



Welcome Educators!

Oregon Virtual Statewide OER Symposium
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Visions for Increasing Access to Lab-Based Courses: Learning from the Pandemic

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Central goal of adopting OER is to reduce barriers, increasing access to higher education.

OER reduces financial barriers presented by expensive course materials.

Recently adopted

- OpenStax *Atoms First 2e* for CH 221-223
- *Problem Solving with Python* by Peter Kazarinoff for GE 102
- *DC and AC Electrical Circuit Analysis* by James Fiore for ENGR 201 and 202



**What about other barriers?
Has the pandemic increased access
to higher education for some?**



CH 22x General Chemistry

Traditional Face-to-Face

- Two, 1:50 classes each week
 - Ex. M/W 10:15 am-12:05 pm
- One, 2:50 lab each week
 - Ex. Th. 9:45 am-12:35 pm or 12:45-3:35 pm
- Sections typically limited to Bend campus, traditional working-day hours

Pandemic Hybrid

- Online classes
 - Materials released each Saturday, due next Friday
 - Content split in to two-three learning modules
- Hybrid labs
 - 24 student class splits in to three cohorts
 - 1/3 have in-person lab each week, 2/3 remote



Hello Professor Taber, I know it is a bit late, but I'm interested in signing up for one of your chem 221 classes. I did not sign up earlier because I cannot make the lectures in person. [...] So now I am reaching out to you to see if that is a possibility and if there is still time left to register.



1. Essay: Spend 5 minutes writing about somethi...

Points: **2** (Extra Credit)



Question

Spend 5 minutes writing about something for which you are grateful. Several research studies have correlated gratitude with improved academic performance and well-being. You will not be graded on content, but rather on making on honest effort.

Answer

Any answer gets full credit.

i'm grateful for having the lectures online. i work all day and im grateful that having a flexible class schedule lets me keep pursuing my education.



Feedback suggest that some students were able to take courses because of the hybrid format.



Could hybrid formats increase student success among those who could take all in-person courses?



For Some Black Students, Remote Learning Has Offered A Chance To Thrive

March 1, 2021 - 5:00 AM ET

Heard on [All Things Considered](#)

ELIZABETH MILLER

FROM 

[J Microbiol Biol Educ.](#) 2021; 22(1): 22.1.54.

PMCID: PMC8046656

Published online 2021 Mar 31. doi: [10.1128/jmbe.v22i1.2457](https://doi.org/10.1128/jmbe.v22i1.2457)

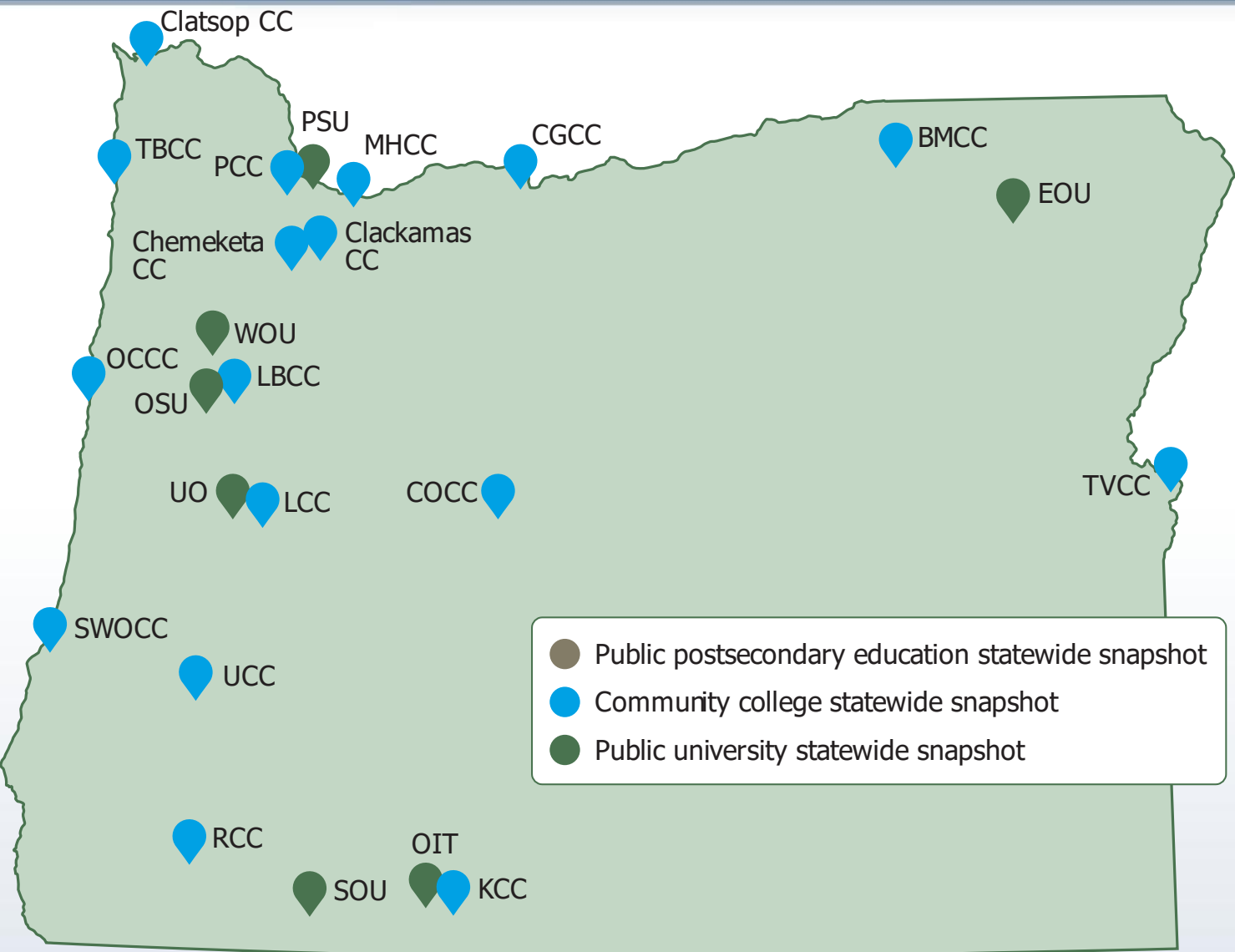
PMID: [33884088](https://pubmed.ncbi.nlm.nih.gov/33884088/)

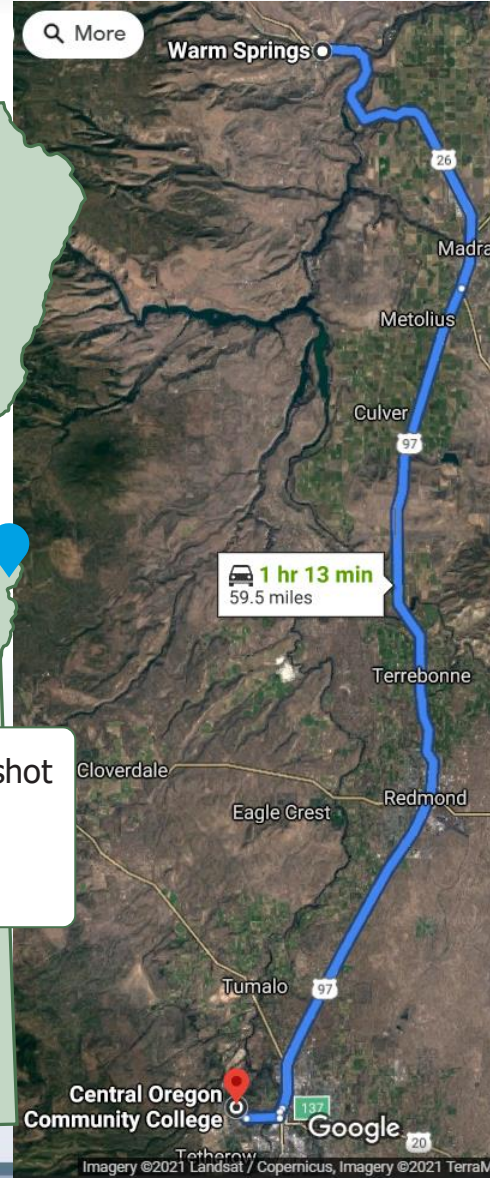
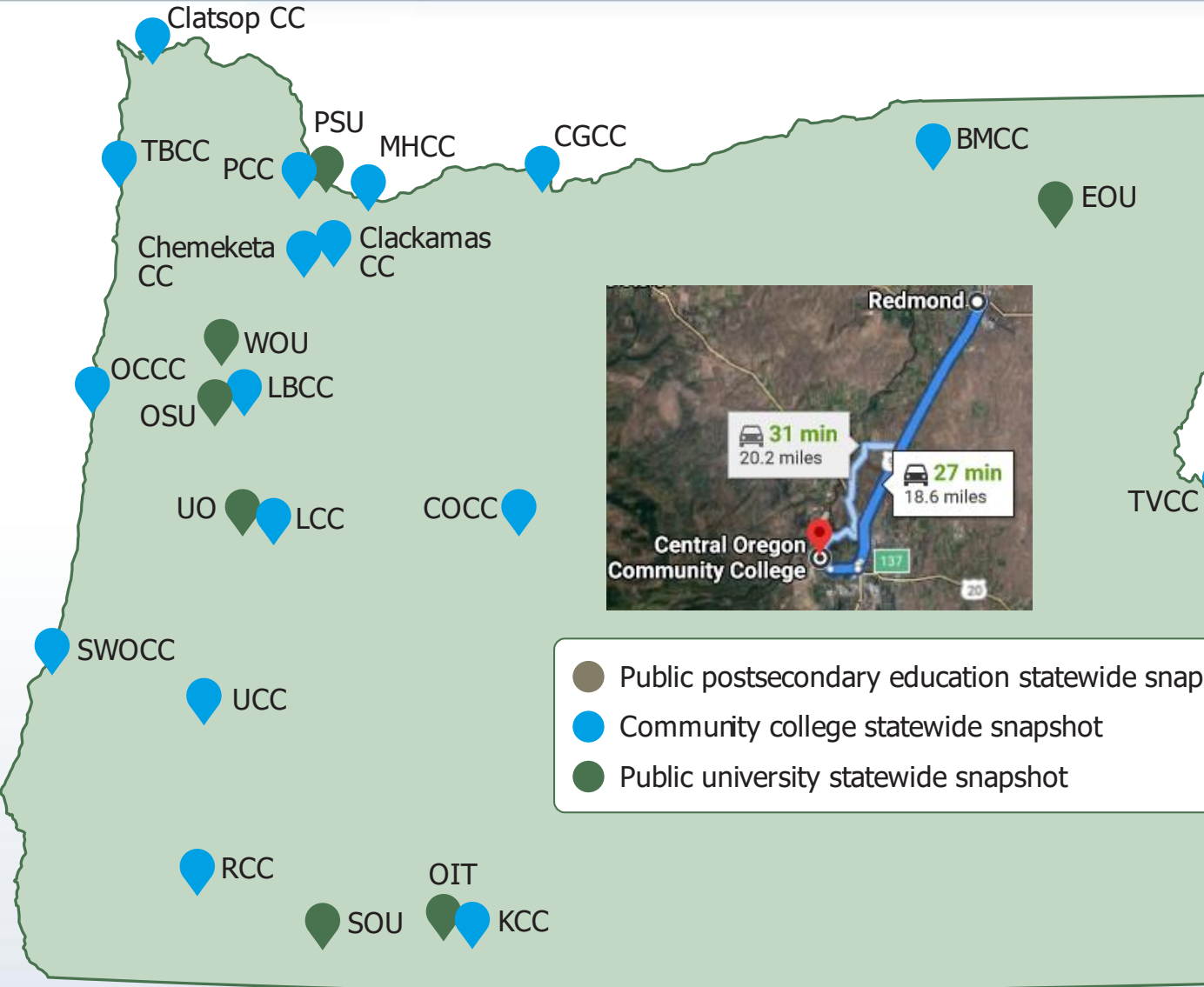
Disparities in Remote Learning Faced by First-Generation and Underrepresented Minority Students during COVID-19: Insights and Opportunities from a Remote Research Experience

[Paul H. Barber](#),^{1,*} [Casey Shapiro](#),² [Molly S. Jacobs](#),² [Leslie Avilez](#),³ [Katherine I. Brenner](#),³ [Carmen Cabral](#),³ [Monika Cebrenros](#),³ [Evan Cosentino](#),³ [Candice Cross](#),¹ [Monica L. Gonzalez](#),³ [Kaila T. Lumada](#),³ [Alison T. Menjivar](#),³ [Jennifer Narvaez](#),³ [Belinda Olmeda](#),³ [Rebecca Phelan](#),³ [Destiney Purdy](#),³ [Saima Salam](#),³ [Leah Serrano](#),³ [Miguel J. Velasco](#),³ [Erick Zerecero Marin](#),¹ and [Marc Levis-Fitzgerald](#)²



Let's just consider travel times.







Model	Meetings /Term	Travel Time Each Way (hr)	Total Travel Time per Term (hr)
Traditional In-Person	31	0.25	15.5
		0.5	31.0
		1.0	62.0
Traditional In-Person w/Class Followed by Lab	21	0.25	10.5
		0.5	21.0
		1.0	42.0
Online and/or Remote Lecture, In-Person Labs	10	0.25	5.0
		0.5	10.0
		1.0	20.0
Online and/or Remote Lecture, 1/3 In-Person Labs	3	0.25	1.5
		0.5	3.0
		1.0	6.0



A student with an hour commute could save 42 hours per term if they only need to attend class once a week and 56 hours per term if they only need to be on-site three times.



**For a student working \$14/hr, 56
hours is \$784.
Adopting OER text saves ~\$80.***

*<https://openstax.org/press/48-percent-colleges-22-million-students-using-free-openstax-textbooks-year>



Visions for Lab-Based Courses

- Continue to offer typical, in-person options
- Also offer hybrid options to reduce time barriers
 - Hard to justify lots of in-person sections with few students
 - Can justify flexible course structure to adapt to student needs
 - Maximize limited in-person time (labs)
- Role of OER
 - OER reduces financial barriers
 - Good OER texts
 - Need to further develop OER virtual/remote lab options
 - Ex. PhET
 - Labs that can be done at branch institutions with limited/no lab space
 - Adapting OER in-person labs to use Arduino



Thank you!
Questions?
Feel free to email me at
btaber@cocc.edu