ETS Educational Testing Service

# Standards for What?

## The Economic Roots of K-16 Reform

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# Foreword

Anthony Carnevale and Donna Desrochers offer a powerful analysis of the forces that have stimulated and sustained education reform since the 1980s, forces certain to be a decisive influence on the future of American education. Focusing on standards and their implementation, they identify and describe the societal trends that are redefining the contemporary educational landscape.

Public policy leaders and educators alike will find their analysis and its implications for policy and practice challenging and demanding. But they will also find it invaluable for a deeper understanding of the inexorable economic and demographic forces that challenge them: the centrality of human capital in the knowledge-based global economy, the ratcheting up of knowledge and skill requirements for economic growth and for employment, and the impending shortage of college-trained workers. Their case for accelerated educational change rests not on failures or deficiencies of the past or present, but rather on the emerging, demonstrable educational needs of individuals and society in the twenty-first economy.

Carnevale and Desrochers have synthesized the unfolding economic, demographic, and educational drama of our times. Whatever a reader's role in the education or policy world, the analysis will be relevant to his or her responsibilities. Educators may find their attention drawn to the suggested mismatch between the jobs and careers of the new economy and the current core high school curricula and pedagogy. Public policy leaders should pay particular attention to the implications of the following:

**Educators should note the suggested mismatch between the jobs and careers of the new economy and the current core high school curricula and pedagogy.**

- For most Americans, education and training through and beyond high school is now a necessary condition (not just the most advantageous or desirable route) for developing skills required by most well-paying jobs.

- With the retirement of the baby boomers and increases in jobs requiring college-level knowledge and skills, the nation faces a prospective shortage of workers needed for economic growth and competitiveness.

- The United States' continuing international primacy in college access and attainment is problematic, as are the economic advantages stemming from this world leadership.

- In the knowledge economy, the educational prerequisites for individual opportunity and mobility, economic growth, social justice, civic and cultural participation, and national and state economic competitiveness are converging.

- The core of "K-16" educational reform is imperative to improve knowledge and skill levels to meet high standards, and significantly higher rates of associate and baccalaureate degree attainment. Such reform will require public investment, curricular reform, and educational efficiencies.

- Twenty years have passed between *A Nation at Risk* and standards-based reform—"Act I" according to Carnevale and Desrochers. But the unforgiving pace of economic and demographic change will not allow two decades for "Act II" (implementation of high standards with appropriate curricula, assessments, etc.) and "Act III" (higher education accountability).

- A major challenge will be to achieve accountability for education at all levels through high standards while, at the same time, maintaining the flexibility of educational organizations and individuals that is correctly credited with much of the nation's past economic and educational success.

**Reform of "K-16" education in order to meet high standards and increase rates of degree attainment will require public investment, curricular reform, and educational efficiencies.**

Finally, this report is particularly timely in light of the financial crises of the states. As states consider their responses to budget shortfalls, there are powerful temptations to reduce or defer investments in standards-based reform and higher education access and attainment. In previous recessions, for example, states have often reduced college access, raised tuition, and inadequately invested in student financial aid. Early indicators suggest a similar pattern of state responses to their current fiscal problems. But the economic and demographic realities described by Carnevale and Desrochers clearly suggest that this is the worst time for diminished investments in development of human capital. The consequences could ultimately be diminished standards of living for individual Americans and declining economic competitiveness for the states and the nation. The rest of the world, particularly our economic competitors, recognizes that the winners in the educational competition will enjoy enormous economic advantages in the twenty-first century. Carnevale and Desrochers give us a guide to these new realities by describing a realistic societal context for education policy.

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# Growing the Economy

For many workers, income mobility depends on employment mobility. Absent promotions and raises at work, workers look elsewhere for new jobs with better pay. Less skilled workers will likely find that not only are the inflation-adjusted earnings in low-wage jobs stagnant, but new job growth will be concentrated at the upper ends of the education pipeline.

It is expected that the employment shifts experienced during the latter half of the 20th century will continue to increase throughout the decade. At all education levels, turnover in existing jobs will continue to create many job openings, but new job growth will favor those with the most education. Jobs that require an associate degree are expected to grow the fastest, increasing by 32 percent through 2010, followed by jobs that require a bachelor's degree, growing by 24 percent. All totaled, four out of ten newly created jobs (9.3 million) will require at least some postsecondary education, up from less than three in ten in 2000 (Hecker, 2001).

**Over the next decade, four out of ten newly created jobs will require at least some postsecondary education, up from less than three in ten in 2000.**

While not growing as fast as high-skilled jobs, there still will be a sizable number of jobs for less skilled workers. For noncollege workers, jobs requiring apprenticeship or other work-based training greater than a year's duration are only expected to grow 8 percent by 2010. Jobs that require less than a year of customized training beyond high school also are expected to grow slower than average at 13 percent. Nevertheless, because of the large share of noncollege jobs already in the economy, the growth in these occupations translates into 12.8 million jobs (Hecker, 2001).[13]

Because workers in noncollege jobs change jobs more often, turnover also will create a large number of job openings for noncollege workers. Conversely, college-level jobs are less likely to have openings created via job turnover than by new job creation. Roughly two-thirds of total job openings in noncollege jobs are the result of job turnover, compared to just over one-half of openings in college-level jobs.

Apart from education requirements, jobs that require the highest levels of assessed cognitive skills also are expected to grow the fastest. While employers generally use education as a proxy for skills and abilities, there are many occupations in which workers tend not to have postsecondary credentials, but still need high levels of skill to perform the job. About six in ten workers already have skills similar to those demonstrated by people with at least some postsecondary education and access to jobs that pay at least $33,400, on average,

[13] The methodology used by the Bureau of Labor Statistics to project employment demand has historically underestimated the demand for college-level workers (Bishop, 1996). Many occupations that are not classified as "requiring" a college degree, in fact, employ many workers with some college or college-level skills.

per year. Jobs that require skills typically demonstrated by four-year degree holders will likely grow by nearly 20 percent, while those requiring skills similar to those with a sub-baccalaureate education will likely grow by 15 percent *(see Figure 17)*.

**FIGURE 17**

## The Labor Force Spans All Skill Levels, But Projected Job Growth Favors High Skill Levels

*Shares of the labor force (16-64) by literacy level, percent growth, distribution of jobs, and average annual earnings of year-round workers.*

| Skill Level | Share of labor force in 2000 | Projected job growth | Share of new jobs, 2000-2010 | Share of all jobs, 2000-2010 | Earnings in 2000 |
|---|---|---|---|---|---|
| **Advanced/superior** *(bachelor's degree)* | 26% | 19% | 31% | 26% | $48,000 |
| **Competent** *(some postsecondary)* | 35% | 15% | 36% | 37% | $33,400 |
| **Basic** *(below-average high school graduate)* | 24% | 13% | 22% | 25% | $26,900 |
| **Minimal** *(high school dropout)* | 15% | 13% | 10% | 12% | $21,500 |

*Authors' analysis of National Adult Literacy Survey (1992), Current Population Survey (2001), and Bureau of Labor Statistics Employment Projections, 2000-2010.*

**Although the most robust job growth will occur within skilled jobs, more moderate job growth will occur at the lower end of the skill continuum. Less skilled jobs are expected to grow slower than average.**

Although the most robust job growth will occur within skilled jobs, more moderate job growth and creation will occur at the lower end of the skill continuum. Less skilled jobs, those employing workers whose skills are similar to below-average high school graduates or high school dropouts, are expected to grow slower than average, by 13 percent.

While more and more workers need skill on the job, some workers do not get the job-related skills they need at college. About one-half of those who terminate their education with a high school diploma need and get training from various sources, but principally from their employers *(see Figure 18, facing page)*. Three-quarters of high school dropouts get jobs for which they do not need any training at all.

Overall, just over 20 percent of all workers are in jobs that do not require training but a substantial number of those jobs are transitional. Although these less skilled workers may be able to find jobs, the almost 40 percent of the current workforce whose skills are similar to workers in low-paying jobs typically earn no more than $26,900, on average, per annum.

**FIGURE 18**

## Training Among High School Dropouts and High School Graduates, 2001

*Percent of prime-age (30-59) employment.*

**In 2000, 60% of all workers had some postsecondary education or training...**

**About half of the 31% of all workers who were terminal high school graduates received some additional training...**

- 8% received informal on-the-job training
- 4% received formal company training
- 3% received postsecondary vocational training
- 2% received high school vocational training
- 14% received no additional training

**The 9% of workers with no high school degree received little additional training...**

- <1% received vocational or formal training
- 2% received informal on-the-job training
- 7% received no additional training

*Authors' analysis of Current Population Survey (2002); Eck (1993).*

# The Demographic Twist

Although future economic realities favor higher levels of education and a broader array of skills, a reversal in two longstanding demographic trends may make it difficult to fulfill these needs. The most powerful of these trends is the retirement of the baby boom. These boomers are working today but they will age beyond 55 years from here on out, prompting a rapid depletion of workers from the American labor force over the next 20 years.

This depletion is expected to be especially strong among the most experienced and highly educated workers because it is those baby boomers who have the greatest access to retirement income that supplements social security. By 2020, there will be about 46 million baby boomers with at least some college who will be over 55 years of age (Carnevale and Fry, 2001b).

The United States also will experience a second demographic reversal as the diminutive "Generation X" gives way to the larger "Generation Y." As the baby boomers leave the labor force taking their experience, education, and training with them, there will be a surge in the number of 18- to 24-year-olds. But on balance, the increase in the number of 18- to 24-year-olds will be far short of the number of youth necessary to replace the education and experience of the retiring baby boomers.

**The increase in the number of 18- to 24-year-olds that Generation Y will bring to the workplace will be far short of the number of youth necessary to replace the education and experience of the retiring baby boomers.**

While successive generations have acquired more schooling, educational attainment has plateaued among American youth over the last several years in spite of a doubling in the college/high school wage premium since the early 1980s. Between 1980 and 2000, the share of workers with at least some college increased by 20 percentage points. If current rates of college going persist, the share of Americans with at least some postsecondary education or training will only increase by 4 percentage points between 2000 and 2020 (Aspen Institute, 2002).

At the same time, even the relatively conservative projections of the Bureau of Labor Statistics suggest that over the next decade alone, about 30 percent of job openings will require workers with at least some college (Hecker, 2001). Moreover, the recent collapse of public budgets at a time when 4 million additional 18- to 24-year-olds are moving into their critical college-going years suggests that rates of postsecondary educational attainment will remain flat or decline. The result will be an even more substantial shortage in skilled workers with at least some postsecondary education and training.

**The combined effects of baby-boom retirements, flat educational attainment rates, and slow workforce growth should result in significant labor shortages, especially in jobs requiring the most skill and providing the greatest economic value.**

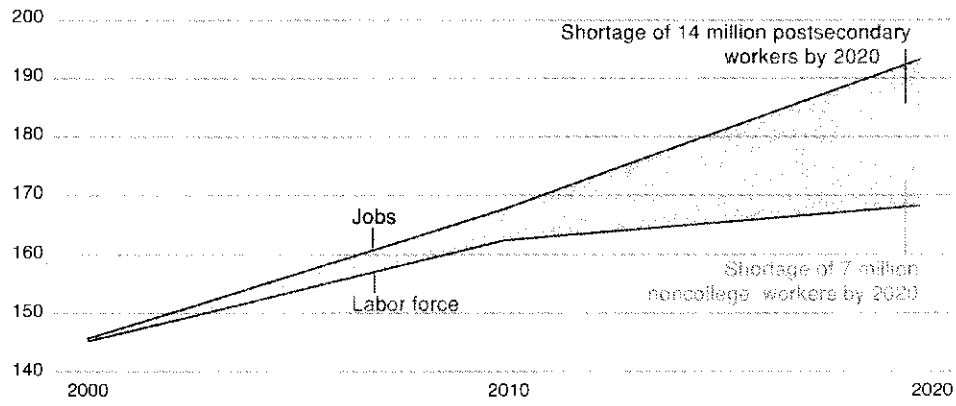
Baby-boom retirements and flat educational attainment rates are especially troublesome in the context of broader demographic and employment trends. The U.S. workforce, whose size has increased by almost 50 percent over the past 20 years, or roughly 39 million workers, will slow its growth to only 16 percent over the next several decades (Ellwood, 2001).

Assuming even moderate employment growth rates of 15 percent and a continuing increase in skill requirements on the job, the combined effects of these trends should result in significant labor shortages of at least 20 million workers, especially in jobs that require the most skill and provide the greatest economic value added *(see Figure 19)*. Two-thirds of the expected shortage in 2020 will likely arise in the most skilled jobs, resulting in a net deficit of workers with at least some college of about 14 million workers.

**FIGURE 19**

**Labor Force Growth Is Not Expected to Keep Pace with Job Growth through 2020**

*Millions of jobs/workers. Labor force data have been adjusted to reflect multiple job holding.*




*Authors' analysis and adaptation of data from Ellwood (2001), Fullerton and Toossi (2001), and Hecker (2001).*

The present economic slowdown may actually accelerate these longer-term trends toward shortages of educated and skilled labor. During the 1990-91 recession, companies aggressively used the pause to restructure production processes and to shift toward fewer workers using more sophisticated technology (Cappelli et al., 1997). These productivity-enhancing retrenchments require higher skill levels in the remaining job slots. It is conceivable that the present economic pause will encourage a further reorganization of

production and service delivery processes, accelerating the increase in demand for skilled labor.

In the face of sharply reduced labor force growth rates and possible skill shortages, education and training policies will have to play the lead role. In addition, family supports will be necessary to maintain or increase labor market participation, especially among women. Higher minimum wages, more flexible benefits, and an expanded Earned Income Tax Credit also may be necessary to encourage labor force participation.

A plethora of policies underlying the social safety net has effects on individuals' decisions to work. For instance, increasing retirement ages so that male labor force participation rates return to 1962 levels could decrease the expected worker shortage by one-third (Employment Policy Foundation, 2001). However, the increase is most likely to come from those workers most dependent on social security payments for retirement. These workers tend to be the lowest paid and least skilled. Further increases in the labor force participation of married women by expanding child-care assistance to the middle class may be the best bet for bringing more-skilled workers, but would be extremely expensive (Ellwood, 2001).

Large-scale skill-based immigration policies would be effective but politically sensitive. Each year, fewer than one million legal immigrants come to America--less than one-half of 1 percent of the total U.S. population in a given year. It is estimated that increasing the number of immigrants each year by 30 percent, to about 1.3 million a year, could reduce the projected skill deficit by nearly one-quarter (Employment Policy Foundation, 2001). But while changes in social policies might increase the size of the labor force, only expensive and politically difficult policy changes are likely to increase the available numbers of highly skilled workers (Ellwood, 2001).

**While changes in social policies might increase the size of the labor force, only expensive and politically difficult policy changes are likely to increase the available numbers of highly skilled workers.**

# State of Montana

**Shared Leadership for a Stronger Montana Economy**

# Recommendations of the Shared Leadership Steering Committees

January 24, 2005

# Executive Summary

Shared Leadership for a Stronger Montana Economy began in September 2003 when the Montana Board of Regents committed to find new ways for the Montana University System to take a more direct leadership role in the state's economic development. The process of developing specific initiatives to accomplish this goal can best be described in three phases.

**Phase one**
At the request of the Regents and the Office of Commissioner of Higher Education (OCHE) a number of people from various state agencies & organizations met between September 2003 and January 2004 as an *ad hoc* group to "brainstorm" ideas. This group's goal was to define a process that would engage a broad range of Montanans in prioritizing specific initiatives for implementation.

**Phase two**
The initial work of the *ad hoc* group culminated in January 2004 when the Board of Regents unanimously approved a defined process to identify, by mid-summer 2004, initiatives they could implement to establish a new role for the Montana University System in strengthening the state's economy. This process involved the creation of two groups:

- A Leadership Group consisting of Montana's senior political, labor, and business leaders who would provide broad oversight of the process; and
- A Project Team, comprised of individuals designated by a member of the Leadership Group, who had the ability to meet periodically, conduct policy research, and develop recommendations.

During the next five months, the Project Team met as a whole and in subcommittees to prioritize a number of possible initiatives. The Governor's office and several legislative interim committees were included in the effort. After developing a list of possible initiatives, the top six priorities were referred to the Board of Regents and the Postsecondary Education Policy and Budget (PEPB) Subcommittee for consideration. On July 8, 2004, the Board of Regents and the PEPB Subcommittee met jointly and agreed on three initiatives for immediate implementation:

- Develop stronger business-university system partnerships for workforce training (hereafter referred to as "Workforce").
- Remove barriers to access for postsecondary education ("Access").
- Expand distance learning programs and training ("Distance Learning").

**Phase three**
During the subsequent three months the Commissioner's Office and the Governor's Office jointly conducted 15 statewide "community listening sessions"

to get statewide input on the three priority initiatives. Three steering committees, representing a cross-section of Montana leaders, were formed and assigned a non-voting advisory group of education professionals to provide technical advice. Each steering committee met four times between November and January 2005 and held conference calls or met in subcommittees during this period as needed. Each committee then agreed on a set of the most serious problems in Montana and recommendations to address those problems.

**Recommendations of the Distance Learning Steering Committee**
Montana's distance learning programs lack system-wide coordination. Disparities are confusing and costly for students, especially students who use the offerings of more than one campus, and the university system cannot capture economies of scale. To significantly improve distance learning opportunities in Montana the committee recommends the state:

- Develop a coordinated structure for distance learning in Montana including the creation of a director, in the Office of the Commissioner of Higher Education, charged with designing and implementing a statewide approach to distance learning.
- Develop a Montana Distance Learning Gateway that will provide a portal, built on the "one-stop-shop" model, where Montanans can learn about and access distance delivery courses and programs in the State.
- Conduct a needs assessment to determine the types of distance programs most needed by Montana citizens and employers and then develop those priority programs.

**Recommendations of the Access to Education Steering Committee**
At least some postsecondary education is critical for individuals to compete in the global economy and earn increasing wages over time. Montana's economic future depends on our ability to reduce the many barriers, financial and others, to postsecondary education in the state. Unfortunately, Montana is lacking the data on which many other states rely to identify, track and eliminate barriers to education. To significantly improve access to education in Montana the committee recommends the:

- State provide additional need-based aid for both traditional and non-traditional students that will significantly help Montanans participate in and complete formal education beyond high school.
- State develop a method to identify, collect, analyze and share existing data and prioritize the need for additional data/research.
- Creation of a comprehensive outreach and empowerment program in Montana, including the creation of an Access-to-Education Coordinating and Advisory Council.

**Recommendations of the Workforce Development Committee**
The state lacks the connections with business that ensure existing and potential Montana industries will have a workforce prepared to meet their needs. The role

**Administration Funding for the Commissioner of Higher Education**

The Commissioner's office is accountable for oversight of a nearly $1 billion per year higher education system. While many aspects of management are delegated to the campuses, the Commissioner's Office is accountable to the Board of Regents, and the Legislature, for the performance of the system. The office accomplishes this with a general fund appropriation of about $1.6 million supporting 17 FTEs.

In addition to the duties traditionally required of the Commissioner's office, the following additional initiatives have been undertaken:

- A set of initiatives to dramatically reduce transferability difficulties for our students. The Regents and the Commissioner have given this a highest priority, partially as a result of the recent performance audit on this subject. This is an inherently system-wide effort that must be managed by the Commissioner's Office using existing resources.
- An initiative to develop comprehensive system-wide data. This will be a significant undertaking in cooperation with other state agencies and the Office of Public Instruction. OPI has received funding for this initiative with the provision that they will work with the Commissioner's Office. Support from the Commissioner's Office will come from existing resources.
- Overseeing $3 million of new equipment purchases needed to support two-year programs training workers in high-demand occupations. The legislature requires this to be allocated competitively and no administration fees will be taken. Both funding allocation of funds and performance accountability will be managed by the Commissioner's Office using existing resources.
- The Governor's Postsecondary Scholarship Program ("Best and Brightest") administration. The administration of this program will require significant support, including all the support for the new advisory council, which will be provided from existing resources.
- Indian Education for All Montanans. Our request for $250,000 to expand accomplishments throughout the system has not been funded, although language in HB2 requires us to report our progress by July 1, 2006. The Commissioner's Office will continue to increase our support for "Indian Education for All" with existing resources.
- Shared Leadership recommendations implementation. A lengthy set of recommendations have been developed by three steering committees to implement the Shared Leadership Initiatives: better access to education, more coordinated distance learning programs, and better workforce training. These recommendations will be implemented during the next biennium with existing resources (see attached executive summary).

# University Costs and Tuition – A Ten-year Perspective.

**What is happening with resident tuition at our public postsecondary institutions?**
During the period 1995–2005, resident undergraduate tuition rose from $1,608 per year to $3,355 per year. This is an average annual increase of 7.6% per year.

**How much of this increase in tuition is due to increased costs and spending?**
About half of the total increase in tuition is due to increased costs of educating students. During the period 1995-2005, the cost of educating one undergraduate student rose from $5,669 to $8,927 per year. This is an annual average increase of 4.6%.

**If, during the past decade, costs increased on average 4.6% per year how can tuition have increased almost twice that much?**
Remember that tuition simply balances the difference between the cost of education and the amount of state support for that education. Ten years ago the state supported $3,977 per resident student, or about 70% of the cost of higher education. In 2005 state support for higher education was $4,122 per student or about 48% of the total costs of that education. Since state funding, in dollars per student, has remained approximately flat in the past decade, students have had to shoulder almost all the cost increase with tuition increases.

**The math isn't obvious. If state support has remained flat and costs have increased 4.6% per year, shouldn't tuition increases be 4.6% per year on average?**
Remember that the cost increases affect the total cost of education, not just the portion paid by students. Take the two years 1994-1996 as an example. The cost of education rose 3.4% per year from $5,540 to $5,924 -- $384 per student. The state support per student remained flat at about $4,045 per student. Students had to pay the difference. Tuition rose from $1,418 to $1,791 -- $373 per student – or an average 12.4% per year.

**What would it take to hold tuition increases to the same rate as cost increases?**
If tuition increases over the past decade had been held to 4.6% per year on average – the rate of per-student cost increases – resident tuition in 2005 would be $2,521 versus the current $3,355. To accomplish this, state support would have to be 57% of the total cost of education compared with its current share of 47%. This 57% share is still significantly less than the 70% share in 1995 so state support could still have decreased, just not as precipitously.

**What about non-residents – don't they pay more than the actual cost of their education and can't they make up the difference?**
There are a number of reasons to encourage out-of-state students to attend Montana universities. Exposure to diversity is an important part of a quality education. From a strictly cost perspective, however, non-residents effectively subsidize resident students. Over the past decade a conscious pricing strategy has non-residents paying about 135% of their actual costs. However, there is a limit to this subsidy because Montana colleges have to compete for out-of-state students. Our campuses closely monitor other state's non-resident tuition rates and we are becoming uncompetitive with other colleges in the region. Remember, we want to maximize <u>total dollars</u> from non-residents, which is a function of both enrollment numbers and tuition rates. Pricing too far above market

might maximize per-student revenues but the decline in enrollment would cause us to lose total funds available to subsidize resident rates.

In 2005, non-residents contributed approximately $20 million to lower resident tuition. Without this "subsidy," resident tuition would have been about $800 (25%) higher this year.

**What about this next biennium – what is causing the average 7.9% tuition increase even though the state is increasing funding from the last biennium?**
Again, remember that as the cost of educating students increases it can only be funded through three sources: state general fund, resident student tuition increases, and increased subsidy from non-resident student tuition increases. In past years, the system has been able to soften the tuition increase for resident students by significantly increasing non-resident tuition. This year, for the first time in many years, the system is proposing more modest non-resident increases due to the borderline competitiveness of our non-resident tuition levels.

The cost to operate campuses of the university system and educate students will increase from $293 million in FY05 to $315 million in FY06 and $332 million in FY07. This biennial increase of approximately $60 million is the result of numerous factors including:

- Annualization of FY05 salary increases - $3.3 million
- Other salary costs (increased retirement contributions, Workers' Comp., retirement payouts, etc.) - $5.3 million
- State and local utility increases - $3.4 million
- Fixed cost increases (paid to state agencies) – $2.5 million
- Inflation and service increases (library, bldg. materials, etc.) - $6.1 million
- FY06-07 Pay Plan (HB447) - $27.7 million
- Investments in academic quality, student services, facilities - $12.5 million

In some cases the state funding covers a portion of these increases and in some cases the state provides no funding. As a result, student tuition must cover the costs that are not covered by state funding. For example, the state general fund appropriation in HB447 was only $9.6 million of the $27.7 needed to implement the statewide pay plan for the campuses. Student tuition must cover the remaining $18.4 million to implement the pay plan. Because the state budget process only provided minimal inflation for natural gas, student tuition must cover approximately $2.6 million of the state and local utility increases next biennium. In total, student tuition is providing the funding for approximately $35 million of the $60 million in increased costs for the university campuses in the FY06-07 biennium. A tuition increase that averages 7.9% each year is required to raise $35 million over the biennium.

**What about the additional financial aid being appropriated?**
The increase in student financial assistance is welcome but only partially mitigates the impact on students and their families. The combination of Montana Higher Education Grants and the Governor's Postsecondary Scholarship Program will provide $3.5 million in additional scholarships. This will require students to pay a net additional $31.5 million in the next biennium. Amendments are proposed in the Senate Finance and Claims Committee to reduce the scholarship program by $1.515 million. This would require students to pay a net additional $33.5 million in the next biennium.