

Why Education?

Individual Empowerment



Societal Empowerment

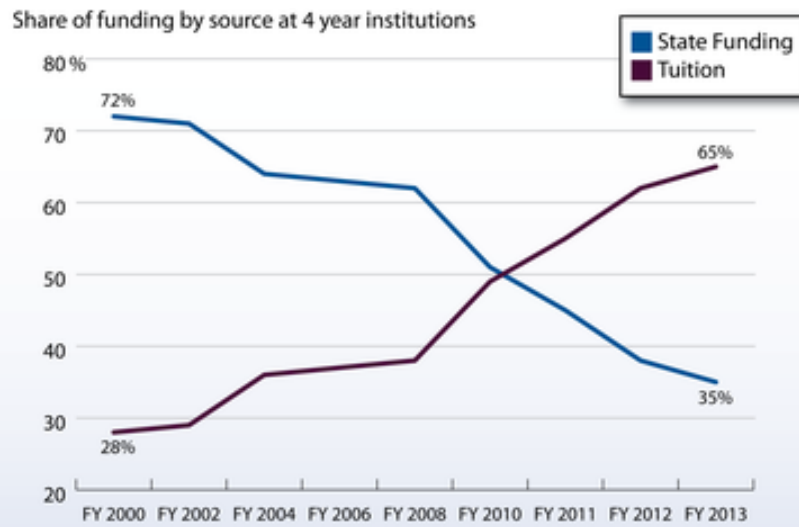


Workforce / Economic
Development

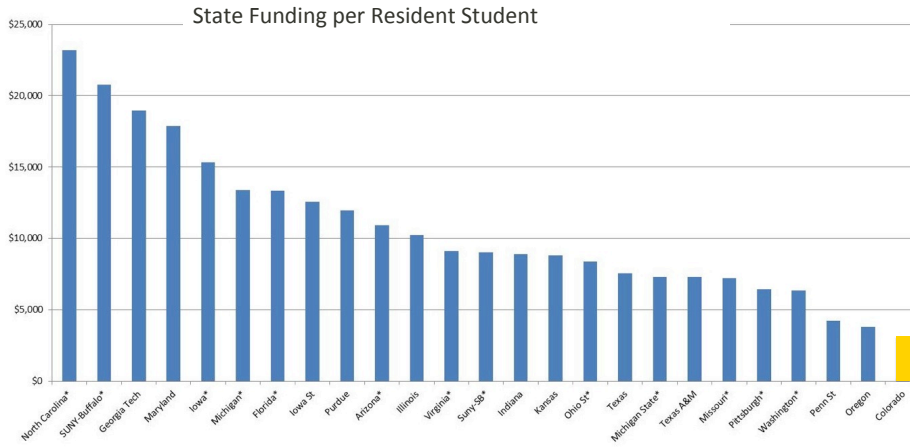


funding

State Funding vs. Tuition



Funding Models



Kelly Fox, CFO CU Boulder

public will

Don't Buy The Hype, College Education Is Not An Investment

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By George Leef

Hardly a day goes by without the publication of articles on the plight of recent college graduates. Large numbers are either unemployed or employed in jobs that don't call for any academic preparation. Many are struggling with the burden of their college loans.



(Photo credit: 401(K) 2013)

352

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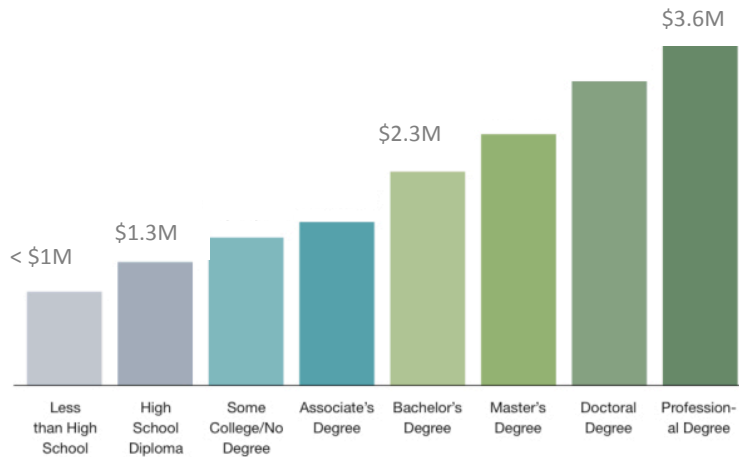
reddit

In

educational value

personal outcomes of education

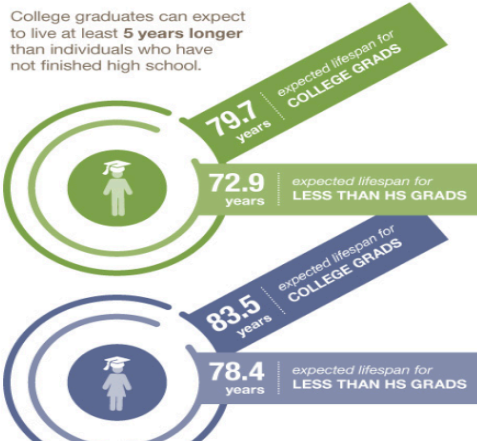
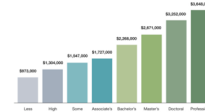
- More income



Center for Workforce & Education, 2011

personal outcomes of education

- More income
- A longer life

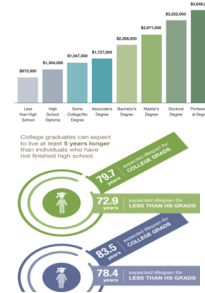
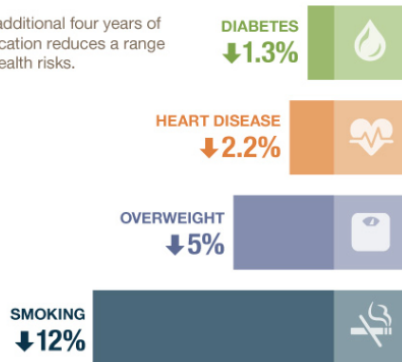


RW Johnson Foundation, 2012

personal outcomes of education

- More income
- A longer life
- A healthier life

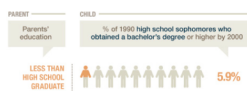
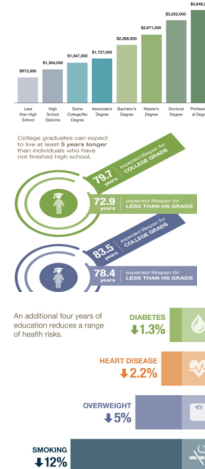
An additional four years of education reduces a range of health risks.



RW Johnson Foundation, 2012

personal outcomes of education

- More income
- A longer life
- A healthier life
- More socially engaged
- Better life for kids

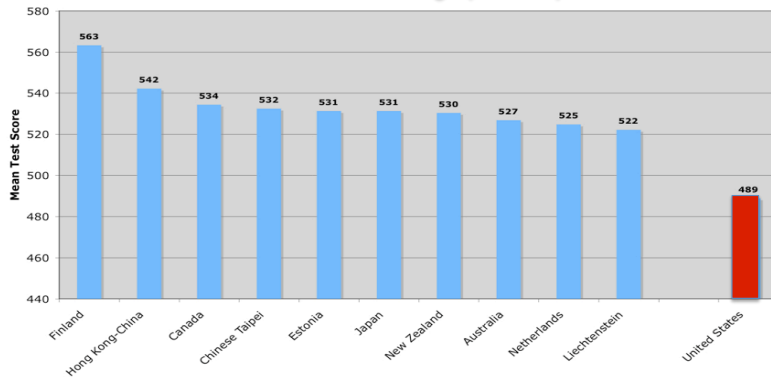


Grand Challenges in US Education

Better education

U.S. ranks:
21 out of 30 in science
25 out of 30 in math
- PISA 2006

International Rankings (science)

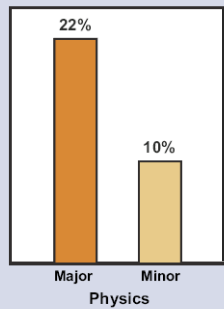


Grand Challenges in US Education

Better education
More and better teachers

2/3 Physics Out of Field
Less than 50% stay

Physics Teachers with degrees in:

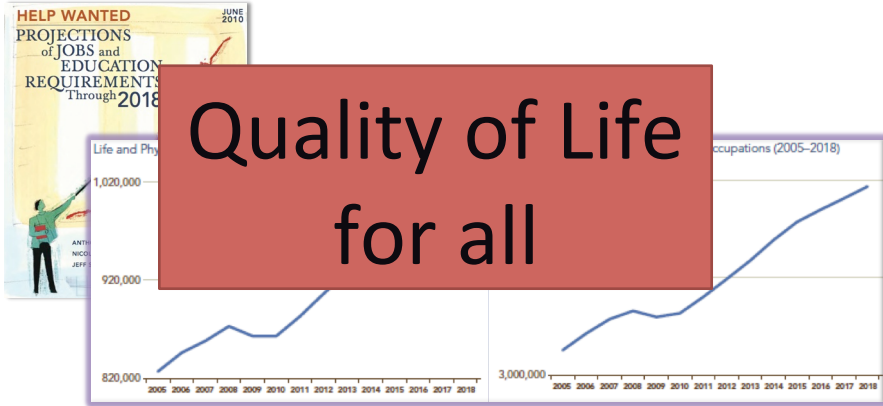


AIP Statistical Research Center

Grand Challenges in US Education

Better education
More and better teachers
More and better STEM grads

1 Million more STEM grads
needed by 2018
and growing

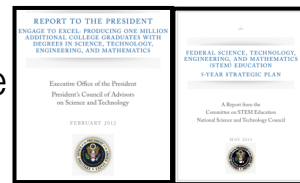


A Era of Significant Attention:



the National Academies

the White House



Professional Organizations Societies




State and Regional Efforts



helping shape the state

Colorado Talent for an Innovation Economy
Powered by STEM



Colorado will be the most innovative state in the country in growing a local talent pipeline by ensuring all learners have the STEM education and experiences needed to succeed in an innovation economy.

THE COLORADO EDUCATION INITIATIVE

Physics Education Research

- **APS: 99.2 RESEARCH IN PHYSICS EDUCATION**

(Adopted by the Council, 21 May 1999)

In recent years, physics education research has emerged as a topic of research within physics departments. ... The APS applauds and supports the acceptance in physics departments of research in physics education.

Earliest Known Example of a Schoolroom from
Sumer,

circa 3000 BCE



Typical Classroom- today



MIT Studio Physics- John W. Belcher*



Active classes make active students (on task)

* <http://www-caes.mit.edu/research/teal/index.ht>

Feedback:

How is this structure for the course?

Questions / comments / suggestions