



Robert Frawley PhD
Lead Community Scientist
www.biobus.org

4/18/2021

Dear Professor Kaiser,

This letter is to document the work done by Ahmed Alzubairi in the service of BioBus Inc, a science outreach non-profit organization based in West Harlem during the spring 2021 semester. Ahmed offered his coding and web development skills to help BioBus launch the first digital iteration of an educational card game designed by students with the goal of teaching about the steps of a viral infection. This game, "Going Viral", was developed as an analog card game and the mechanics were tested with college student interns in the summers of 2019 and 2020. In the fall of 2020, BioBus was able to hire a biomedical illustrator to create original artwork for much of the card game, and we refined the game design and branding.

Because of closures to schools and after-school groups, BioBus sought to make the game playable online. We looked into contractors, volunteers, and even leveraging the experience of our staff in web-design and coding, but realized that digitizing the game was outside of our means this academic year. However, Ahmed was able to take the game and create a fully operable, playable, web-based game for us!

The game has several specific requirements:

- Players needed to be able to join through a browser
- Within gameplay, players to tally points (in gameplay called "ATP") for purchases
- Purchases had to be possible at the player's discretion
- Players needed to be able to store stage information (progressing from 0 to 5)
- Effect cards needed to accurately and automatically change players' ATP or stage as the rules described
- Players needed to have agency in playing specific effect cards
- The game needed to be robust to unexpected moves
- The coding needed to preclude cheating or simple hacks
- The game needed to recognize a winner to end gameplay
- The game needed to have a branded and neat user interface
- The game needed to have space for our content developers to add information about the viruses, the effect cards, the stages, and further education content as it is developed
- The code had to be clearly annotated and modular such that any future designer/developer could pick up the script and easily modify any elements of the game desired.

It is my pleasure to report that Ahmed completed all of these items, checking in regularly, accepting feedback and making modifications to order. This web-based Going Viral game is a huge asset we will be able to use with students and supplement our lessons. There are future

plans for building out the game and that will be easily possible with the platform and scripts Ahmed created for us.

If you have any questions about the work Ahmed has done or the nature of the game, please don't hesitate to ask.

Best,

A handwritten signature in black ink, appearing to read "Rob Frawley". The signature is fluid and cursive, with the first name "Rob" and last name "Frawley" clearly distinguishable.

Rob Frawley PhD

rob@biobus.org

516-492-4945