

Participant Diversity Increased When Online – Hurse, et al. Appendix B. Supplementary Data

Supplemental Table 1: Race/ethnicity of Participants

	In-person			Online	
	2017	2018	2019	Spring 2021	Summer 2021
Asian	7	11	11	7	7
Black/AA	2	5	5	9	2
Hispanic	4	1	1	2	0
Middle Eastern/Arab/North African	4	4	4	6	4
White#	12	8	8	16	12
Multiple Identities*	n/a	n/a	1	2	3

#not Hispanic or Middle Eastern/Arab/North African; *Students were not given the option to identify as having multiple identities in 2017 and 2018. In 2019, one student identified as white and black. In the spring of 2021, one student identified as AA and Native American, and another student identified as AA, Native American, and white. In summer 2021, students were only given the option to select bi-racial/multi-racial, without allowing for additional details to be added.

Supplemental Table 2: Gender Identity of Participants

	In-person			Online	
	2017	2018	2019	Spring 2021	Summer 2021
Female	24	22	34	31	20
Male	5	7	6	9	7
Non-binary	n/a	n/a	n/a	1	0
Unknown	n/a	n/a	n/a	2	2

In the spring and summer of 2021, participants were given the option of choosing non-binary or not identifying their gender.

Supplemental Table 3: Documentation of Chi-square and Fisher's Exact Tests

Categories	Variables	Test
Counties of residence	Online, In-person	<i>Chi-square</i> test, Cramer's V
Grade in school of students	Online, In-person	<i>Chi-square</i> test, Cramer's V
Participation of students from public schools with high or low numbers of economically disadvantaged students	Online, In-person	<i>Chi-square</i> test, Cramer's V
Participation of students from public schools with high or low numbers of URM students	Online, In-person	<i>Chi-square</i> test, Cramer's V
Participation of students from public schools with high or low numbers of economically disadvantaged students	Online Complete, Online Incomplete	Fisher's exact test, Cramer's V
Participation of students from public schools with high or low numbers of URM students	Online Complete, Online Incomplete	Fisher's exact test, Cramer's V
Participants that attends a gifted vs. regular school	Online Complete, Online Incomplete	Fisher's exact test, Cramer's V

The variables tested and categories assessed are indicated in the table.

Supplemental Table 4: *Chi*-square Statistics for the Counties Where Students Attend School Changes When Switching from In-person to Online

	In-person (%)	Online (%)	X^2	p	Effect size (V)
Counties					
Oakland	74 (76%)	56 (62%)	10.83	0.013	0.240, moderate
Macomb	8 (8%)	7 (8%)			
Wayne	8 (8%)	23 (26%)			
Other*	8 (8%)	4 (4%)			

* The students attending schools located in counties outside of Southeast Michigan were combined into the “Other” category. Seven of the online students did not report their school, while one attended an online academy. These individuals were not included in the analysis. The percent shown is the number of individuals in each subcategory out of the number of students that participated online with data (n=98) and in-person (n=90).

Supplemental Table 5: Mann U Whitney Test Statistics

	n	U	Z	p
Online _{cities}	82	2281.00	4.04	<0.001
In-person _{cities}	87			
Online _{Oakland}	50	1266.00	2.36	0.018
In-person _{Oakland}	68			
Online _{Oakland}	23	22.50	-2.48	0.013
In-person _{Oakland}	6			

Supplemental Table 6: *Chi-square Test Results In-person vs. Online*

	In-person (n%)	Online (n%)	χ^2	p	Effect size (V)
High URM	12 (14%)	22 (28%)	4.83	0.028	0.170, small
Low URM	75 (86%)	58 (73%)			
High EDS	7 (8%)	29 (36%)	19.61	<0.001	0.343, moderate
Low EDS	80 (92%)	51 (64%)			

Ten of the in-person students attended private school and one of the public high schools did not have data available in the NCES database. Seven of the 98 students that participated online did not report their high school, eight attended a private school, one was homeschooled, and two of the public high schools did not have data available in the NCES database.

Supplemental Table 7: Fisher's Exact Test Results by School Type and Completion Rate for Students that Participate Online

	Completed n (%)	Incomplete n (%)	p	Effect size (V)
High URM	17 (77%)	5 (23%)	0.105	0.224, moderate
Low URM	54 (93%)	4 (7%)		
High EDS	26 (90%)	3 (10%)	1	0.022, negligible
Low EDS	45 (88 %)	6 (12%)		
AA	17 (89%)	2 (11%)	1	0.008, negligible
Standard	56 (89%)	7 (11%)		

There were 82 students that attended public schools, but data for two of the schools were not reported in the NCES database.

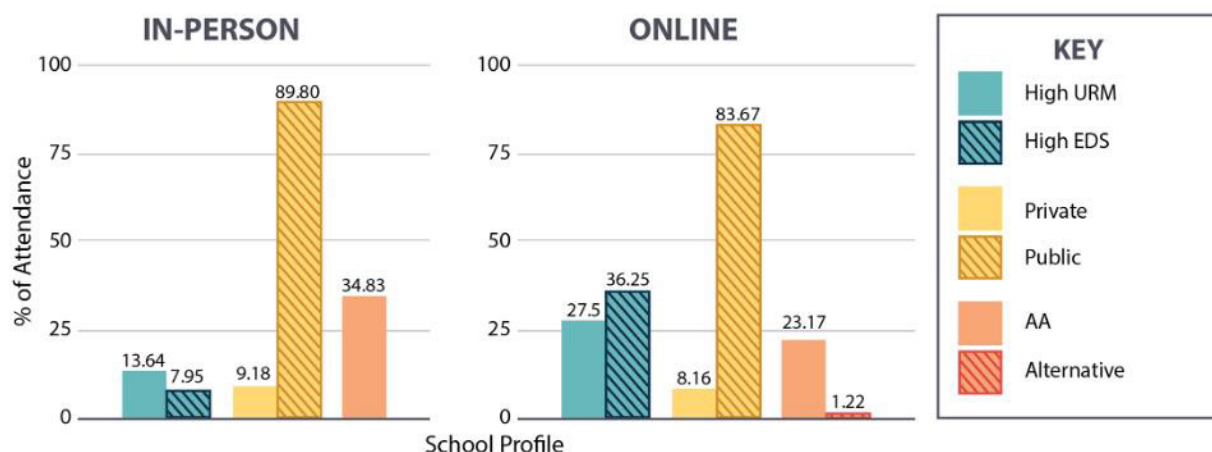
Supplemental Table 8: Participants' Grades for the In-Person and Online Programs

	In-person n	Online n
Grades		
Freshman	0	12
Sophomore	36	27
Junior	53	29
Senior	9	27

Three of the students that participated online did not report their school grades and were recorded as unknown.

Supplemental Table 9: Comments of students that support that they found the program to be beneficial and enjoyable

Participants that complete the online program have high rates of satisfaction: The following program evaluation quotes speak to how the program addressed the diversity of learning needs and perceptions of the participant's satisfaction with the program.	
The end-of-program survey was used to assess participants' perceptions. The program was well-received by the participants, reflecting previously published findings for the in-person program 11. Ninety-four percent of participants strongly agree or agree with the statement, "I believe that participating in this program will be useful for my future career choice" median (IQR)= 5 (1). In addition, 89.2% of participants strongly agree or agree with the statement, "I found the program interactive and engaging" median (IQR)= 5 (1).	
Prompt	Quotes From Students
Examples of responses to a prompt asking participants to briefly compare their experience in this online course to other online education experiences:	"This program was very organized and self-paced compared to other virtual learning opportunities. I got all of my work beforehand and had the chance to structure my time and learning. The instructors were highly energetic, encouraging, and helpful! I was treated equally and got a glimpse of the college experience."
	"This had a variety of different learning techniques. I was more engaged and had a chance to talk to more professionals and even discuss with my peers on these topics."
	"This online course was much more engaging (videos, Ted Talks, games). Having quizzes that were graded helped me to push myself to learn the material."
Examples of response to a prompt asking for additional thoughts	"This program was very well organized, and I learned a lot throughout the course. I am used to more synchronous lecture[s] than asynchronous work, but the modules were engaging and easy to navigate. I feel that there was quite a lot of work the first two days compared to the last three (especially because I took notes on the content)."
	"This summer program was truly enriching and a fun, valuable experience. I don't usually prefer going into breakout rooms, but I found myself initiating conversation and adding to the discussion just as my peers were; everyone was willing to contribute their thoughts and be engaged in the discussion. It was helpful hearing their perspectives as well, and the reflection questions were broad and open for many thoughts. In contrast to my other academic experiences, the content covered a wide scope (not just anatomy and traditional science) and left me with a lot to reflect on and maybe even learn about in my own time. The career panel was cool because there's not usually a lot of opportunity to attend things like that - I got some valuable insight from the speakers. I'm sure this OUWB summer program will be of value to me as I pursue university, and I hope many others can easily reach and benefit from this type of course. I liked learning from many different professors and faculty who were kind and very helpful. Finally, during this program, I felt supported and included by the teachers and peers alike."
Students commented on the end -of- the -program evaluation about the program's structure.	"This allowed me to take this at a pace that worked for me over the day, which I prefer much more than having to do things only during certain hours, and allowed for more flexibility in hours to learn and enjoy life."
	"I felt more independent in this program. Everything was incredibly flexible, so I could complete things at any time of the day and still accomplish tasks at home. I feel more comfortable with taking online classes (due to COVID) when school resumes."
	"Thanks for including transcripts for many of the lectures. I'm hard of hearing, and they were really helpful."
	"This experience gave us a chance to meet on zoom with others for a short amount of time to reflect and talk about the day's topics, and then we were able to work independently on the different modules and work at our own pace, which was nice. The learning was self-paced and gave us more independence to work in our own time, and it allowed us to learn these topics in our own ways."



Supplemental Figure 1. Profile of the schools attended by students when in-person and online. The percent of students attending schools with high numbers of URM or EDS, private schools, public schools, accelerated or advanced schools with a selected population (AA), or alternative schools are shown.