



Latham Science Communication Project

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Showcasing Pathogenic Viruses through Art

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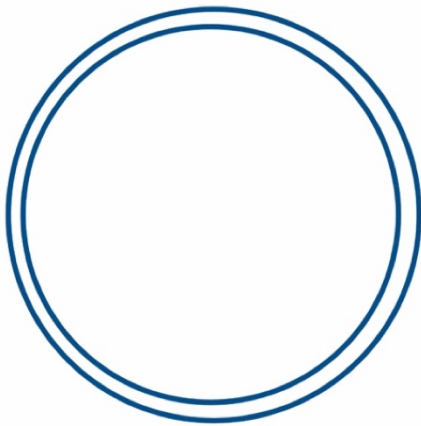
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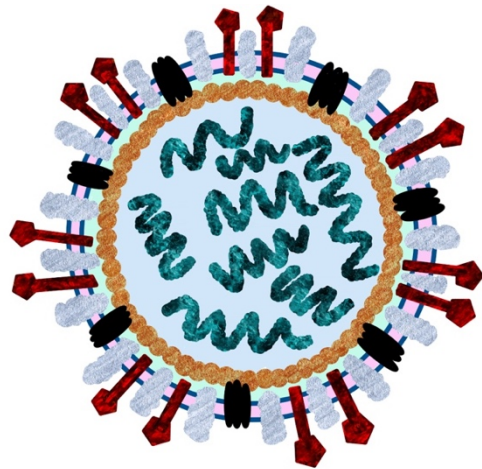
Decrease in vaccinations is leading to increasing numbers of cases for viral diseases. In 2016, in the US, only 86 cases of the measles were reported in 2016. In 2019, a total of 704 cases have already been reported, and the number is continuing to grow (“Measles Cases in 2019”, 2019). As a future physician, I think that it is important to increase awareness of viruses, how contraction can be prevented, their symptoms/modes of transmission, and the importance of vaccinations. Additionally, taxpayer money also goes directly into funding scientific research. Basic science research paves the way for future discoveries and lays down a solid foundation on which scientists can build future therapies for diseases. Viral therapy (i.e. vaccines) research occurs only because they are able to get the funding from the government. Therefore, my goal for this project was to improve scientific literacy, which will enable the public to understand the importance of vaccines and virology research.

I combined my interest in science with my passion for art to create graphical portrayals of these viruses, turning deadly pathogens into captivating images. The artistic portrayal would draw people in, and they can learn more regarding the viruses (their pathology, mechanisms of action, etc.) by accessing the Stem-O-Sphere website containing the informational blogs with the related QR codes. My target audience for this project is undergraduate students, faculty, and staff at the University of Iowa.

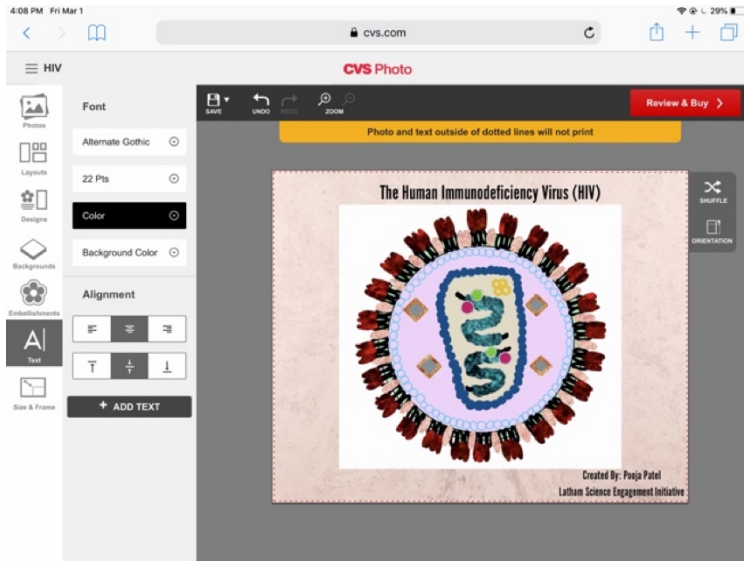
I decided to focus on the following viruses: Human Immunodeficiency Virus (HIV), Ebola virus, Influenza, Zika virus, Hantavirus, Dengue virus, Bacteriophage that causes Cholera, Rabies virus, Hepatitis A/B/C virus, and Human Papilloma Virus (HPV). I drew them digitally—a cleaner way of presenting my images. Each image took several attempts. Influenza, for example, started with **Figure 1** and ended with **Figure 2** after adding many details. I created a video showing how the Influenza virus was drawn and posted it on [YouTube](#).



The first step of drawing the influenza virus (Figure 1).



The last step of drawing the influenza virus—finished product (Figure 2)



HIV layout using the CVS Photo website (Figure 3). The background and text were added to the image using the sidebar options.

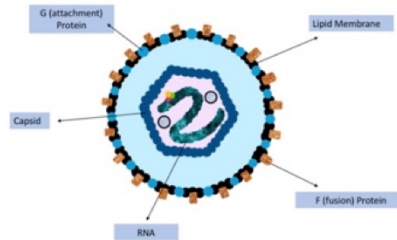
To showcase the images, I chose to use CVS allowed photo panels, 6'x8', which let me individually present each image (Figure 3). Finally, I set up collaborations with Stem-O-Sphere.org and social media platforms to post my content. Each virus image had its own QR code, as shown in Figure 4, which connected to the Stem-O-Sphere website containing the informational blog (Figure 5) This was the digital form of outreach in addition to the social media (i.e. Instagram, Facebook, and Twitter) posts for each virus (Figure 6).

Dengue



Dengue QR code connecting the Dengue image to the informational blog on Stem-O-Sphere (Figure 4).

DENGUE

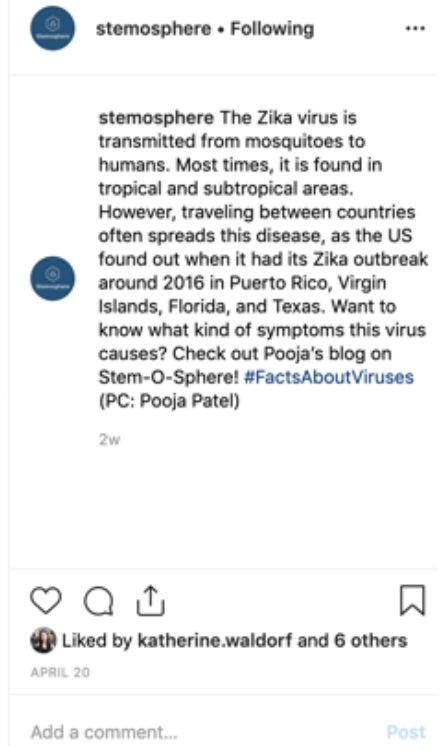


Dengue, also known as breakbone fever, is a disease caused by mosquitoes. It usually occurs in areas of subtropical and tropical weather. According to the Centers for Disease Control and Prevention (CDC), dengue is on the rise. Before the 1980s, Central and South America saw no incidences of dengue. However, now a majority of the countries in these areas have dengue infections. Additionally, the transmission rates have increased so much that, currently, 40% of the world is at risk. According to the World Health Organization (WHO), the mosquitoes that carry this disease are called *Aedes albopictus* and *Aedes aegypti*. These are the same mosquitoes that carry Zika (you can read more about this virus under the Zika virus tab)! Fun fact: only female mosquitoes bite humans, and because of this, the female mosquitoes transmit the infection. Isn't that interesting?

Dengue Stem-O-Sphere informational page (Figure 5).



tagram.com/p/2025681892191512791/
Zika Instagram post (Figure 6).



The main venue for this project was the Spring Undergraduate Research Festival (SURF), (Figure 7). I met with the Assistant Director for the Iowa Center for Research by Undergraduates to partner with ICRU two weeks before the event to set up the details. During SURF, a table was set up showcasing all of the photo panels of the viruses (Figure 8). I presented to people who stopped by my table (Figure 9).

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Major: Biomedical Sciences

Mentor: Lori Adams (Biology, Latham Science Engagement Initiative)

Program listing for my project at SURF (Figure 7).

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Photo panel set-up at SURF (Figure 8).



Presenting to people at SURF (Figure 9).

At SURF, I was able to present my project to 35 individuals. 15 out of the 35 people had enough time to fill out a small survey regarding the information. Everyone said they learned something new, and I received great feedback. In terms of improvement, most people said, “the images larger could be larger,” which was a limitation due to the budget. In terms of digital outreach on Stem-O-Sphere.org, Google Analytics were used. The website had 25 pageviews, out of which 7 were unique pageviews. **Table 1** shows the statistics for the social media posts.

Social Media Platform	Total Reaches	Total Engagements
Facebook	972	92
Instagram	302	69
Twitter	782	12

Total reaches and engagements on social media (Table 1).

For future directions, I am continuing my partnership with ICRU and creating posters with the information and art from my project. These posters will be housed in the ICRU office in Gilmore Hall at the University of Iowa. Additionally, I will be presenting my project at “Science Thursdays”, an event held by the Carver College of Medicine throughout the late spring/summer.

One lesson that I learned through this project is flexibility in planning. I originally planned on presenting my project to the Mini Medical School, however, they were not able to do so. Therefore, I had to improvise and find another event. I also learned that some projects take time and patience. It took numerous hours of work (and re-do’s) to create the images for the project, however, it was definitely worth it!

References:

Measles Cases in 2019. (2019). Retrieved from: <https://www.cdc.gov/measles/cases-outbreaks.html>.