. An example of this trend can be found in looking at the proportion of individuals of color by age in Minnesota. While 14% of all Minnesotans are nonwhite, the share ranges from 7% of those age 65 to 54 to 25% of those under 5 years old. If we consider the next 18 years of college decision making, 22% of those 18 and under (the next cohort to consider college) are individuals of color, compared to 19% of those age 18 to 34 (the preceding cohort).

Low-income students enrolled in K-12 share a similar pattern: In the fall of 2011, 42% of first-graders received subsidized lunch at school compared to 34% of tenth-graders the same year.<sup>4</sup> These trends present a challenge to sustaining the state's educational and economic position, as these populations have historically lower rates of college enrollment and completion that overall state averages mask. For instance, research illustrates that 54% of high-income students complete a four-year degree compared to 9% of low-income students. Lastly, successful on-time graduation for students of color is lower (32%) than for white students (45%).<sup>5</sup>

As Minnesota becomes more diverse demographically and socioeconomically in the coming decades, higher education policy responses will need to:

- increase enrollment of low-income students,
- increase retention and persistence,
- improve on-time graduation rates,
- mitigate time students spend working rather than studying,
- reduce reliance on loan aid, reduce cumulative debt upon graduation and
- increase educational attainment of non-traditional (older than 24) students to meet the state workforce education goals.

Without progress in each of these areas, Minnesota risks falling behind in the national and global economy.

The purpose of this paper is to provide evidence of how need-based grant aid positively impacts each of the areas above. This research brief summarizes the strong body of academic literature which demonstrates that grant aid is an efficient and effective tool to improve higher education outcomes. This brief is not intended to be an exhaustive review of all of the research available on this topic; it does not examine other variables that affect student outcomes or contrary findings about financial aid. Rather, it details the positive effects of financial aid documented in research.

### **INCREASED ENROLLMENT OF LOW-INCOME STUDENTS**

Grant aid's effect on low-income enrollment is a topic thoroughly studied in higher education research. It has been examined from various angles using different time frames, data and research methods. The results provide overwhelming support for the positive relationship between low-income students receiving grant aid and enrolling in higher education.

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One of the most influential studies examining student price responsiveness — the reaction to changes in tuition or grant aid — is Leslie and Brinkman’s research.<sup>6</sup> Their research offered early illustrations of how enrollment rates decrease when tuition increases — an enrollment drop of up to 2.4% for every \$100 price increase. Their key conclusions were that grant aid had a positive effect on both access and persistence and encouraged students to consider enrollment at institutions that may cost more such as a four-year over a two-year institution.

Several replications or similar analyses to Leslie and Brinkman’s work have been done that show that increases in low-income enrollment are positively related to increases in need-based grants.<sup>7 8 9 10</sup> For instance, Perna and Titus found that enrolling in college is negatively related to tuition increases and positively related to need-based grant aid. As an example, a student facing an extra thousand dollars in tuition lowers the probability of matriculating by 2%, where an extra thousand dollars of grant aid increases the probability of enrolling by 11%.<sup>11</sup> Perna and Titus also concluded that increases in aid affect the type of institution high school graduates choose.<sup>12</sup> There is a depth of evidence regarding students’ different perceptions to changes in tuition or grant aid. In most studies that focus on low-income students, it is found that these students are always more sensitive to tuition or grant changes than their higher-income counterparts. And, the receipt of need-based aid improves the odds a student will choose to enroll at a four-year institution.<sup>13</sup> The evidence shows that while enrollment choices are strongly related to increases in grant aid, the effect is neutral or less robust for other aid options such as loans or work-study.<sup>14</sup> Finally, research suggests that not only is need-based grant aid beneficial to improved student access, but a policy shift toward greater use of aid over institutional subsidy could result in a more efficient allocation of scarce state resources.<sup>15</sup>

### INCREASED RETENTION AND PERSISTENCE

While need-based grant aid’s positive effect on enrollment has been studied for decades, access and enrollment is only the first step. Retention, persistence and on-time graduation are increasingly becoming the focus of research. Retention is generally defined as a student returning for their second year while persistence is the continued enrollment on the route to completion.

Similar to research regarding grant aid’s effect on enrollment, persistence studies examine how changes in grant aid relate to persistence or staying in school longer. While there are a host of non-financial variables in a student’s life that may affect persistence, research suggests that the most common factors negatively affecting persistence are financial.<sup>16</sup> In general, increasing need-based grant aid increases persistence for college students.<sup>17 18 19 20</sup> <sup>21</sup> For example, Bettinger used two different statistical procedures to determine that need-based aid reduces dropout rates.<sup>22</sup> Students with need that was fully met persist at higher rates. Students requiring large loans to make up the unmet need persist at lower rates than those with smaller loans, no need, and even those with unmet need that did not take out loans.<sup>23</sup> Dowd and Coury’s research supports the negative association between loans and retention to a second year, noting that 27% of borrowers retain compared to 45% of non-borrowers.<sup>24</sup>

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## **IMPROVED ON-TIME GRADUATION RATES**

On-time graduation is important as it reduces college costs associated with being enrolled for longer than four years and it allows the graduate to join the workforce sooner and avoid losing out on years of earnings.<sup>25</sup>

<sup>26</sup> According to the Spellings Commission, family income is an important factor related to college access and completion. The commission's research noted that only 36% of college-qualified low-income students complete a bachelor's degree within eight and a half years of high school graduation compared to 81% of high-income students.<sup>27</sup> And after years of research examining and improving access to higher education, only recently has research begun to address the relationship between financial aid policies and college completion.<sup>28</sup>

Student aid has been found to have a positive impact on completion. While there are other factors that may impact persistence and completion, research has provided evidence that student aid is a key part of the puzzle.<sup>29</sup> Having unmet need has a negative effect on college completion.<sup>30</sup> Research suggests that the more unmet need a student has, the less likely that student will persist and complete.<sup>31 32</sup> Further, unmet need causes students to deviate from full-time enrollment and on campus attendance — behavior linked to academic success — to part-time attendance, living off campus and working long hours to avoid borrowing which are factors that decrease persistence and completion dramatically.<sup>33</sup> Filling the unmet need gap with loan aid is not an effective option as loan debt is negatively associated with student outcomes.<sup>34 35</sup> Also, borrowing is not a choice everyone is willing to make.<sup>36</sup>

Increasing the share of higher education funding allocated to student financial aid has proven to improve completion.<sup>37</sup> Increasing grant aid for students not only helps pay college costs, but may facilitate persistence and attainment by enabling a student to attend full-time rather than working to finance their education and enrolling part-time.<sup>38</sup> Further, it has the beneficial effect of increasing students' freedom to become more engaged in the academic and social environments of their schools.<sup>39</sup> Research suggests students have improved academic achievement when they are more engaged on campus, especially lower-ability students.<sup>40 41</sup>

Some states have experimented with merit aid grant programs or a combination of merit and need-based programs. Research has found that both have a positive effect on student outcomes. However, besides criticism from some regarding equity issues tied to merit-based programs, it has been found that aid policies that move away from need-based aid for low-income students and toward merit-based aid could foster stagnant graduation rates.<sup>42</sup>

## **REDUCED TIME STUDENTS SPEND WORKING**

Minnesota students work to earn money to pay college expenses or for spending money. Minnesota students at both public and private not-for-profit institutions work 20 hours a week on average. When broken down

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by income, students coming from lower-income families work more hours than students from higher-income families.

Research suggests that working a limited number of hours can have a positive effect on student outcomes. Students who worked 20 hours or less have been found to have slightly higher grades than those who do not work or those who worked more than 20 hours.<sup>43</sup> Perna found that retention and bachelor's degree attainment rates were higher for students who worked between 1 and 15 hours compared to other students.<sup>44</sup>

However, there is a point where working begins to have a negative impact on the student. While most students do some form of work, research indicates that working too much while attending school full-time can have a negative effect on student engagement on campus, grades, persistence and completion.<sup>45 46</sup> Making matters worse, students are working more hours than in the past. The percent of students working more than 20 hours a week grew from 17% in 1973 to 30% in 2003.<sup>47</sup> Students who work more than 35 hours are less likely to complete a full year of college than those working less than 15 hours (21% compared to 6%).<sup>48</sup> Further, Titus found that working more than 11 hours per week had a negative effect on completion.<sup>49</sup> Research on a cohort of social work students found that most of them work, but working more hours was related to lower grades. For students who work full-time, most of them attend school part-time, which decreases chances for persistence and completion.<sup>50 51</sup> Finally, 48% of students coming from lower-income families indicated work had a negative effect on grades compared to 33% of students from higher-income families.<sup>52</sup>

Another factor related to student success is time spent studying. In 1961, students spent 24 hours a week on average studying compared to 14 hours in 2003. While some research attributes the average drop in studying to declining academic standards, it also illustrates that those students who work more than 20 hours a week studied less than other students both in 1961 and 2003.<sup>53</sup> Further, research suggests that students would prefer to spend more time studying if they did not have to work longer hours.<sup>54</sup> For low-income students, 62% note they work to pay for tuition, fees and living expenses.<sup>55</sup> This need to work forces students to make a trade-off between studying and working.<sup>56</sup>

Need-based grant aid has been shown to reduce hours worked. Students who received need-based grant aid were less likely to work more than 25 hours per week. Additionally, 49% of working students who received less than \$1,000 in grant aid worked 25 hours or more per week compared to 26% of those who received more than \$5,000 in grant aid.<sup>57</sup> While evidence shows that enrollment and persistence increase with the provision of need-based grant aid, it is neutral or less significantly related to other aid options such as loans or work-study.<sup>58</sup> Thus, excess work-study or availability to work off campus may not improve student outcomes. Lastly, grant aid's ability to reduce working to pay for college also has the beneficial effect of increasing students' free time to become more engaged in the academic and social environments. This engagement on campus has been shown to improve student outcomes.<sup>59 60</sup>

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## **REDUCED BORROWING**

The increasing reliance on borrowing may reduce college attainment as debt aversion could prevent some from ever applying.<sup>61</sup> Additionally, the accrual of loans by those who do borrow has a negative effect on student outcomes.<sup>62</sup> The purchasing power of government need-based grant aid has diminished as grant funding has remained flat or declined over the past decade and loans have increased as the most prominent form of students' funding for higher education.<sup>63 64</sup> This may be problematic for current and future enrollment and persistence as many individuals, especially those from disadvantaged backgrounds, are unwilling or unable to qualify for loans.<sup>65</sup>

Baum notes that more adequate grant funding is necessary as the prospect of borrowing discourages enrollment among students, especially those from low-income and underrepresented groups.<sup>66</sup> Loan aversion prevents low-income and minority student higher education opportunities. To avoid debt these students are likely to not enroll, attend a lower cost institution (such as a two-year rather than a four-year) or borrow less than they need. Also, these students are at higher risk of defaulting on their loans if they do borrow to pay for college.<sup>67</sup>

Grants have a more positive impact on persistence than loans.<sup>68</sup> As loan dollars replace need-based grant dollars, the probability of attending college decreases.<sup>69</sup> Further, if enrollment does occur, loans do not contribute to higher persistence or attainment rates like grants have been shown to do.<sup>70</sup> Debt may also affect students' choice of major, deterring students from public service fields such as teaching and social work. Student loan debt may impact life decisions after college such as buying a house, getting married or having children. Lastly, debt aversion may be tied to fear of defaulting on the loan and the fact that default rates rise as cumulative debt increases.<sup>71</sup>

## **INCREASED OUTCOMES OF NON-TRADITIONAL STUDENTS (OVER 24 YEARS OLD)**

Thirty percent of all undergraduates enrolled in Minnesota are non-traditional (over 24 years old). Many more adults are in the workforce with some college and could return for degree completion to improve their skills and occupational opportunities. For instance, 48% of Minnesotans 25 to 64 years old have either a high school diploma or some college with no degree.<sup>72</sup>

Of these non-traditional undergraduate students, 63% are enrolled part-time.<sup>73</sup> Part-time enrollment can be detrimental to attainment primarily due to increased time to completion.<sup>74</sup> Timely credit attainment is important to degree completion, especially those credits earned in the first year — thus part-time enrollment in the first term decreases long-term credit accumulation and decreases odds of completion.<sup>75</sup> Non-traditional students are more likely to enroll part-time due to the likelihood that they are working, married or have children. However, non-traditional status coupled with part-time enrollment are risk factors that negatively affect enrollment and the probability of completing a degree.<sup>76</sup>

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Non-traditional students perceive their primary role to be employees and their work often limits class scheduling options. Non-traditional students are more likely to leave without a degree and most at risk of dropping out during their first year.<sup>77</sup> Being a part-time student has been found to decrease interaction with faculty and lead to smaller educational gains than their full-time peers.<sup>78</sup>

With the significant number of non-traditional students currently in college — and the potential for many more — it is important that risk factors be mitigated and enrollment and completion facilitated. While rigorous research into aid effects on non-traditional students is limited, Seftor and Turner found sizable positive effects that need-based grant aid had on the college enrollment decisions of older students.<sup>79</sup> Need-based aid can reduce the need to work full-time, help cover college costs and increase the chances of full-time enrollment — which all are associated with improved student outcomes.

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## Endnotes

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