

# MCC Open Educational Resources Showcase



**ACADEMIC AFFAIRS CONVOCATION**  
**JANUARY 15, 2020**

# Agenda



- Introduction
- OER presentations by faculty who received OER Mini-Grants in Spring 2019:
  - **English**
  - **Mathematics**
  - **Natural Sciences (Physics, Biology)**
- Overview of OER Support provided by **eLearning**
- Overview of OER Support provided by **MCC Library**
- Panel Discussion (time permitting)

# What are Open Educational Resources?



- Open does NOT mean “Free”
- Most content on the internet is already free
- “Open” = Free + Permissions

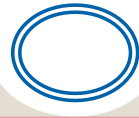


# What are Open Educational Resources?



- “Open Educational Resources (OER) are any type of educational materials that are **in the public domain** or introduced with **an open license**. The nature of these open materials means that anyone can legally and freely copy, use, adapt, and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation.” **UNESCO**
- Open Education Resources are teaching, learning, and research materials in any medium- digital or otherwise – that reside **in the public domain** or have been released under **an open license** that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions.” **Hewlett Foundation**

# The 5R Activities of OER



**Retain**

**Make and own a copy**

**Reuse**

**Use in a wide range of ways**

**Revise**

**Adapt, modify, and improve**

**Remix**

**Combine two or more**

**Redistribute**

**Share with others**

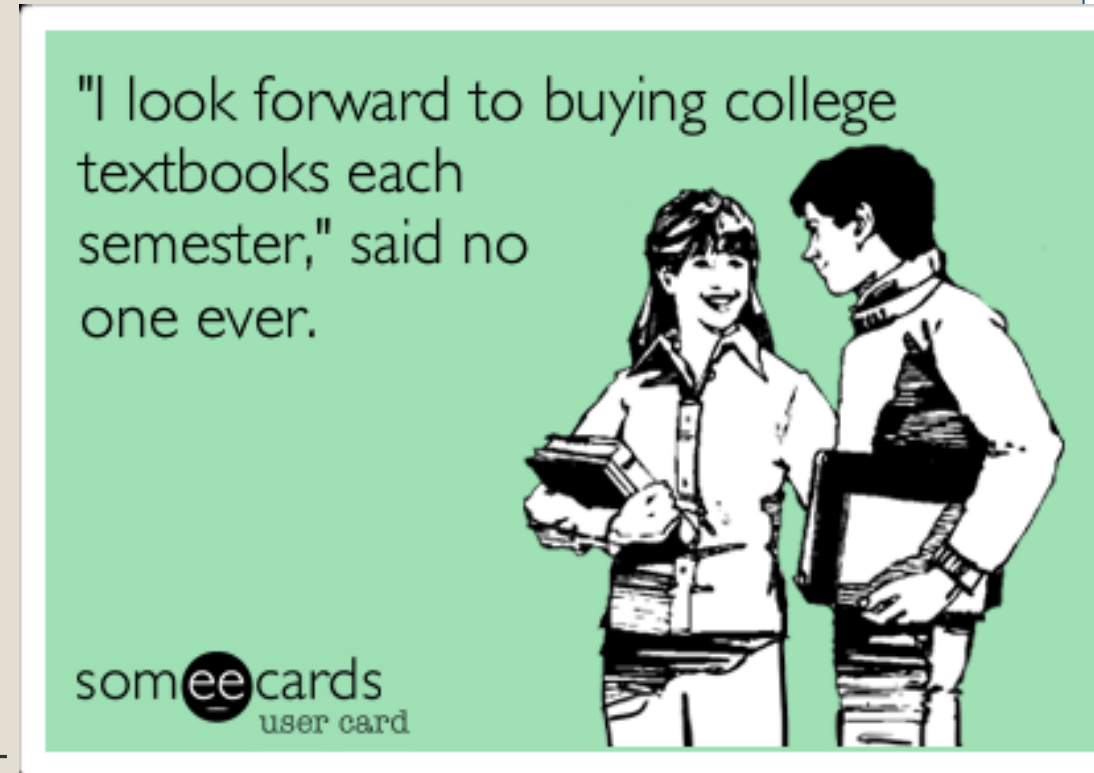
The 5Rs framework was designed by Lumen Learning. “Open” means you have permission to engage in the 5R activities.



Permission to engage in the 5R activities are normally granted by means of a Creative Commons license. Resources whose copyright has expired (or that were never protected by copyright) are also OER because you have permission to engage in the 5R activities with those resources.

# Impact of Textbook Costs on Students

- National data indicate 66% of students don't purchase the required textbook
- The Academic Costs of Textbooks:
  - 47% take fewer courses
  - 45% don't register for a specific course
  - 20% drop a course
  - 37% earn a poor grade because they could not afford the textbook
  - 19% fail a course because they could not afford the textbook



Cited in *The Rising Cost of College: Solving the Student Textbook Problem*. VitalSource Whitepaper. 2018.

# Value of OER



## Value to Students

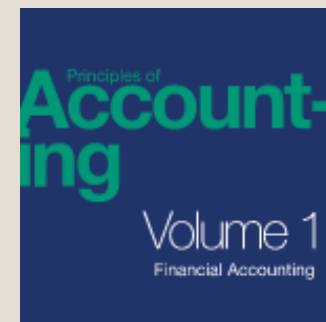
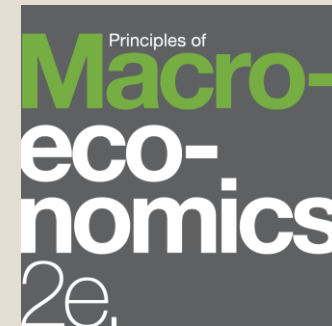
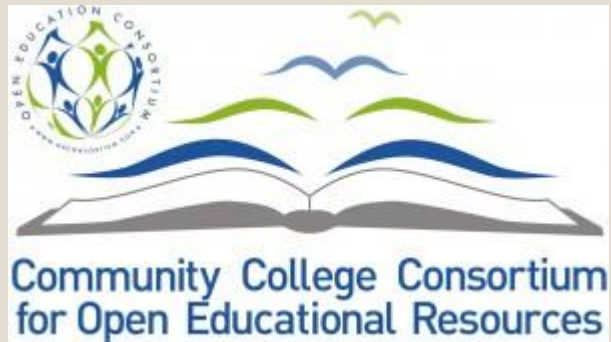
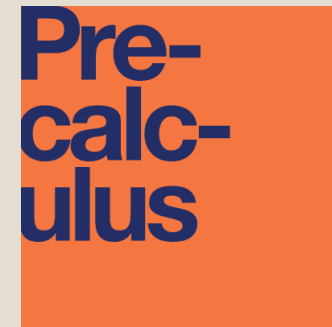
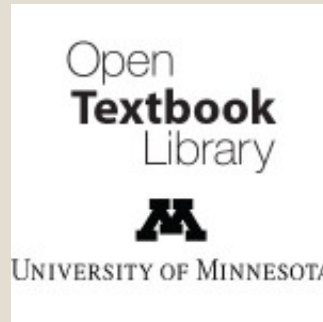
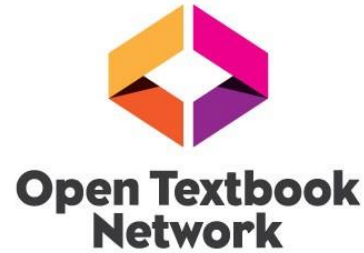
- Saves money
- Materials are accessible from day one
- Students own the book

## Value to Faculty

- Customizable
- Students have materials from day one
  - (vs. “It’s in the mail,” “I bought the wrong edition,” “It’s on hold until my student loan arrives,” “I don’t buy the book until I decide I will stay in the course”)
- Opportunities to collaborate with others in your discipline



# Finding Quality OER Materials



# Where can I find OER?

## Open Educational Resources (OER) Toolkit: OER Toolkit

OER Toolkit Basics and Benefits ▾ Licensing Adopting OER Finding OER ▾ Authoring OER OER at MCC OER Consultation

### OER Landing Page



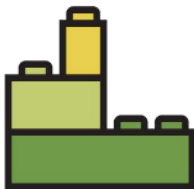
Basics and Benefits



Finding OER



OER at MCC



Adopting OER



Authoring OER



Licensing OER

- Basics and Benefits
- Finding OER
- OER at MCC
- Adopting OER
- Authoring OER
- Licensing OER
- OER Consultation

# OER Assessment



- Pass Rates
- Retention
- Student Satisfaction data from end-of-course surveys
- Longitudinal data (how students did in their next course, overall college persistence)

# “Open” and “Low or No Cost”



- **Zero Cost – 100% OER**
  - Some community colleges have “Z-Degrees”
    - ✦ Tidewater Community College in Virginia had the first Business Administration Z-Degree
    - ✦ Achieving the Dream announced that 38 community colleges will have Z-Degrees by 2020 (with funding from foundations including Hewlett and Gates)
      - These community colleges will do much of the heavy lifting to make OER degrees possible for other institutions
- **Low or No Cost**
  - Low cost = < \$40
  - No Cost includes materials that are licensed or owned by the MCC Library (paid through library budget) and are free to MCC readers

# NJ OER Law



- S 768 (Approved May 2, 2019)
- By May 1, 2020, institutions must submit a plan to the Secretary of Higher Education to expand the use of open textbooks and commercial digital learning products in order to achieve savings for students enrolled in the institution.

# OER Innovation Mini-Grants



- **Spring 2019**
  - Stipends ranging from \$250-\$1000 based on the project scope and scale
  - Funded through the Community College Opportunity Grant
  - 11 faculty members were awarded OER mini-grants

# OER Innovation Mini-Grants



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## **Spring 2020**

We will have another round of OER Innovation Mini-Grants

Proposal form available January 21, 2020

# English



- English Department joint presentation
  - Ray Dademo
  - Dan Markowicz
  - Mat Spano
  - Celia Winchester



# Mathematics



- Mathematics Department joint presentation
  - Jennifer Applebee
  - Keith Bosler
  - Dan Colaneri
  - Margaret Gorlin
  - Adrian Novio
  - Iryna Pavlyuk

# OER in the Mathematics Department

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JENNIFER APPLEBEE, KEITH BOSLER, DANIEL COLANERI,  
ADRIAN NOVIO, IRYNA PAVLYUK

# A Brief History: From Low Cost to OER

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## ❖ Starting prior to 2015: Low Cost Options

- ❖ BVT publishing: "Affordable Textbooks with Active Learning"
- ❖ Used in some sections of Algebra 1 and Algebra 2
- ❖ Less than \$50 for students

## ❖ Starting Fall 2017

- ❖ OER pilots - workbooks, textbooks, software
- ❖ Low cost software pilots

## ❖ Starting Fall 2018

- ❖ Discussions about adopting OER in course committee meetings

## ❖ Fall 2019

- ❖ Algebra 1, Algebra 2, Survey of Mathematics, Statistics 1, Pre-Calculus, Calculus 1, Discrete Mathematics (online only)

## ❖ Spring 2020

- ❖ Statistics 2, Business Statistics, Calculus 2, Calculus 3 (online only)

# Piloting OER: Some Details

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- ❖ Algebra 2 (014) OER workbook
  - ❖ Originally designed & modified by faculty at Scottsdale Community College (AZ), Housatonic Community College (CT), and Middlesex Community College (CT)
  - ❖ OpenStax textbook (free) and MyOpenMath HW platform (free)
  - ❖ Fall 2017: 1 section; Spring 2018: 5 sections; roll out to half of 014 sections in Fall 2018
- ❖ Bookstore: Xanadu vetting, ~\$0.14/page
- ❖ MyOpenMath Platform Additional Piloting

❖ Fall 2018 - as extra credit in Pre-Calculus and Linear Algebra (Calculus 1 review content)

# Piloting Low Cost Software

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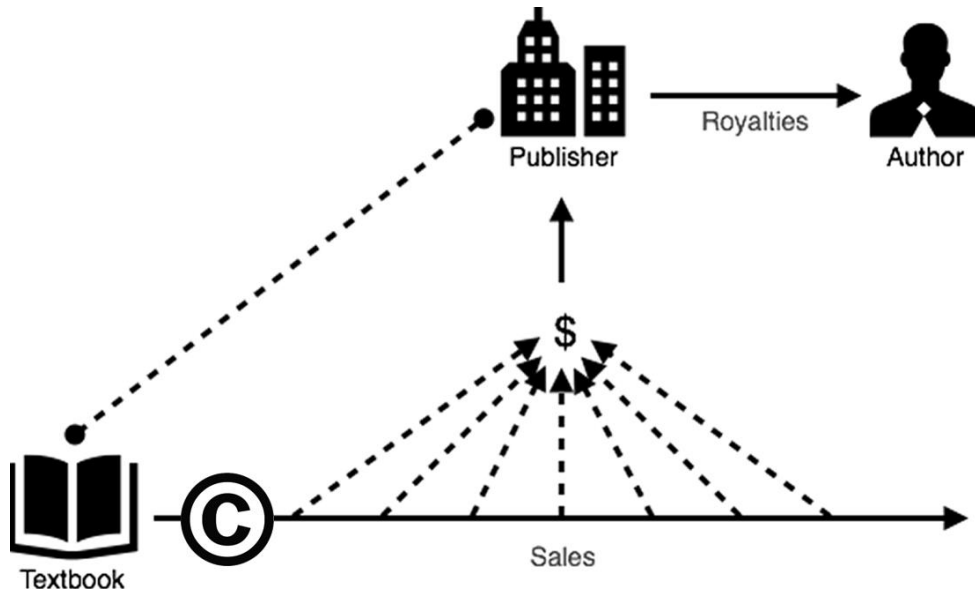
- ❖ Low-cost alternatives to the free MyOpenMath
  - ❖ Mika (Fall 2017)
  - ❖ Knewton (Spring 2018 & Fall 2018)
  - ❖ Sofia (LinkSystems), which is integrated with Canvas (Fall 2017)
  - ❖ Edfinity (Spring 2019)

# Adoption: Fall 2018 – Spring 2019

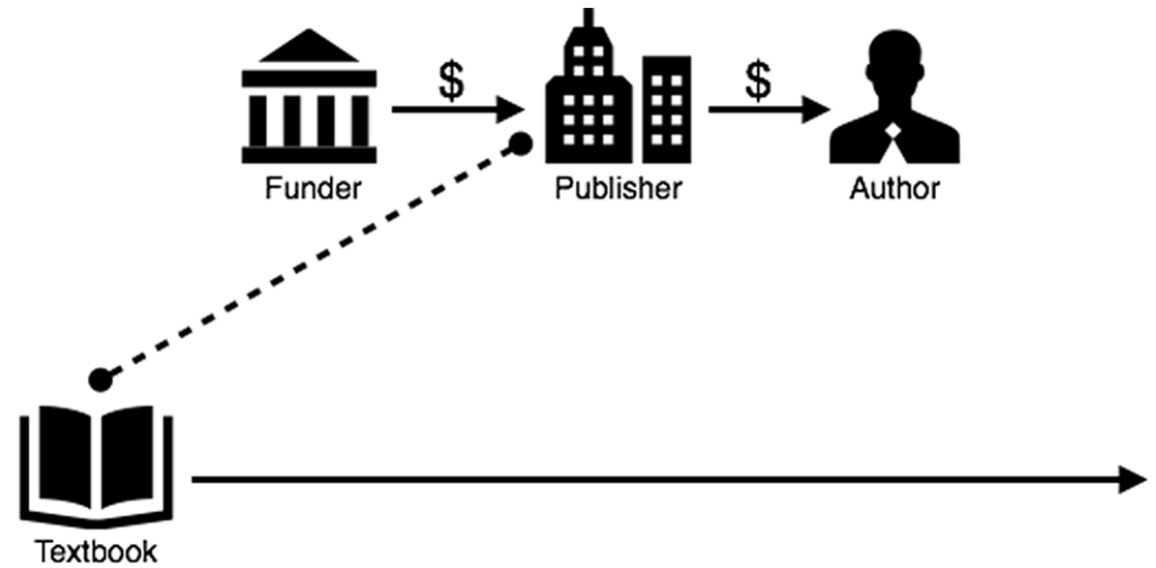
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- ❖ Most in the department had worked with MyOpenMath
- ❖ Discussions in course committees: adopting OER textbooks
- ❖ Discussions in department meetings: adopting OER textbooks
- ❖ CCOG Grants → Compensation for faculty to prepare instructor resources and MyOpenMath homework shells

# Adopting OER Textbooks



Traditional Textbook Sales Model



OER Textbook Model



# Open Textbook Collections

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- ❖ **Open Textbook Library (University of Minnesota, Twin Cities)** features a collection of openly-licensed and free to download textbooks for economics, business, math, natural and physical sciences, etc.
- ❖ **OpenStax College (Rice University)** offers open-source, peer-reviewed textbooks for biology, chemistry, history, math, psychology, and sociology.
- ❖ **Open SUNY Textbooks (SUNY)** publishes high-quality, cost-effective course resources by faculty for a variety of subjects.
- ❖ **MIT OpenCourseWare Online Textbooks (MIT)** offers free online textbooks in engineering, sciences and math with links to online print



# Courses and Videos

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- ❖ **Khan Academy** offers instructional videos on topics in economics, finance and math.
- ❖ **Coursera** offers recorded video lectures, auto-graded and peer-reviewed assignments, and community discussion forums.
- ❖ **MIT Open CourseWare** offers an extensive series of online courses with video lectures, assignments, and more.
- ❖ **YouTube EDU** YouTube is a valuable educational tool (not just cat videos). It has a vast collection of educational videos on topics ranging from foundations of American democracy and climate change to quantum mechanics and machine learning.

# Availability of Textbooks

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- ❖ Certain courses do not have suitable OER materials available.
- ❖ MAT-101 (Mathematics of Money) is a niche course that has no OER materials available.
- ❖ MAT-113/114 (the Mathematical Structures sequence) is a course designed for future elementary educators; however, most OER texts in this area focus on pedagogy rather than on mathematics.
- ❖ MAT-210/234 (Linear Algebra and Differential Equations) does have limited OER materials available, but none that completely represent what we teach in those courses.

# MyOpenMath

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- ❖ About MyOpenMath:  
<https://www.myopenmath.com/info/aboutus.php>
- ❖ MAT 123, 129 and 131 MyOpenMath courses were developed with funding help from the OER Mini Grant
- ❖ MyOpenMath provides pre-built courses based on popular open textbooks. Some of these course only include online homework, while others include videos, handouts, and instructor resources.
- ❖ Beyond pre-built courses you can fully customize/combine courses to fit your course and content needs.

# MyOpenMath (continued)

While the system is free, it is also reliable. We have only had one minor outage issue the whole time we have been using the program and it was resolved rather quickly.

❖ Available 24/7 from any internet connected device.

## Test #3 Review

Practice Assessment. Create new version.  
Due Mon 01/13/2020 11:59 pm

### Questions

- ▶ Q 1 (0/1) ▶ Q 2 (0/1) ▶ Q 3 (0/1) ▶ Q 4 (0/1)
- ▶ Q 5 (0/1) ▶ Q 6 (0/1) ▶ Q 7 (0/1) ▶ Q 8 (0/1)
- ▶ Q 9 (0/1) ▶ Q 10 (0/1) ▶ Q 11 (0/1)
- ▶ Q 12 (0/1) ▶ Q 13 (0/1) ▶ Q 14 (0/1)
- ▶ Q 15 (0/1)

Grade: 0/15 [Print Version](#)

A truck with 48-in.-diameter wheels is traveling at 60 mi/h.

Find the angular speed of the wheels in rad/min:

[Preview](#)

rad/min

How many revolutions per minute do the wheels make?

[Preview](#)

rpm

Get help: [Video](#)

Points possible: 1  
This is attempt 1 of 1.

Question ID: 4193  
License  
[Report Problems](#)

[Submit](#)

myOpenMath

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Adrian Novio

[Course](#) | [Messages](#) | [Forums](#) | [Roster](#) | [Calendar](#) | [Gradebook](#)

[Home](#) > [MAT 129-85 Winter](#) > [Assessment](#)

## Test #3 Review

Practice Assessment. Create new version.  
Due in 15 hours, 19 minutes. Due Mon 01/13/2020 11:59 pm

### Questions

- ▶ Q 1 (0/1)
- ▶ Q 2 (0/1)
- ▶ Q 3 (0/1)
- ▶ Q 4 (0/1)
- ▶ Q 5 (0/1)
- ▶ Q 6 (0/1)
- ▶ Q 7 (0/1)
- ▶ Q 8 (0/1)
- ▶ Q 9 (0/1)
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[Report Problems](#)

[Submit](#)

# MyOpenMath (continued)

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- ❖ While MyOpenMath has no on demand customer service, it does offer a large community forum - (support, training, videos, forums, etc.)



**General Comments/Discussion** **New Posts (684)**

General Comments or Discussion about MyOpenMath/IMathAS



**Teaching Discussion** **New Posts (32)**

Discussion about teaching approaches and strategies. This forum is more about pedagogy and course design than about technical how-tos.



**How do I ...** **New Posts (1218)**

Help with using MyOpenMath/IMathAS

# More than just math.....

- ▶ **Which Test Should I Use?** Isolate  
Showing Collapsed Always
- ▶ **Reliability and Validity** Isolate  
Showing Collapsed Always
- ▶ **Survey Methodology** *New* Isolate  
Showing Collapsed Always
- ▶ **Quasi-Experimental Methodology** *New* Isolate  
Showing Collapsed Always
- ▶ **Experimental Methodology** *New* Isolate  
Showing Collapsed Always
- ▶ **Observation Methodology** *New* Isolate  
Showing Collapsed Always
- ▶ ***Which Methodology Should I Use? (Under Construction - Do Not Copy)*** Isolate  
*Hidden*
- ▶ **Secondary Analysis of Existing Data** *New* Isolate  
Showing Collapsed Always

# More than just math.....

- Physics Library ⇌
  - Introduction: The Nature of Science and Physics ⇌
  - One-Dimensional Kinematics ⇌
  - Two-Dimensional Kinematics ⇌
  - Dynamics: Force and Newtons Laws of Motion ⇌
  - Uniform Circular Motion and Gravitation ⇌
  - Work, Energy, and Energy Resources ⇌
  - Linear Momentum and Collisions ⇌
  - Statics and Torque ⇌
  - Rotational Motion and Angular Momentum ⇌
  - Fluid Statics ⇌
  - Fluid Dynamics ⇌
  - Temperature Kinetic Theory and the Gas Laws ⇌
  - Heat and Heat Transfer Methods ⇌
  - Thermodynamics ⇌
  - Oscillatory Motion and Waves ⇌
  - Physics of Sound ⇌
  - Electric Charge and Electric Field ⇌
  - Electric Potential and Electric Field ⇌
  - Electric Current Resistance and Ohms Law ⇌
  - Circuits and DC Instruments ⇌
  - Magnetism ⇌
  - Electromagnetic Induction and AC Circuits ⇌
  - Electromagnetic Waves ⇌
  - Geometric Optics ⇌
  - Wave Optics ⇌
  - Special Relativity ⇌
  - Introduction to Quantum Physics ⇌

# More than just math.....

- Chemistry ⇌
  - Atoms, Molecules, and Ions ⇌
  - Composition of Substances and Solutions ⇌
  - Electronic Structure ⇌
  - Equilibrium ⇌
  - Essential Ideas ⇌
  - Gases ⇌
  - Kinetics ⇌
  - Laboratory ⇌
  - Liquids and Solids ⇌
  - Mass Relationships ⇌
  - Organic Chemistry ⇌
  - Periodicity ⇌
  - Solutions and Colloids ⇌
  - Stoichiometry of Chemical Reactions ⇌
  - Thermochemistry ⇌



# Sharing Open Resources via Canvas

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- ❖ Some MAT courses have shareable open resources created by the department faculty.
- ❖ For example, Algebra II and Statistics I have Master Course templates that any of the department's adjuncts or full-time faculty can use and edit to tailor them to their specific needs.
- ❖ In Statistics I, there are faculty-created labs and data that are also shareable to all Statistics instructors.

# Looking Ahead / OER for Upper Levels

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- ❖ OER is currently being piloted in three upper-level courses:
  - ❖ Discrete Mathematics (MAT 206), Calculus III (MAT 233), and Statistics for Business (MAT 285)
- ❖ Difficulty with upper-level courses is finding both textbooks and free homework software.
  - ❖ Edfinity is a potential low-cost solution for homework.
- ❖ Goal is to eventually have all upper-levels taught using OER (or low-cost) materials.

# Natural Sciences



- **Physics**
  - Meenu Jain and Moe Tabanli
- **BIO 135, Concepts of Biology**
  - Virender Kanwal and Mike Sullivan

# OPEN OPTION FOR A PHYSICS WORKBOOK

Moe Tabanli and Meenu Jain  
Middlesex County College



# When things don't work..

Trying to finish everything  
on my to-do list like

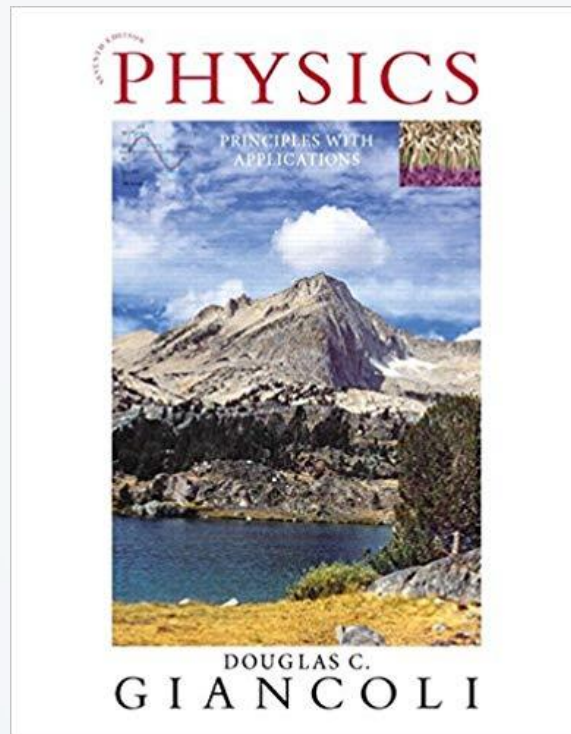


When there is a problem,  
there is an opportunity...






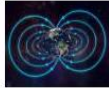








# Skyrocketing cost...

- 7<sup>th</sup> EDITION = \$199.84 New, \$65 Used
- OER- Free!!



## Choose a 7th Edition chapter

 <p>Chapter 1 Introduction, Measurement, Estimating 39 solutions</p>	 <p>Chapter 18 Electric Currents 60 solutions</p>
 <p>Chapter 2 Describing Motion: Kinematics in One Dimension 59 solutions</p>	 <p>Chapter 19 DC Circuits 66 solutions</p>
 <p>Chapter 3 Kinematics in Two Dimensions; Vectors 51 solutions</p>	 <p>Chapter 20 Magnetism 63 solutions</p>
 <p>Chapter 4 Dynamics: Newton's Laws of Motion 67 solutions</p>	 <p>Chapter 21 Electromagnetic Induction and Faraday's Law 73 solutions</p>
 <p>Chapter 5 Circular Motion; Gravitation 66 solutions</p>	 <p>Chapter 22 Electromagnetic Waves 43 solutions</p>
 <p>Chapter 6 Work and Energy 71 solutions</p>	 <p>Chapter 23 Light: Geometric Optics 68 solutions</p>

nswers.com/giancoli-physics-7th-edition-solutions/chapter-2/problem-33

# BACK IN THE SUMMER OF 2019



Middlesex County College

## General Physics I PHY-123 Workbook

Created and compiled by:  
Meenu Jain and Moe Tabanli



# 5 R's of OER...



# CUSTOMIZED OER WORKBOOK



# TALK IT OUT-WORK IT OUT



# WORKBOOK COMPONENTS

## Concepts

$F$  = Force in magnitude

$\mathbf{F}$  = Force as a vector

$a$  = Acceleration in magnitude

$\mathbf{a}$  = Acceleration as a vector

$m$  = mass

$\mu_K$  = Coefficient of kinetic friction.

$\mu_s$  = Coefficient of static friction

$g = 9.8 \text{ m/s}^2$  unless

$a_x$  = acceleration in x

$a_y$  = acceleration in y

$F_x$  = x component

$F_y$  = y- component

$\mathbf{F}_{net}$  = Net force. existing forces

## Formulas

$$W = mg$$

$$\mathbf{F}_{net} = m\mathbf{a}$$

$$\bar{\mathbf{a}} = \frac{1}{m} \sum \bar{\mathbf{F}}$$

$$\sum F_x = F_{Net(x)} = ma_x$$

$$\sum F_y = F_{Net(y)} = ma_y$$

$$F = \sqrt{F_x^2 + F_y^2}$$

$$\tan \theta = \frac{F_y}{F_x}$$

Conditions for an object in Equilibrium ( $a=0$ )

$$\sum F_x = 0 \text{ and } \sum F_y = 0$$

$$\mathbf{F}_{12} = -\mathbf{F}_{21} \text{ (Action-Reaction)}$$

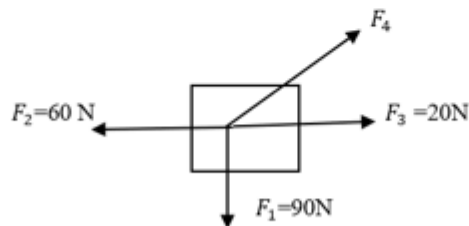
$$f_k = \mu_K F_n$$

$$f_{s(max)} = \mu_s F_n$$

$$0 \leq f_s \leq f_{s(max)}$$

## Chapter 4 Problems: Newton's Laws of Motion

- 1) The figure shows top view of four forces acting on an object on a table. What is the magnitude and direction of the fifth force that keeps the object in equilibrium?



## Chapter 4: Hints:

- 1) Use sine and cosine for  $F_4$  and write Newton's law of equilibrium for x and for y.

- 2) Use the diagonal cosine rule for  $F_4$  perpendicular to the other forces.

- 3) Constant velocity means net force is zero. Use Newton's second law instead of Tension.

- 4) Basically, top cable is the same as the bottom cable.

## Chapter 4: Answers

1)  $F_4 = 97.5 \text{ N}$  and  $\theta = 66$  degrees

2)  $T = 31.5 \text{ N}$  and  $T = 26.4 \text{ N}$

3)  $F_n = 5.9 \text{ N}$  and  $f_n = 10.2 \text{ N}$ ; coefficient of friction  $\mu = 1.7$

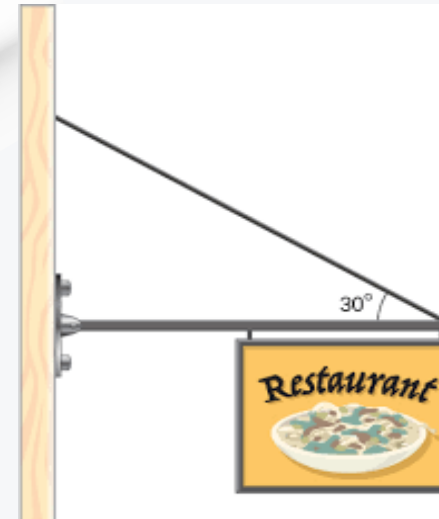
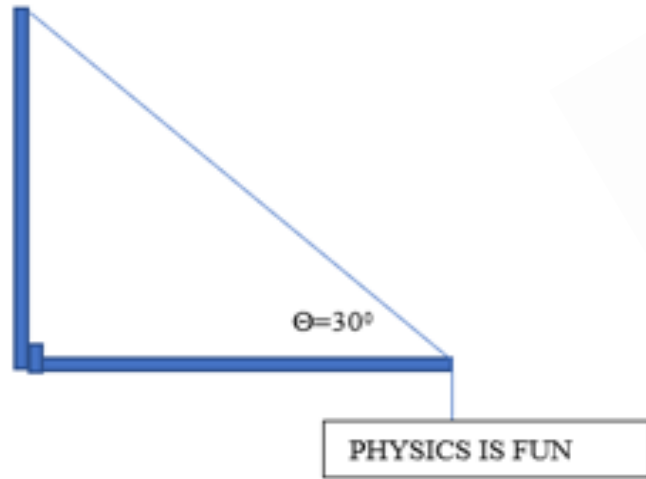
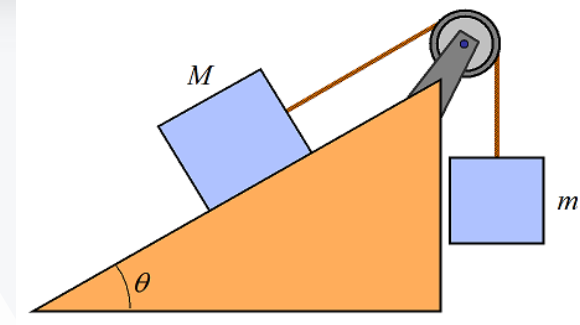
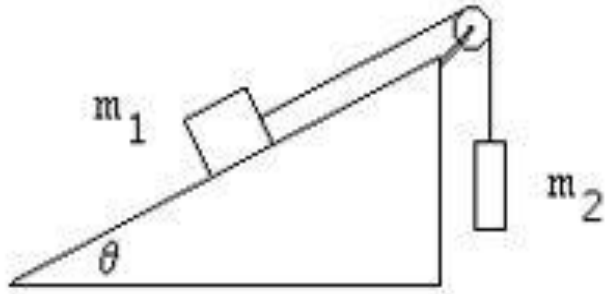
4)  $T_2 = 68.6 \text{ N}$ ;  $T_1 = 88.2 \text{ N}$

# OER VS PUBLISHERS

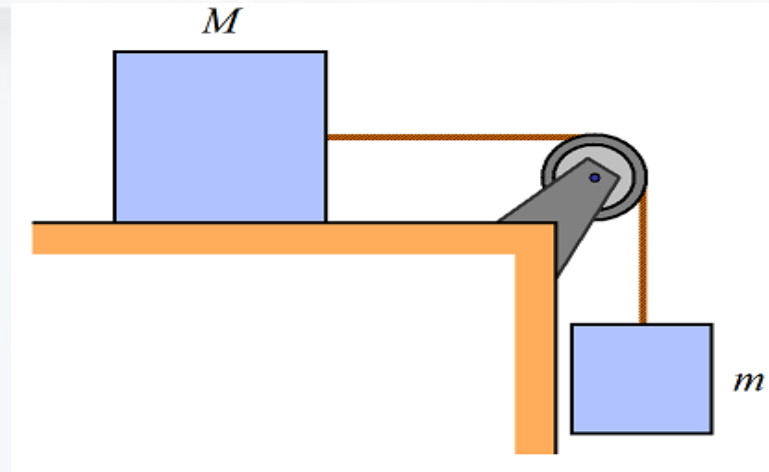




# CHALLENGES US VERSUS THEM



# FUTURE



canvas

$$S = \int v dt = \int -10 - 10 + 2t = -10t - 5t^2 + c$$

$$S(0) = 20 = 10 \cdot 0 - 5 \cdot 0^2 + c = 20$$

# eLearning and OER



- How eLearning partners with faculty for OER implementation
  - Mike Sullivan, Director, eLearning





# Library and OER



- How the Library partners with faculty for OER implementation
  - Jim Bordone

**MIDDLESEX**  
COUNTY COLLEGE myMCC

MCC Library Homepage

Open Educational Resources (OER) Toolkit: OER Toolkit

OER Toolkit | Basics and Benefits | Licensing | Adopting OER | Finding OER | Authoring OER | OER at MCC | OER Consultation

OER Landing Page

Basics and Benefits

Finding OER

OER at MCC

Adopting OER

Authoring OER

Licensing OER

# OER

Partnership with the MCC Library

Presented by: Jim Bordone



- ▶ MCC - active participant in OER.
- ▶ Congratulations OER partners in MCC community.

# UPDATE

▶ Legislation:

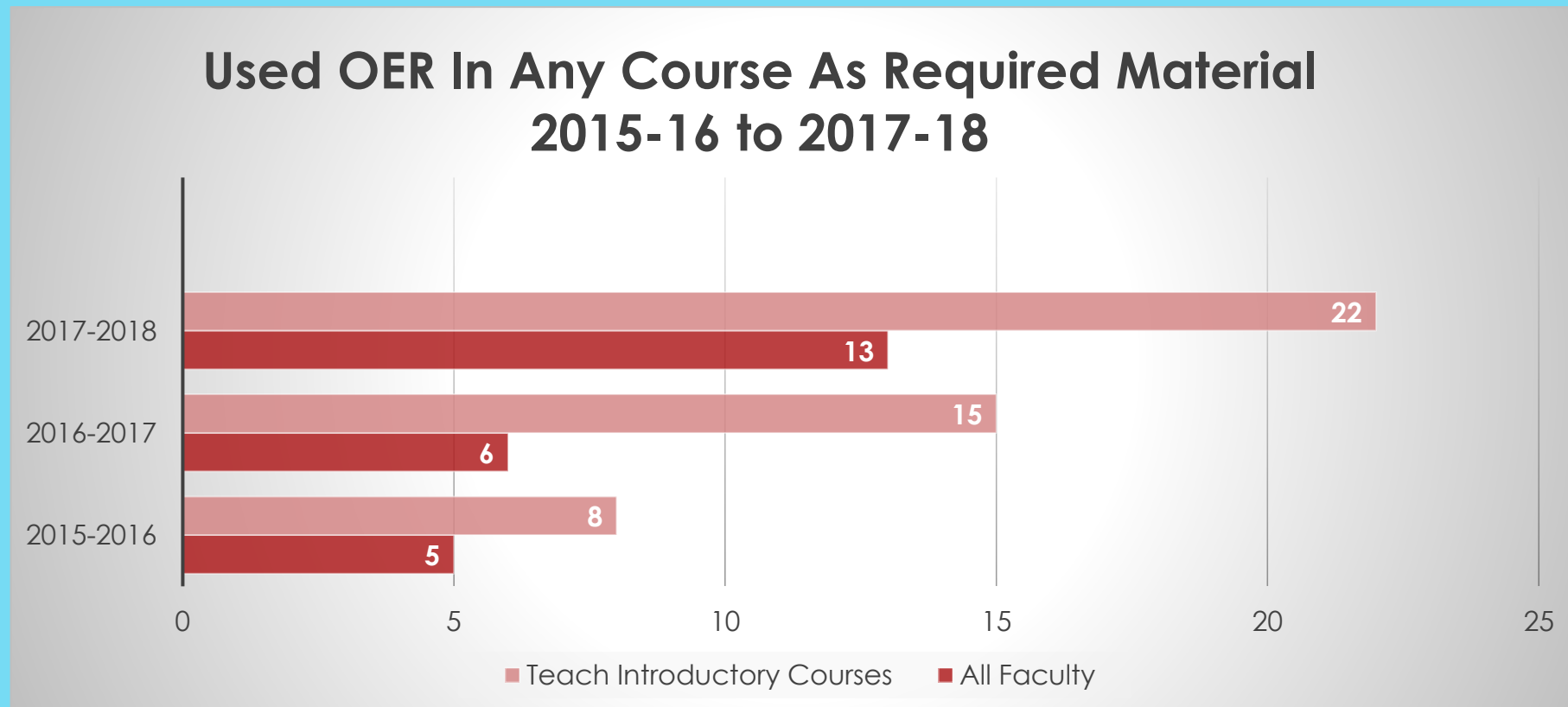
- New Jersey - 03/25/2019

S768 Pamphlet Law: Requires institutions of higher education to develop open textbook plan

- Federal - 04/04/2019

Affordable College Textbook Act re-introduced to House (H.R. 2107) and Senate (S. 1036)

# GROWING TREND IN POST SECONDARY EDUCATION



Source

Seaman, Julia E, and Jeff Seaman. *Freeing the Textbook: Educational Resources in U.S. Higher Education, 2018*. BABSON Survey Research Group. [www.onlinelearningsurvey.com/reports/freeingthetextbook2018.pdf](http://www.onlinelearningsurvey.com/reports/freeingthetextbook2018.pdf)



# MIDDLESEX COUNTY COLLEGE LIBRARY

- Marilyn N. Ochoa – Library Director  
2019-2020 Statewide Academic OER Ambassador  
732-548-4252 ([mochoa@middlesexcc.edu](mailto:mochoa@middlesexcc.edu))
- Deborah Hubler – Reference Librarian  
Designer of OER LibGuide  
732-548-3854/4253 ([dhubler@middlesexcc.edu](mailto:dhubler@middlesexcc.edu))
- James Bordone – Reference Librarian  
732-548-4253 ([jbordone@middlesexcc.edu](mailto:jbordone@middlesexcc.edu))

## Open Educational Resources (OER) Toolkit: OER Toolkit

OER Toolkit | Basics and Benefits - | Licensing | Adopting OER | Finding OER - | Authoring OER | OER at MCC | OER Consultation

### OER Landing Page



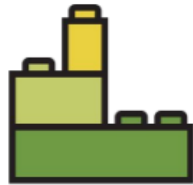
Basics and Benefits



Finding OER



OER at MCC



Adopting OER



Authoring OER



Licensing OER

The OER Toolkit found at  
<https://middlesexcc.libguides.com/AuthorOER>



# FINDING OER

The screenshot shows a web browser window displaying the Middlesex County College (MCC) Library homepage. The browser's address bar shows the URL <https://middlesexcc.libguides.com/AuthorOER>. The page features a blue header with the MCC logo and the text "myMCC". Below the header, the page title is "MCC Library Homepage" and the main heading is "Open Educational Resources (OER) Toolkit: OER Toolkit". A navigation menu contains several items: "OER Toolkit", "Basics and Benefits", "Licensing", "Adopting OER", "Finding OER", "Authoring OER", "OER at MCC", and "OER Consultation". The "Finding OER" item is highlighted with a yellow circle. Below the navigation menu, the page is titled "OER Landing Page" and displays six icons representing different OER topics: "Basics and Benefits" (book icon), "Finding OER" (magnifying glass icon), "OER at MCC" (computer monitor icon), "Adopting OER" (building icon), "Authoring OER" (pencil icon), and "Licensing OER" (clipboard icon). At the bottom of the page, there is a footer with the text "Last Updated: Dec 18, 2019 5:26 PM" and the URL "https://middlesexcc.libguides.com/AuthorOER". The Windows taskbar at the bottom of the screen shows the time as 4:03 PM on 12/19/2019.

## Open Educational Resources (OER) Toolkit: Finding OER

OER Toolkit | Basics and Benefits ▾ | Licensing | Adopting OER | Finding OER ▾ | Authoring OER | OER at MCC | OER Consultation



### Finding Open Educational Resources

It takes time to search for existing OER to support your course. To help you get started we have done quite a lot of searching and created repositories of available OER by Division and also by Department.

We would be excited to work with you to find just the right resources for your needs. [Click here](#) to request help finding additional resources for your class.

### Finding OER by Division

- [Division of Arts and Sciences](#)
- [Division of Professional Studies](#)

### Finding OER by Department

Links are provided for departments when the pages are completed. Other departments' pages are under construction. Please check back soon.

- [Accounting, Business, & Legal Studies](#)
- [Allied Health, Dental Hygiene & Nursing](#)
- [Computer Science](#)
- [Engineering Technologies](#)
- [English Literature, Composition & Journalism](#)
- [ELL, Languages and Cultures](#)
- [Health & Physical Education](#)
- [History & Social Sciences](#)
- [Mathematics](#)
- [Natural Sciences](#)
- [Protective Services](#)

### OER Supplementary Resource Search Engines

In addition to open textbooks there is a wealth of open *supplementary resources* available. You might find these sites helpful:

[FlickrCC](#) - photos shared with one of the Creative Commons licenses.

[Internet Archive](#) - a non-profit library of millions of free books, movies, software, music, websites, and more.

[OCW Educator's Portal](#) - MIT's OpenCourseWare which includes Instructor Insights, Assignments, AV Lectures, AV Special Element Videos, Exams, Image Gallery, Lecture Notes and Projects for courses covering 36 departments.

[Open Michigan](#) - The University of Michigan's community for making their "research, teaching, and creative work available to the world beyond campus."

[TheOrangeGrove](#) - Florida's Open Educational Resource Repository





## Open Textbook Library

**Look here first!** Titles in this "referatory" are links to textbooks which are currently in use by at least two colleges and each has reviews from those who have actually taken a serious look at the text.

### Additional OER Search Engines

- **American Institute of Mathematics**  
One of AIMS many programs is providing approved textbooks for the study of Algebra, Calculus, Differential Equations, Trigonometry, and more.
- **BC Campus OpenEd Resources**  
a collection of more than 200 courses, textbooks and ancillary materials from a variety of Canadian and American colleges and universities, OpenStax, Saylor Academy and more.
- **College Open Textbooks**  
a collection of more than 800 open textbooks from the Applied Sciences, Business, Humanities, Natural and Social Sciences. College Open Textbooks does not vet textbooks for quality or accuracy of the content.
- **Cool4ed Open eTextbooks**  
52 courses that have 1-7 free and open eTextbooks aligned with the course content. Includes options for career and technical education. Created by the University of California
- **Cosmo Learning**  
a collection of top educational videos and documentaries by hundreds of universities, educators, and professionals.
- **Directory of Open Access Textbooks**  
a collection of open access books from academic publishers, not necessarily textbooks.
- **EnCORE**  
149 free and open etextbooks that have been reviewed by faculty colleagues in the California Community Colleges, the California State University, and the University of California. The California OER Council developed the evaluation rubric which was used by all faculty reviewers.
- **LibreTexts**  
LibreTexts has a track record of "developing and disseminating high-quality, open textbooks in partnership with institutions of higher education across the country" with resources for Biology, Business, Chemistry, Engineering, Geosciences, Humanities, Mathematics, Medicine, Photosciences, Physics, Social Sciences and Statistics.
- **Mason OER Metafinder**  
from George Mason University - "MOM" is designed as a search engine (metafinder) of 16 popular OER repositories to help university faculty and librarians find Open Educational Resources (OER)

Your first choice should be to go to the Open Textbook Library  
<https://open.umn.edu/opentextbooks/>

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The Open Textbook Library is supported by the [Center for Open Education](#) and the [Open Textbook Network](#).

## Browse Subjects

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[Computer Science & Information Systems](#)  
[Economics](#)  
[Education](#)

## New Books

 [Electromagnetics, Vol 2](#)  
  
 [Writing Unleashed](#)

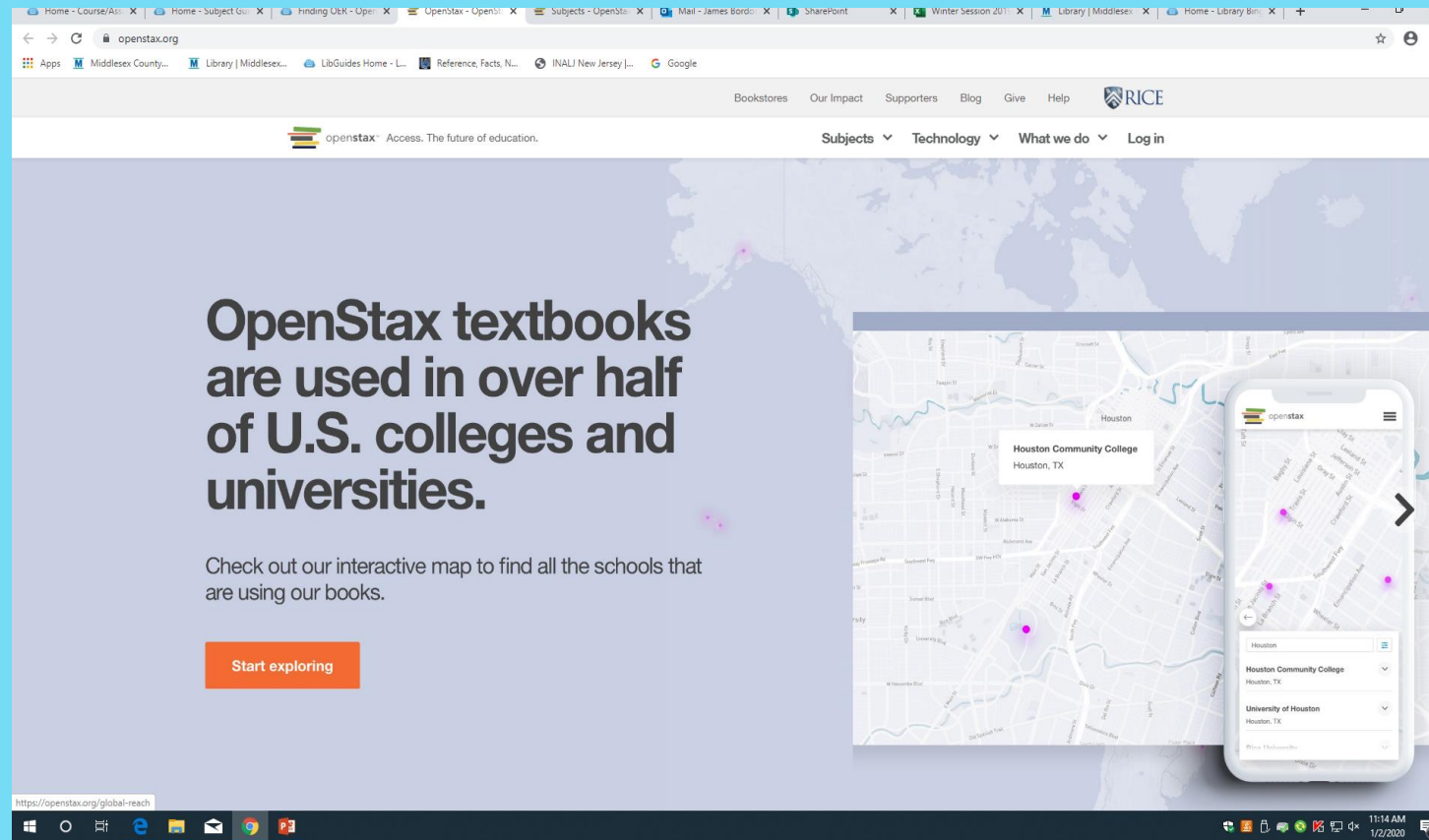
## In Development

[Teaching in the University: Learning from the Experiences of Graduate Students & Faculty](#)  
Published by Virginia Tech Publishing  
[Chemistry for Non-Majors](#)  
Published by Michigan State University

- Open textbooks free.
- Reviewed by faculty.
- Downloaded for no cost.
- Currently includes 685 textbooks and growing.

# OPENSTAX

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Source: OpenStax website. <https://openstax.org/impact>. Accessed 08 Jan. 2020.

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Social Sciences

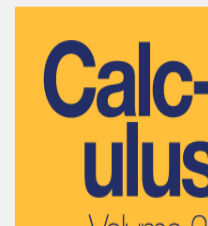
Humanities

Business

Essentials

AP®

### Math



# LIBRETEXT

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398

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154

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223 million

Students served

\$31 million

Total Amount Spent

# LIBRETEXT

The screenshot shows the LibreTexts website homepage. A yellow oval highlights the navigation menu at the top, which includes categories like BIOLOGY, BUSINESS, CHEMISTRY, ENGINEERING, ¡SÍ! ESPAÑOL, GEOSCIENCES, HUMANITIES, MATHEMATICS, MEDICINE, PHYSICS, SOCIAL SCIENCES, STATISTICS, and WORKFORCE. Below the navigation menu is a "Big News" section with the headline "LibreTexts Awarded \$5M Federal OER Grant" and a "Read More" button. At the bottom, there is a blue navigation bar with icons and labels for STUDENTS, INSTRUCTORS, INSTITUTIONS, and VOLUNTEERS. Below this bar, four statistics are displayed: 398 Textbooks, Textmaps, and Courses using LibreTexts; 154 Courses using LibreTexts; 223 million Students served; and \$31 million Total Amount Saved.

**Navigation Menu:**

- BIOLOGY
- BUSINESS
- CHEMISTRY
- ENGINEERING
- ¡SÍ! ESPAÑOL
- GEOSCIENCES
- HUMANITIES
- MATHEMATICS
- MEDICINE
- PHYSICS
- SOCIAL SCIENCES
- STATISTICS
- WORKFORCE

**Big News:**

## LibreTexts Awarded \$5M Federal OER Grant

[Read More](#)

**Navigation Bar:**

- STUDENTS
- INSTRUCTORS
- INSTITUTIONS
- VOLUNTEERS

**Statistics:**

398	154	223 million	\$31 million
Textbooks, Textmaps, and Courses using LibreTexts	Courses using LibreTexts	Students served	Total Amount Saved



# OpenNJ.net

myOpenNJ Home



## New Jersey Open Educational Resources

OPENNJ HOME

BROWSE BY

VIEW ITEMS

ABOUT OPENNJ

FINDING OER

SUBMIT YOUR OER MATERIAL

PRINT SEND SHARE

Search Collection:

Open NJ is a statewide initiative undertaken by VALE to provide New Jersey college and university faculty with a space to share Open Educational Resources and expand our knowledge and adoption of OER. By creating this common space, Open NJ aims to provide a way to search for resources over multiple schools, and to grow the use of OER on individual campuses.

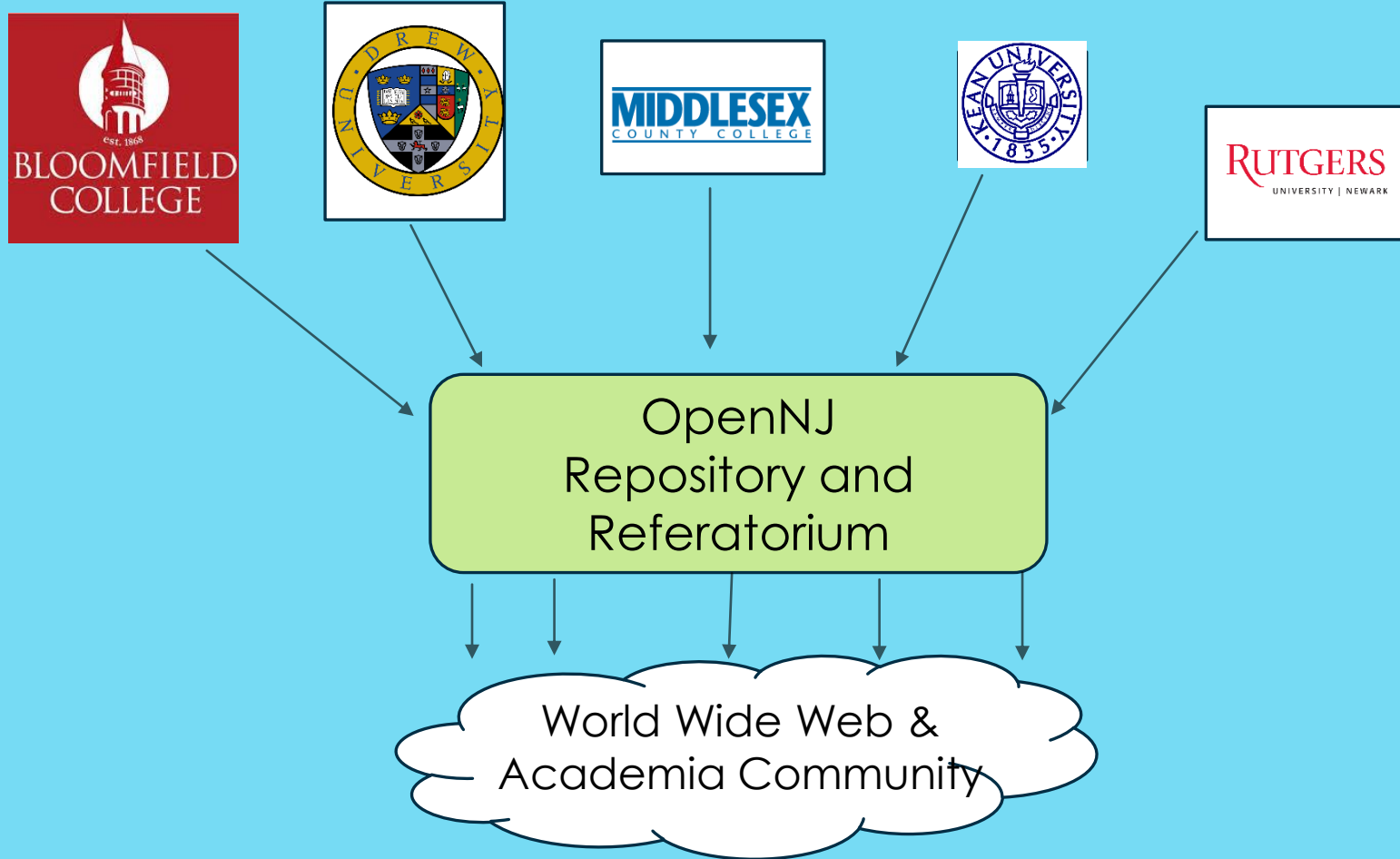
### Browse Our Collections

Schools Materials Subjects Training



# HOW OpenNJ WORKS

Close to 40 New Jersey Colleges and Universities contribute their work to this New Jersey Open Resource Repository



# MOVING FORWARD

- Starting point: MCC Toolkit -  
then try:
  - Open Textbook Library
  - OpenStax
  - LibreText
  - NJ Open Resources
- Explore.
- Partnership with Library.

# OER LIBRARIANS

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James Bordone – Reference Librarian  
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# Panel – Q & A

