



BCcampus
Learning. Doing. Leading.

STEM Open Education Project

Melanie Meyers

BCcampus

mmeyers@bccampus.ca

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Land Acknowledgement

Traditional territory of the Secwépemc people

Agenda

- Introduction to BCcampus
- Open Education in B.C.
- Zero Textbook Cost Programs (ZTC)
- OER and Math
- Adopting Open Resources



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Working Together, Learning Together

Our mandate is to provide teaching, learning, educational technology, and open education support to the post-secondary institutions of British Columbia. We accomplish this through collaborative leadership that brings innovative resources and effective expertise together to create awareness, understanding, and adoption of openly available curricular resources.

Ultimately, our goal is to improve student learning.



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- 2003: BCcampus established
- 2012: \$1 million to develop 40 open textbooks
- 2013: \$1 million to develop 20 open textbooks
- 2015: \$525,000 USD from Hewlett Foundation
- 2017: one time grant \$250,000 Ministry of AEST
- 2019: \$3.26 million from Ministry of AEST



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Open Education

Some of our projects....

- Accessibility of open resources
- Tracking adoptions of resources
- Adding resources to our collection
- Improving the findability of OER
- Regional outreach
- Open Education Sustainability
- Open Homework Systems
- Trades OER
- Business OER
- STEM OER
- Health OER
- ABE OER



Photo by [Octavian Dan](#) on [Unsplash](#)

OPEN EDUCATIONAL RESOURCES



techniques materials tools
used for
TEACHING + LEARNING + RESEARCH
SHARED UNDER PUBLIC DOMAIN
OR OPEN LICENSE
FOR RE-USE

creative commons



The Five R's

Retain

The right to make, own, and control copies of the content.

Reuse

The right to use the content in a wide range of ways.

Revise

The right to adapt, adjust, modify, or alter the content itself.

Remix

The right to combine the original or revised content with other material to create something new.

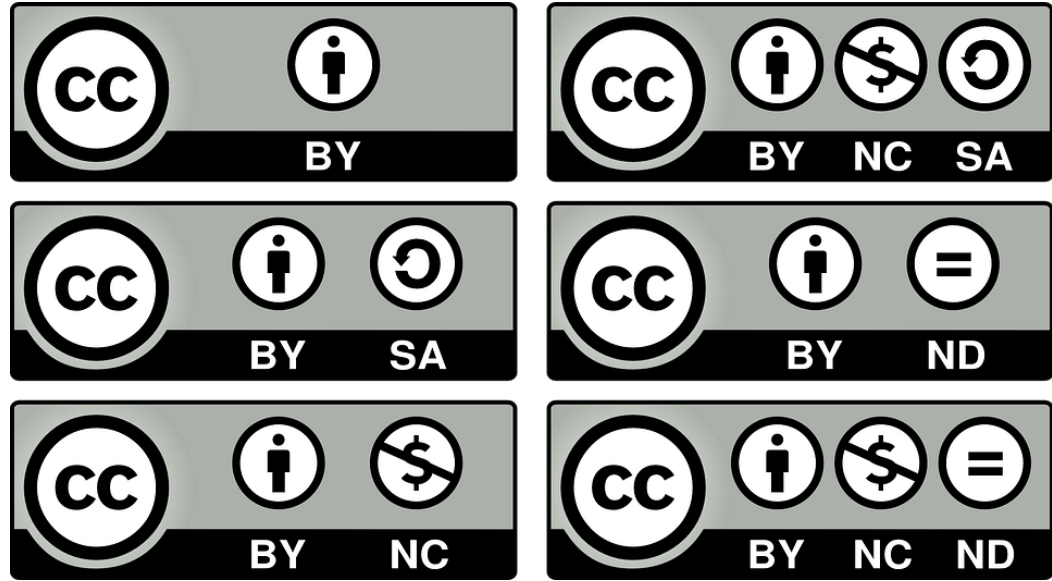
Redistribut e

The right to share copies of the original content, your revisions, or your remixes with others.

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Types of Open Education Practices

- Open Textbooks
- Open Publishing
- Open Pedagogy
- Open Technology



Open Textbooks in B.C.



Top 5 adopting institutions (in order)

1. Douglas College
2. Kwantlen Polytechnic University
3. Langara College
4. University of British Columbia
5. Thompson Rivers University

Student savings

\$18,269,693



B.C. institutions currently adopting Open Textbooks

36



Open Textbook adoptions

The totals for May 1, 2019-April 30, 2020 are:

\$3.8mil
In student savings

602
Open textbook adoptions

Number of B.C. students using Open Textbooks

153,683



Open Textbooks

- Day 1 access to resources
- Flexible formats
- Available in perpetuity
- Learning outcomes are same or better (Ozdemir & Hendricks, 2017)

Explore the Open Textbook Repository opentextbc.ca

Student View

“The best textbooks I have had throughout my program were the open textbooks that I was provided with...two of my instructors who actually wrote those textbooks were among the most passionate, dedicated, and knowledgeable instructors who I had throughout my studies there.”



66

STEM OER

S = 22

T = 7

E = 4

M = 25

BCcampus Environmental Scan of STEM Programs: *Over 45,000 students across 24 institutions/year*

institutions # program adoptions

Biology	16	10
Biochemistry	8	0
Chemistry	12	5
Environmental Studies/Science	14	1
Geography	11	1
Physics	11	9
Science – General	17	4
Computing Science	10	1
GIS	8	0
Graphic Design	6	0
Civil Engineering	7	1
Engineering	15	0
Mathematics – General	9	4



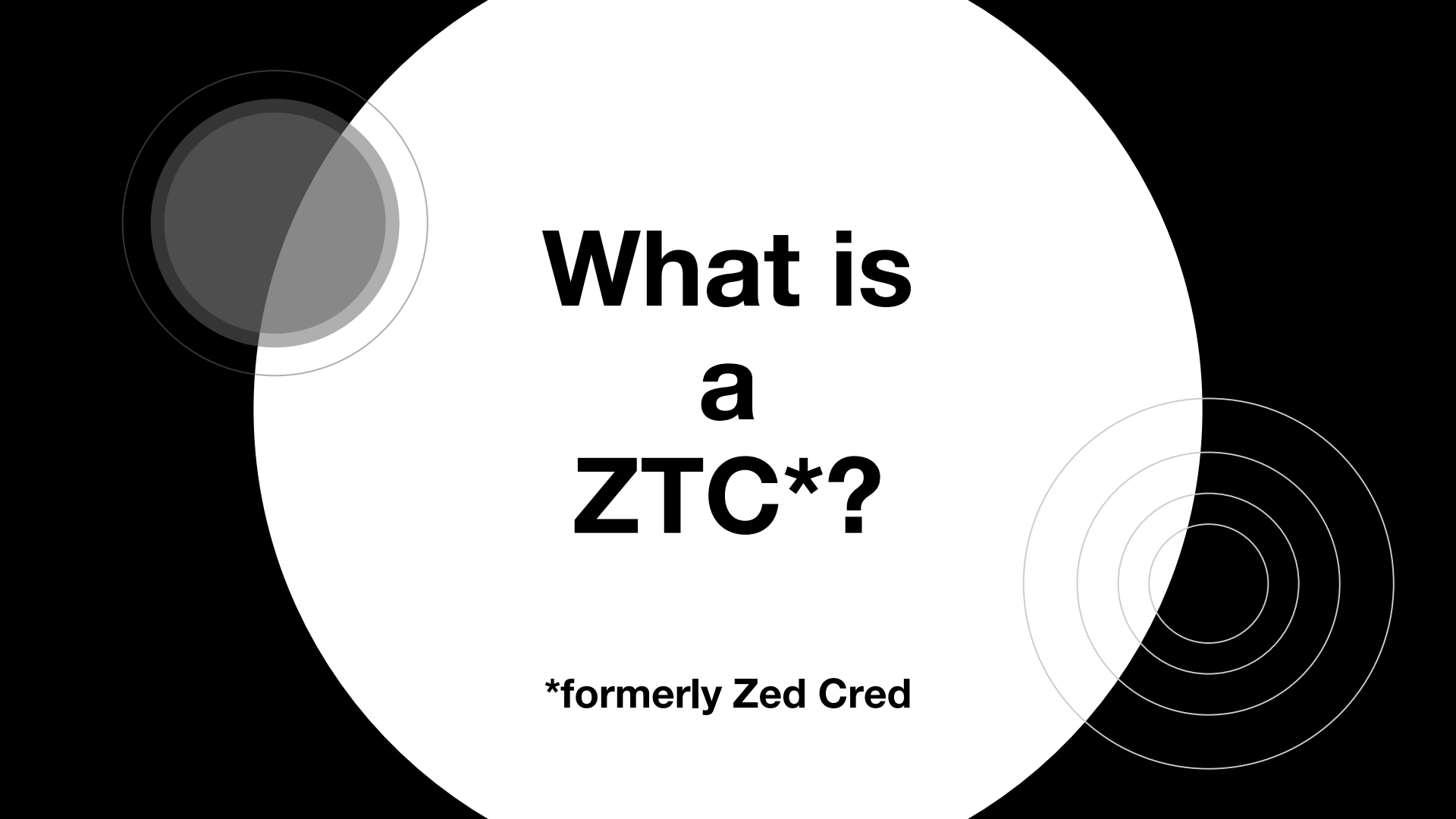
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OER by Discipline Directory

<https://opentextbc.ca/oerdiscipline/part/math-and-stats/>

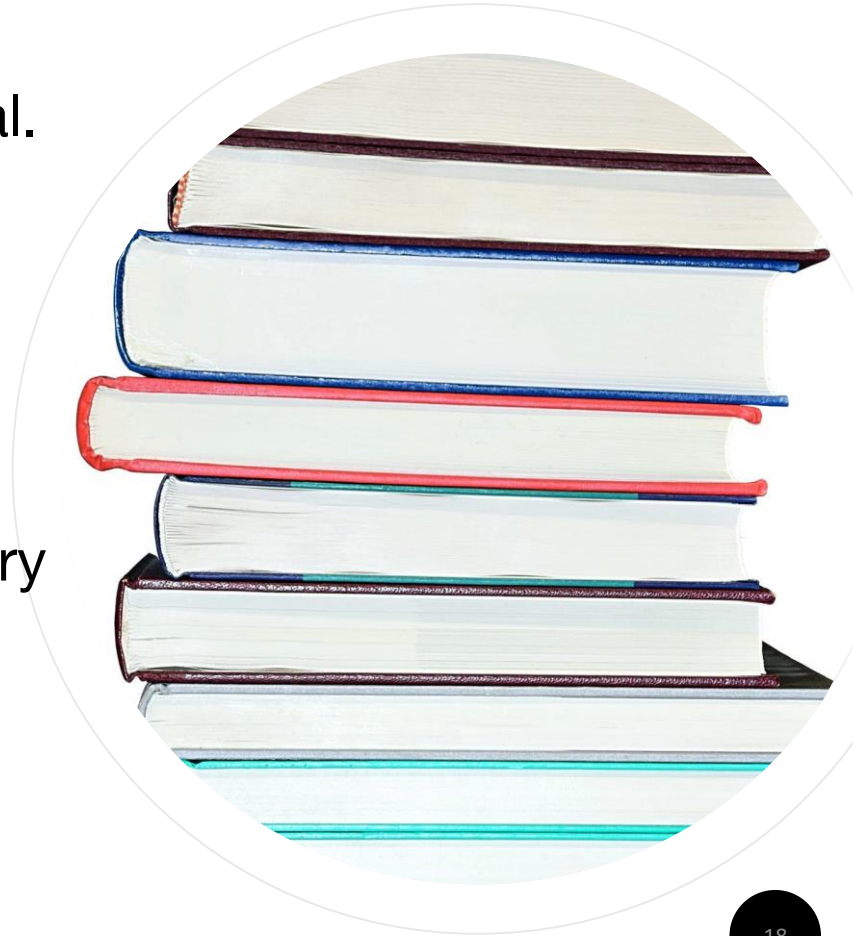
What OER Math projects are you aware of at your institution? What benefits have you seen?



What is a ZTC*?

***formerly Zed Cred**

- Zero-cost for textbook credential.
- Came out of US community colleges as way to limit financial burden on students.
- Utilizes open educational & library resources.



STEM Program OER Projects

- AutoCAD Open Textbook (ZTC in short certificate for Drafting) – VCC
- Developing a pathway for ZTC in Associate of Science
- Conducting a gap analysis for 1st year Engineering courses
- Open Homework systems

More information on the STEM ZTC project:

<https://bccampus.ca/projects/open-education/zed-cred-z-degrees/ztc-open-educational-resources-for-stem/>



What are the gaps you see for OER for
Math?



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How to Adopt or Adapt an Open Textbook

Process

- Find the book in our collection open.bccampus.ca or other repository or integrated search
(i.e. <https://oasis.geneseo.edu/>)
- If changes are needed – you can do that in PressBooks
- Have questions or ideas? Just let us know!
- Once you adopt a book, Report the Adoption to BCcampus and share with your colleagues.
- [Quick Guide Resource for finding and using OER](#)



Notes

- Self-publishing software
- Formats - Word, Kindle, PDF, ePUB, Web
- Editable
- Printable
- Add interactive elements - YouTube, H5P
- Free for BC faculty



What are the barriers to adoption?



OER & PIVOT Online

COVID-19

Using OER to re-open education



Saves instructors time and money:

- No need to gain permission—or pay—to use, print, distribute OER
- Easy to circulate among an unlimited number of students



Cash-strapped students save money:

- Online versions are free to students (and instructors)
- No access code needed
- No expiration date



Ideal for working from home:

- OER is online
- Printed options are available too



Grants freedom in a time of constraints:

- May use without fear of copyright infringement
- Can change content to suit student needs, teaching method, curriculum



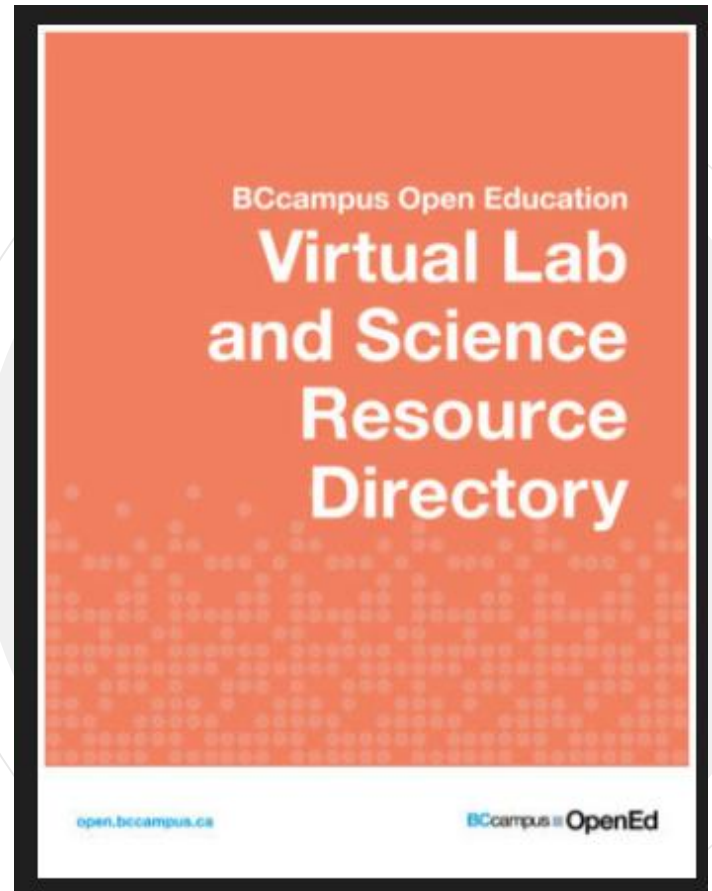
Fights isolation:

- Everyone can be included for content additions, updates, improvements
- OER can be used as an agent of change for diversity, equity, inclusion

Resource Directory

The BCcampus Open Education *Virtual Lab and Science Resource Directory* lists free science resources designed to support remote science education. This directory is updated as new resources are identified.

<https://opentextbc.ca/virtualscienceresources/>



BCcampus Webinars/Drop-ins



List of upcoming events:

<https://bccampus.ca/events/>

Past event recordings and resources

<https://bccampus.ca/about-us/reports-and-reviews/>

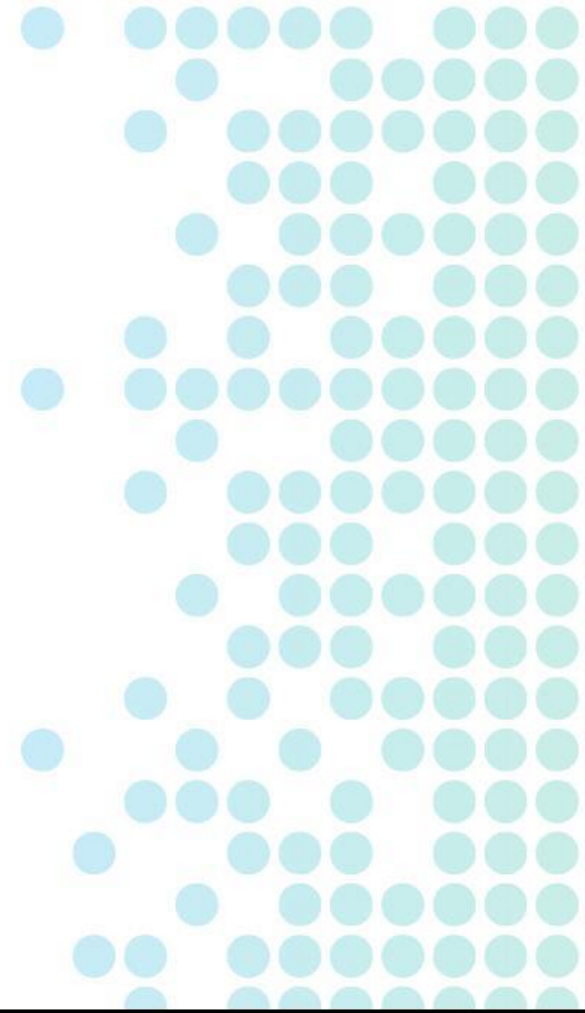
What successes have you seen in the pivot online? Does OER play a role?



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Questions?



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