Open Educational Resources Backgrounder at Otero Junior College

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These slides can be found at https://poritz.net/j/share/OERBGatOJC

Wait, What Are We Talking About? 1

HB18-1331, **Higher Education Open Educational Resources**, passed by the Colorado General Assembly and signed by Governor Hickenlooper on 30 April 2018, defined OER here:

> (6) "OPEN EDUCATIONAL RESOURCES" MEANS HIGH-QUALITY TEACHING, LEARNING, AND RESEARCH RESOURCES THAT RESIDE IN THE PUBLIC DOMAIN OR HAVE BEEN RELEASED UNDER AN INTELLECTUAL PROPERTY LICENSE THAT PERMITS FREE USE OR REPURPOSING BY OTHERS AND MAY INCLUDE OTHER RESOURCES THAT ARE LEGALLY AVAILABLE AND AVAILABLE TO STUDENTS FOR FREE OR VERY LOW COST. OPEN EDUCATIONAL RESOURCES MAY INCLUDE FULL COURSES, COURSE MATERIALS, MODULES, TEXTBOOKS, FACULTY-CREATED CONTENT, STREAMING VIDEOS, EXAMS, SOFTWARE, AND OTHER TOOLS, MATERIALS, OR TECHNIQUES USED TO SUPPORT ACCESS TO KNOWLEDGE.[1]

[1] Closed based on the William and Flora Hewlett Foundation's definition: *"OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge."*

Wait, What Are We Talking About? 2

A basic place to start with this is

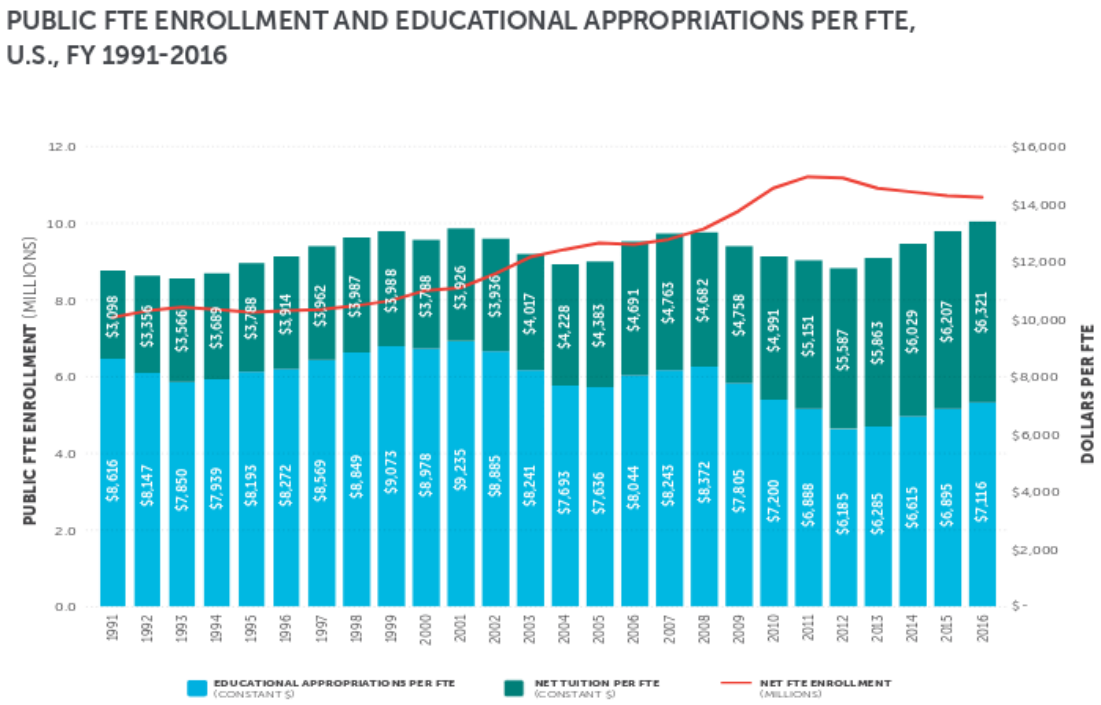
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So the term "OER" include **free textbooks**.

[We'll come back to some other subtleties later.]

Economic Issues 1, Whole US

Why would it be good if textbooks were free? Nothing else in life is[2]. The thing is, public education in the US **is no longer really "public."**

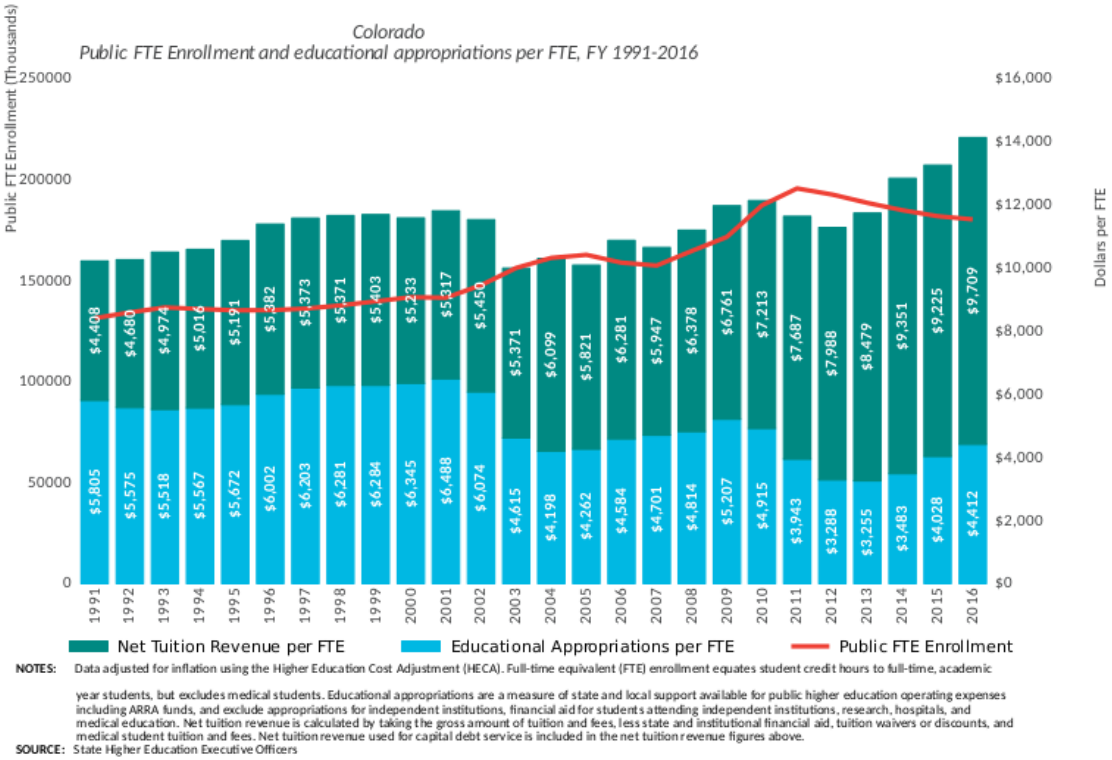


SOURCE: State Higher Education Executive Officers

[2] This view goes with the acronym "TANSTAAFL," or "There ain't no such thing as a free lunch," in the words of Robert Heinlein (1966) and Milton Friedman *[ugh]* (1975).

Economic Issues 2, Colorado

Specifically, in Colorado:

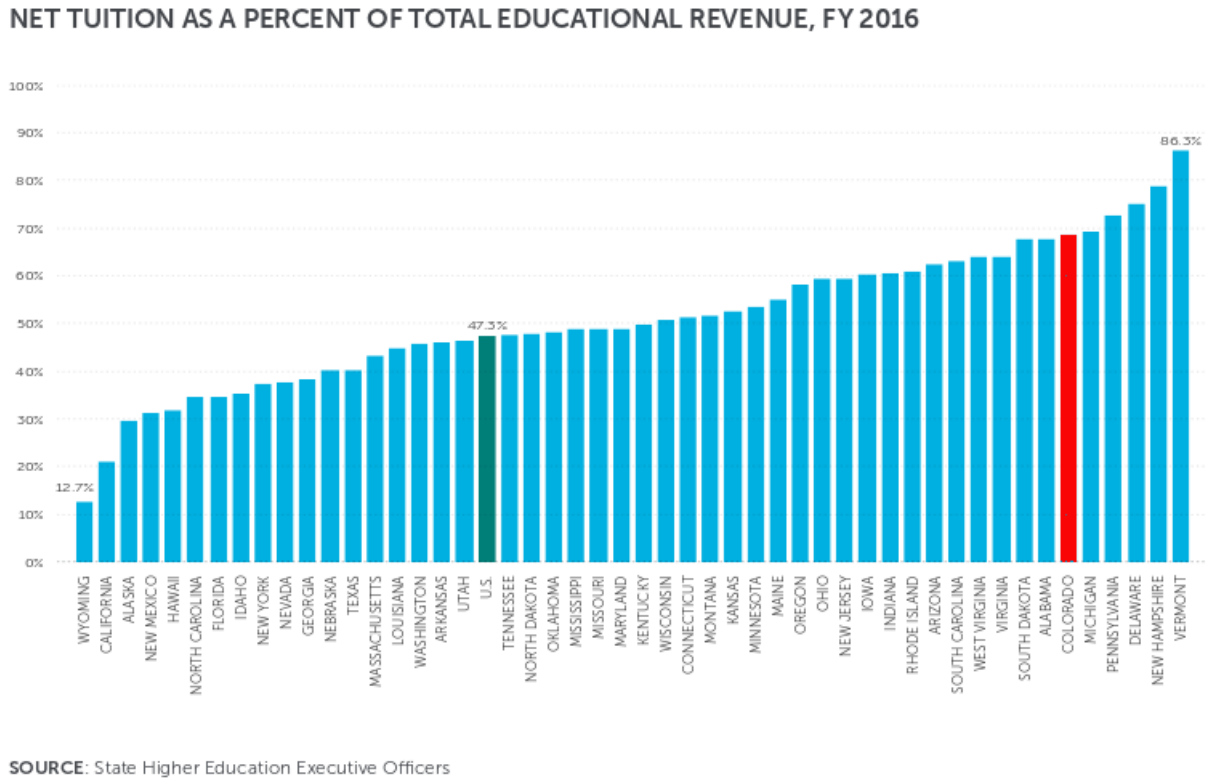


NOTES: Data adjusted for inflation using the Higher Education Cost Adjustment (HECA). Full-time equivalent (FTE) enrollment equates student credit hours to full-time, academic year students, but excludes medical students. Educational appropriations are a measure of state and local support available for public higher education operating expenses including ARRA funds, and exclude appropriations for independent institutions, financial aid for students attending independent institutions, research, hospitals, and medical education. Net tuition revenue is calculated by taking the gross amount of tuition and fees, less state and institutional financial aid, tuition waivers or discounts, and medical student tuition and fees. Net tuition revenue used for capital debt service is included in the net tuition revenue figures above.

SOURCE: State Higher Education Executive Officers

Economic Issues 3, Public *vs* Private Funding, By State

Yes, it's worse in Colorado than the rest of the nation:



SOURCE: State Higher Education Executive Officers

Economic Issues 4, Student Debt

Because of the privatization of this public good, students now take on an enormous amount of debt:

total student debt in the U.S. is around $1.45 trillion.

Some examples in Colorado:

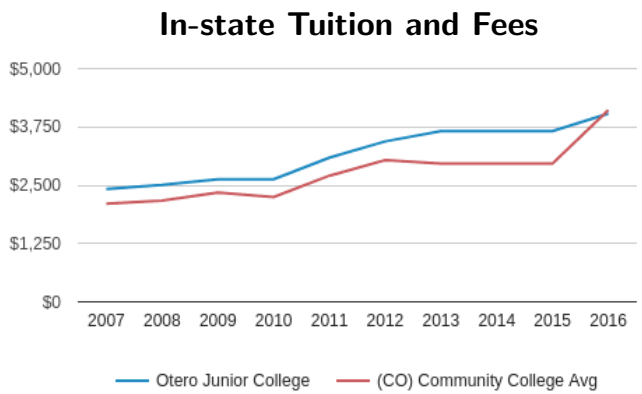
Institution	Avg Debt, 2014 Grads
CSU-Pueblo	$29,914
MSU, Denver	$28,468
Colorado College	$19,756
University of Denver	$29,050
All private[non-profit] and public 4-years in CO	$25,064

2014 is most recent complete data available

Source: https://ticas.org/posd/state-state-data-2015#

Economic Issues 5, Specifics for OJC

Some specifics for OJC and CCCS:



At Otero Junior College, 1,007 undergraduate students (71% of total 1,410 students) have received financial aid including grants, scholarships, and/or federal student loans. The average amount of aid received is $5,433.

Financial Aid Statistics (All Undergraduate Students) at Otero Junior College

Type of Aid	Number Receiving Aid	Percent Receiving Aid	Total Amount of Aid Received	Average Amount of Aid Received
Grant or Scholarship	1,007	71%	$5,471,102	$5,433
Pell Grants	598	42%	$3,138,484	$5,248
Federal Student Loan	331	23%	$1,500,882	$4,534

Median debt for graduates: $9,000 ($13,000 for CCCS)

... for students leaving without a degree: $4,500 ($5,139 for CCCS)

[Some of the above from ojc.edu and some from IPEDs data via communitycollegereview.com.]

Economic Issues 5, Categories of Costs to Students

Costs students bear include

- tuition and fees
- room and board
- personal expenses
- transportation
- books, software, *etc.*

As the first of these has costs has increased rapidly, due to the shift in the cost burden from the state to the student, it has had the predictable consequence for the others.

In particular, how many of your students are **food** or **housing insecure**? Does OJC track this?

[Please Watch Goldrick-Rab's video Campus Matters: Paying the Price.]

Economic Issues 6, #RealCollege

We do not know the answer to this question at CSU-Pueblo!

For the combined student body from a sample of institutions of higher education around the US, this question has been investigated by Sara Goldrick-Rab [formerly of the Wisconsin HOPE lab and now at Temple University] and her team, as part of what they call the #RealCollege Survey.

CSU-Pueblo is participating in the #RealCollege Survey in the fall of 2018, so we will soon know the actual numbers for our campus.



Economic Issues 7, Food and Housing Insecurity in the US

The #RealCollege Survey found[3] in 2017 that

- 56% of community college students [36% of university students] were food insecure in the 30 days before taking the survey,
- 51% of community college students [36% of university students] were housing insecure in the last year, and
- 12% of community college students [9% of university students] were homeless at some point in that year.

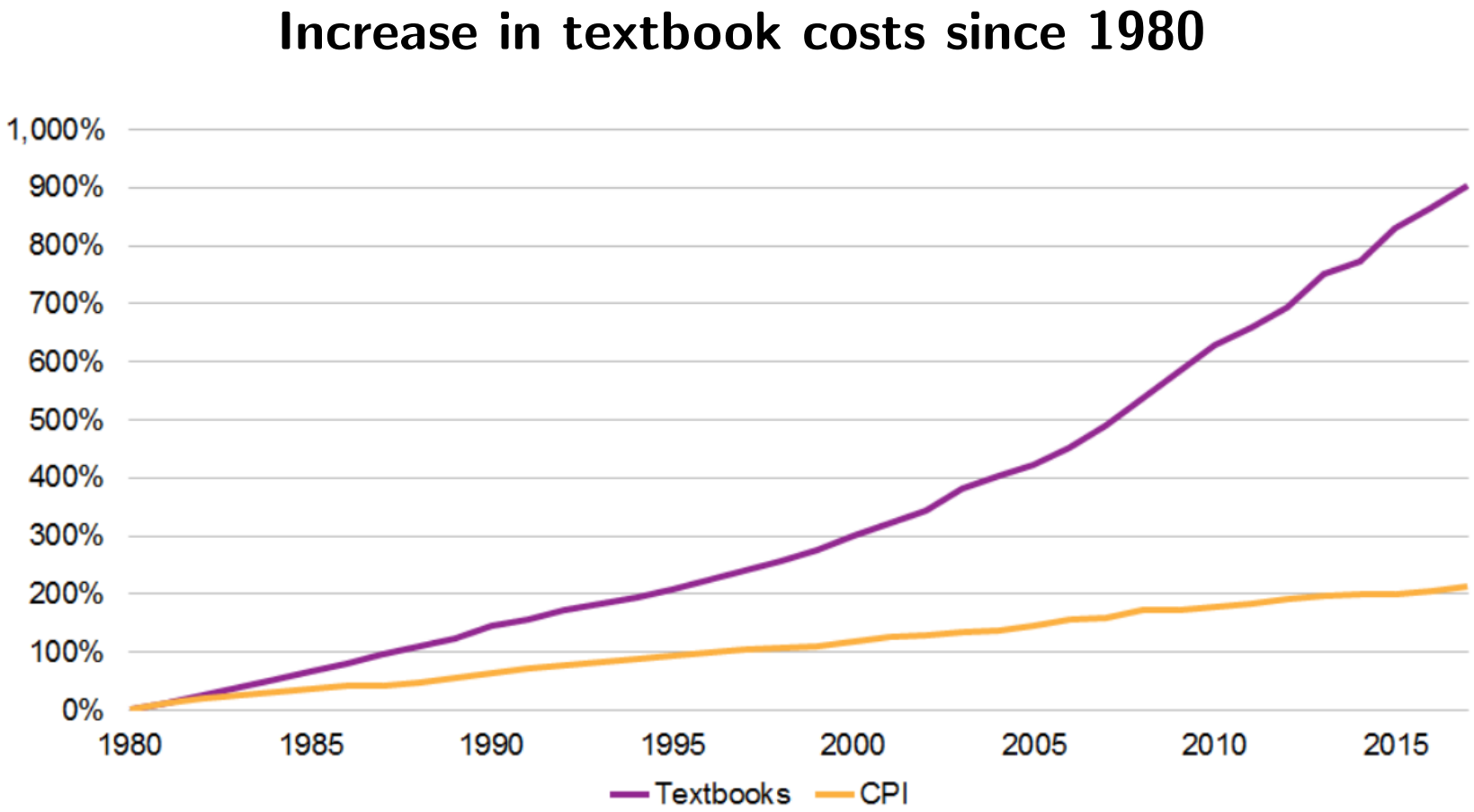
Now ask yourself: if you were a student in debt, [sometimes or often] hungry, and concerned about keeping a roof over your head ... where would your economic priorities be?

This is all very grim, but maybe mass production has reduced costs, so shouldn't textbooks be nearly free – maybe that's why we talked about *free textbooks* above.

[3] *Still Hungry and Homeless in College*, Goldrick-Rab, Richardson, Schneider, Hernandez, and Cady, 2018, on the web here.

Economic Issues 8, Textbook Costs 1

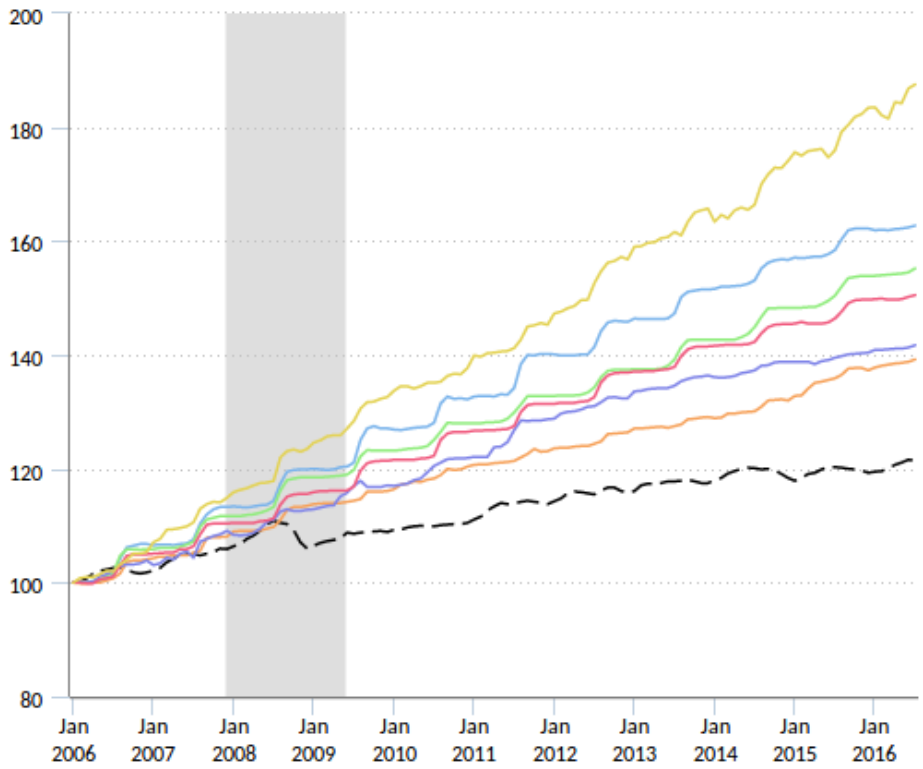
Unfortunately, exactly the opposite is true:



Source: *U.S. Bureau of Labor Statistics*

Economic Issues 9, Textbook Costs 2

Consumer price indices for tuition and school-related items, not seasonally adjusted, January 2006-July 2016



January 2006 = 100

Source: *U.S. Bureau of Labor Statistics*

https://www.bls.gov/opub/ted/2016/college-tuition-and-fees-increase-63-percent-since-january-2006.htm

Side Discussion: Market Failure In My Office 1

Books sent to me, for free, without my asking, by textbook publishers [thrown under a side table]:



Side Discussion: Market Failure In My Office 2

Result of a short visit to `Amazon.com` (which is usually significantly cheaper than our campus bookstore) to price just a few of those books:



Economic Issues 9.5, Why Are Textbook Costs Different?

Textbooks are a perfect example of a market failure in that the consumer who pays the price for the product is not the person who chooses which product to purchase!

Textbook choice is in the hands of the individual professor (or, sometimes, a group of professors when a course will be taught in several sections) – this is actually an important part of the faculty's academic freedom in the classroom and we should be very cautious about stepping on those toes.

Commercial publishers have an incentive to attract professors to their textbooks, with free instructor's editions, test banks, homework answer books, *etc.*, but little incentive to make prices increase in a reasonable way.

E.g., while there have probably been a number of improvements in the understanding of calculus and how to teach it since the first textbook [by Maria Gaetana Agnesi] was published in 1748, it is hard to believe the improvements in exposition since 1980 truly warrant a 900% increase in price.

Economic Issues 10, Consequences for Students

Studies[4] have shown that, as a result of these economic realities, students

- make decisions about which courses to take based on the costs of the textbooks;
- take fewer courses because of expensive textbooks;
- do not buy even required textbooks, because of cost, and therefore learn less, do more poorly, and drop out more frequently; and
- take longer to complete degrees because of the obstacle of textbook cost.

A particularly exciting recent study[5] found that **DFW rates went down by one-third among minority and Pell-eligible students in gateway courses which switched from commercial textbooks to OER**.

[4] See references in *Report to the Joint Budget Committee and The Education Committees of the General Assembly – Open Educational Resources in Colorado*, Brown-Sica *et al.*, 2017, on the web here.

[5] *The Impact of Open Educational Resources on Various Student Success Metrics*, Colvard, Watson, and Park, **International Journal of Teaching and Learning in Higher Education** (2018), on the web here.

Economic Issues 11, Conclusion

In summary:

- Harsh public policies have turned higher education from a public to a private good, resulting in a sky-rocketing cost to students.
- Students are in debt, and many are hungry and not confident in their housing situation.
- Textbooks costs are rising **much faster** than essentially all other consumer goods, because of a broken feedback loop in this market.
- As a result, students are learning less, doing less well, dropping out more, and taking longer to finish degrees.
- Switching to OER has large, immediate gains for student success, particular among underrepresented groups.

Commercial Textbooks' Legal Power: Copyright

Article I, Section 8, Clause 8. the *Copyright Clause*, of the US Constitution, gives Congress the power

> *"To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."*

This *exclusive Right* includes: performance, public display, copying, distribution, and creation of derivative works. Copyright immediately accrues to any work of original expression fixed in a tangible medium.

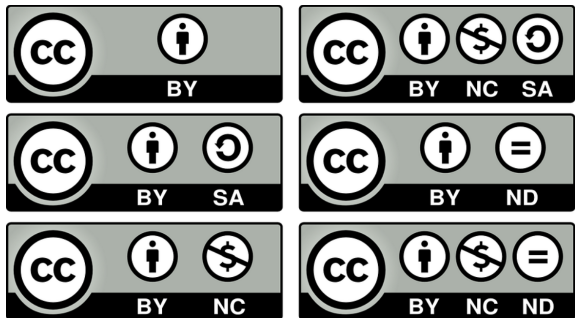
See my Copyright Cheat Sheet For University Faculty for one academic's[6] explanation of many aspects of copyright law.

The *limited Times* have been changed – extended! – again and again by Congress. Currently in the US, copyrights last for the life of the author plus 70 years ... but there are many details to consider, including exceptions such as *fair use*.

[6] Not a lawyer!

An Ingenious Response: Creative Commons Licenses

The way to bend copyright law to the purposes of the scholarly [and artistic] life is to release works with a Creative Commons Licenses:[7]



Educational resources released with a CC license – well, **not** those two licenses with "ND" – are open to REPURPOSING BY OTHERS, in the words of HB18-1331, and therefore are **Open Educational Resources** [**OER**].

OER can be customized, localized, adapted to an instructor's own way of teaching or a department's goals, unlike [commercial] textbooks under traditional copyright. This encourages better, more innovative teaching!

Open Educational Practices [OEP] are appearing in the OER world.

[7] see https://creativecommons.org

Where Are OER? Some Are In Repositories

Scholars around the world are constantly producing a large variety of OER, which can be found (or lost) in places like:

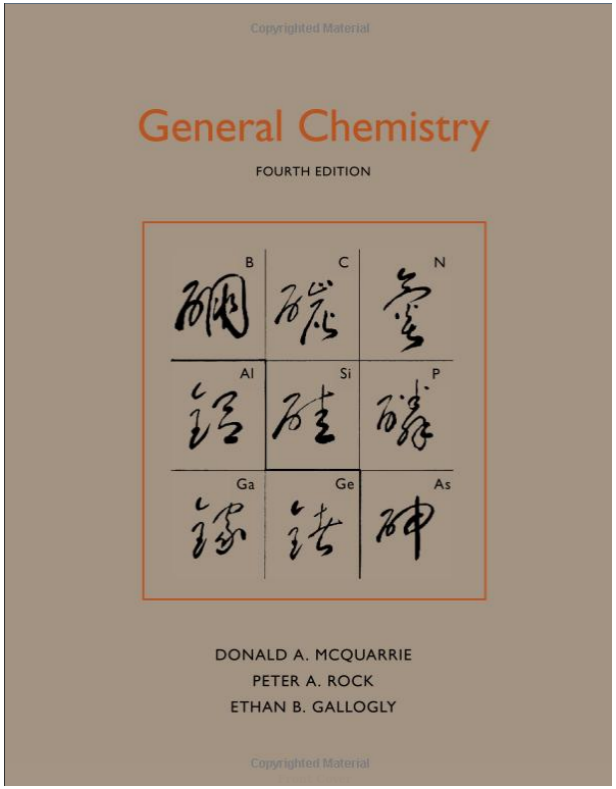
- web pages
  - → for some individual's personal work, *e.g.*, http://www.poritz.net/jonathan/share/
  - → for a particular OER *e.g.*, http://www.introtoie.com/
- repositories, including those run by
  - ⇒ universities, *e.g.*, https://www.csupueblo.edu/library/services/faculty-support/scholarship.html
  - ⇒ disciplinary organizations, *e.g.*, https://aimath.org/textbooks/
  - ⇒ OER-promoting NGOs, *e.g.*, https://openstax.org/, https://rebus.community/, https://open.umn.edu/opentextbooks/, *etc.*
  - ⇒ OER-promoting state offices, *e.g.*, https://www.floridashines.org/orange-grove

Where Are OER? Or Just Search

There are some great search engines for OER, including

- ⇝ OER Commons
- ⇝ Merlot
- ⇝ Creative Commons Search [or the nearly ready, much improved Creative Commons Search [in Beta]
- ⇝ The CDHE page "OER in Colorado" or it's OER Resources sub-page

Where Are OER? What If They Were in Classrooms? 1



F2016 at CSUP:

Chem 121

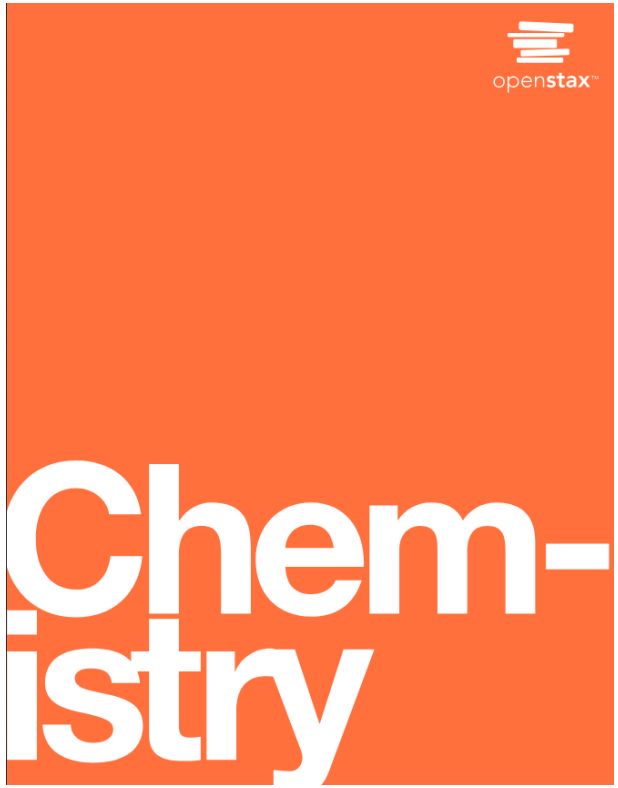
[required text]

$\leftarrow \$108 \times 160 \text{students}$

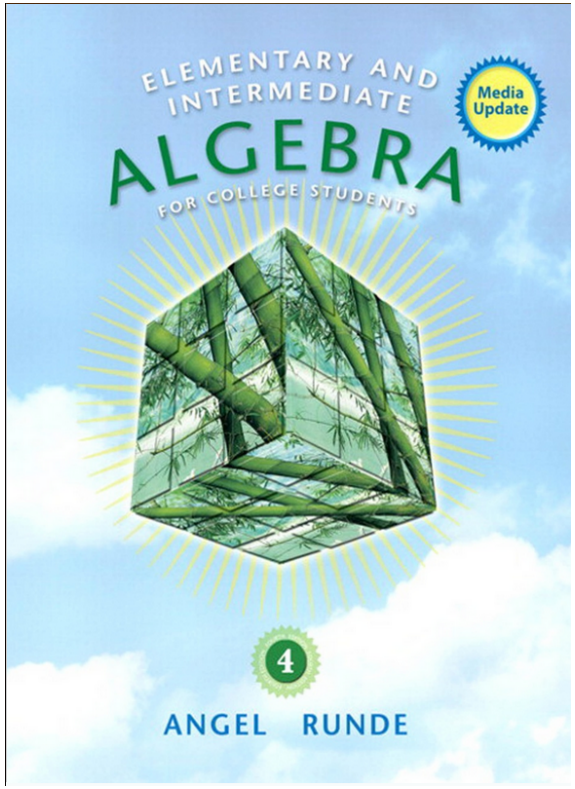
$= \mathbf{\$17{,}280}$

[OpenStax alternative]

$\$0 \rightarrow$



Where Are OER? What If They Were in Classrooms? 2



F2016 at CSUP:

Math 121

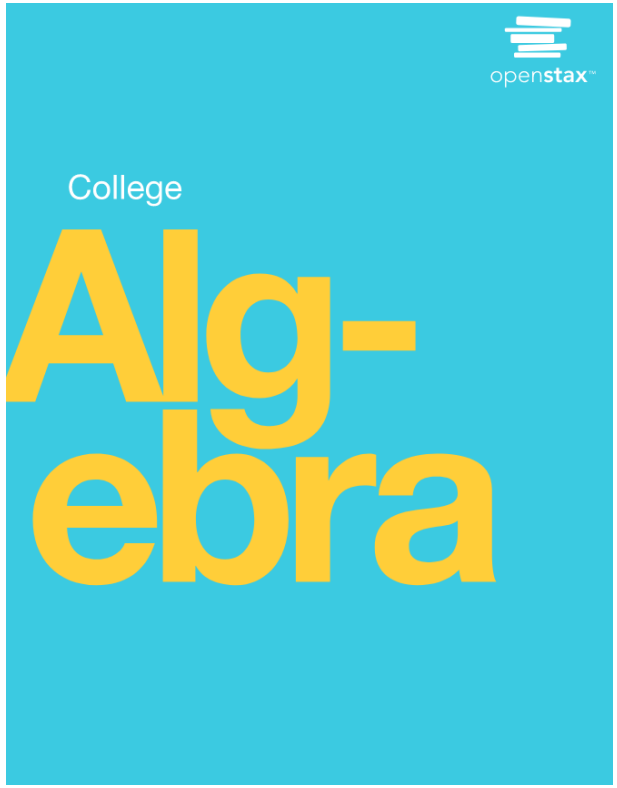
[required text]

$\leftarrow$**\$**260$\times$149students

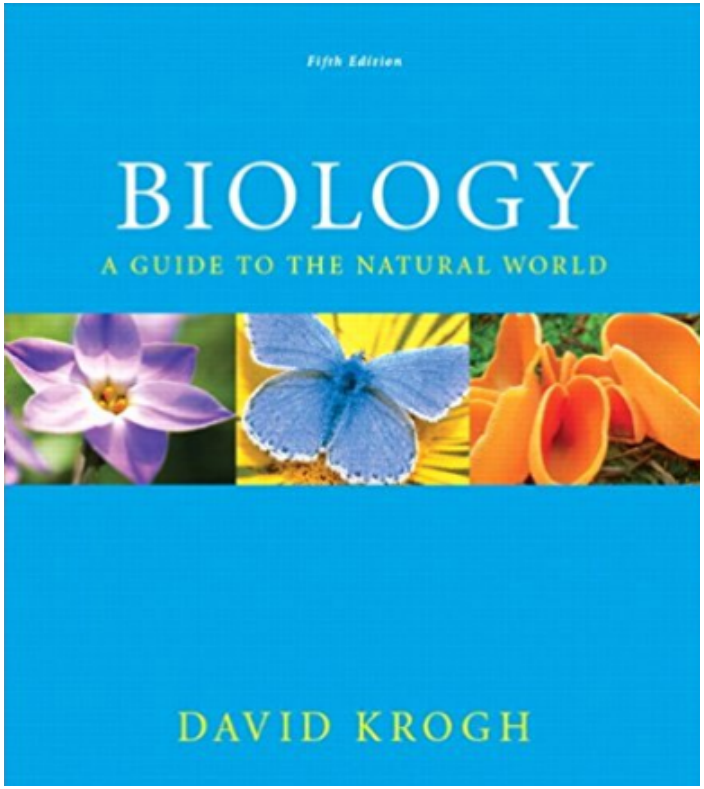
$=$ **\$38,777**

[OpenStax alternative]

\$0 $\rightarrow$



Where Are OER? What If They Were in Classrooms? 3



F2016 at CSUP:

Bio 100

[required text]

$\leftarrow \$222 \times 142 \text{students}$

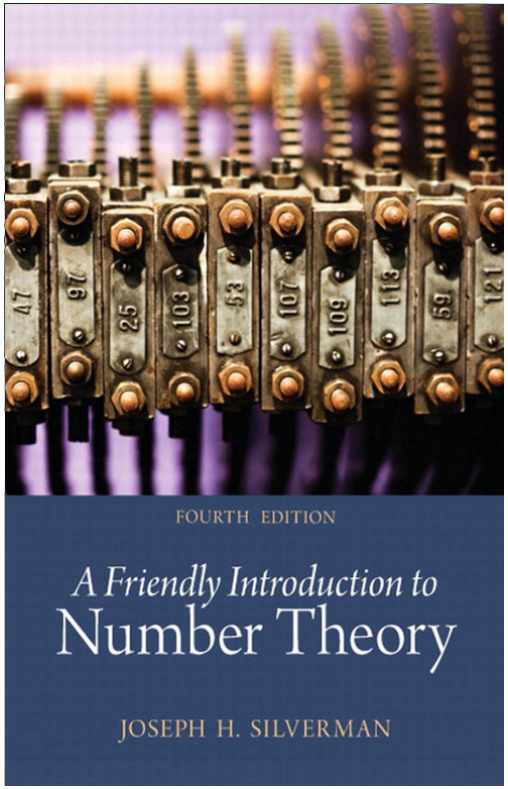
$= \mathbf{\$31{,}594}$

[OpenStax alternative]

$\$0 \rightarrow$



Where Are OER? What If They Were in Classrooms? 4



S2015 at CSUP:

Math 319

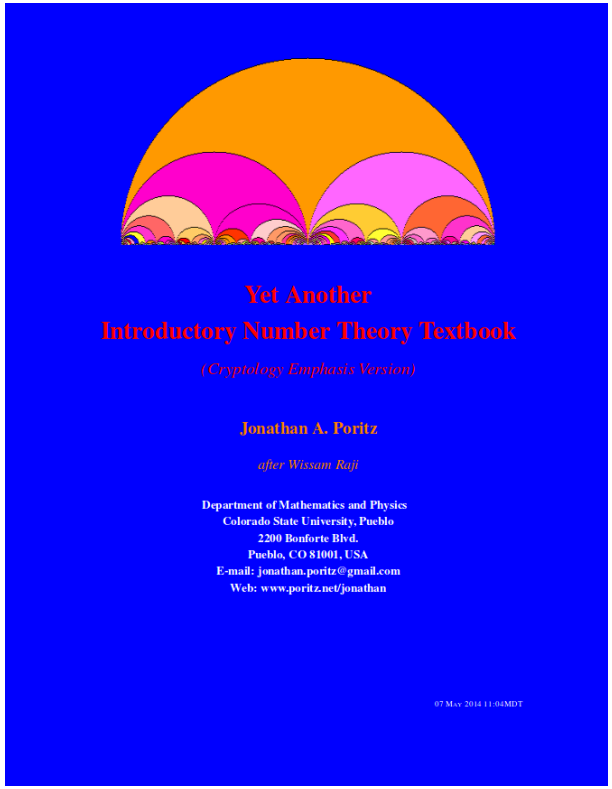
[required text]

←**$**109 × 10students

= **$1,090**

[local alternative]

$0 →



How Good Are OER? Perception, Reviews, and the ADA

The short answer is: **as good as commercial textbooks, if not better.**
Some details:

- Studies show no decrease in student performance with OER.
- Studies show students enroll in more credits and complete more quickly when they have access to courses that use OER.
- Faculty perceptions of OER are influenced by a culture of "Free? Don't you get what you pay for?"
- Some repositories [notably, the Open Textbook Network's Open Textbook Library] have peer reviews of their texts, which are very useful.
- There is a lag in disability accommodation in some [many?] OER, it must be admitted.

OER, Across the US

Some programs at the federal level have started to acknowledge the use of OER.

For example, it seems that support for the creation of educational materials in the future may be aware of OER, in the sense that they encourage building upon existing OER and releasing any new work as OER.

There is also a [quite modest, considering the size of the whole US] grant program specifically to support OER projects in institutions of higher education. The first grant [of $5million] was awarded to a group in California making (mostly) chemistry textboks, LibreTexts.

Many states, such as NY, GA, FL, OR, CA, *etc.*, have quite advanced [and well-funded] OER programs.

OER, In Colorado

The Colorado General Assembly passed SB17-258 in 2017 and it was signed by Governor Hickenlooper on 3 May 2017. That bill created an Open Educational Resources Council to study the use of OER in Colorado's public institutions of higher education and then to make a proposal for a state program to support OER. [I was on that Council.]

The 2017 Council wrote a long report (available here) which included a detailed proposal that became, with surprisingly few changes, HB18-1331.

Beyond giving the definition of OER with which this presentation started, HB18-1331 creates a new OER Council empowered to promote the use of OER at public institutions of higher education in Colorado. [I'm on this new Council; in fact, I'm its chair.]

The Council will run conferences, build a useful website, and administer a grant program which has $500,000 to disburse in the first year – **please apply!** Much more infomation about these grants is on the CDHE OER site here.

Aside on the Need for OER Grants

But why does money need to be spent on OER, if they are, after all, **free**?

The answer is that while the individual OER are free, it can take a lot of time to re-construct a course around an OER in place of a commercial textbook you used to use[8], and more time to adapt the OER itself to your course, and even more time to create an entire OER from scratch. Since the OER world is competing with all the gee-gaws and doo-dads that commercial publishers provide with their texts (as they, with their other hand, steal your academic freedom), stipends for faculty and staff, or other forms of support which may have a price-tag, can be useful.

One thing to note, however, is that experience in other states has shown that for every dollar spent on a state-level OER program, the aggregate student body in that state saves $4 – quite an impressive ROI!

[8] But maybe no more than it would take to switch to a different commercial text, which you might choose to do or be forced to do by a change of edition.

Questions, Comments, and Contact Info

Questions? Comments?

If any occur to you later, feel free to contact me at
jonathan@poritz.net

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