



# Clinical Virology Research Volunteer at Hackensack University Medical Center

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## Introduction

For the month of January 2020, I volunteered at Hackensack University Medical Center in the Department of Clinical Virology. I assisted Dr. Gary B. Munk and the lab technicians with filing patient-related information and the transportation of sample specimens between laboratories. Additionally, I compiled and analyzed data for scientific preparations, specifically examining the trends of the flu virus.

## Site Information:

Hackensack Meridian Health / University Medical Center

30 Prospect Ave, Hackensack, NJ 07601

Dr. Gary B. Munk, Director of the HUMC Department of Clinical Virology

The Department of Clinical Virology at HUMC performs intuitive viral testing, including direct antigen and antibody detection, culture isolation and identification techniques, and nucleic acid amplification detection systems. The laboratory is in collaboration with the World Health Organization, the US Influenza Surveillance System, and the CDC.



A view of one section of the lab. Specimens are stored in the refrigerators in the front, right side of the image. A work bench/hood is behind them on the right side.

## Favorite Experience:

One of my favorite and most value experiences while volunteering for the Clinical Virology Department was attending a conference led by the Pharmacy Department at HUMC regarding the regulation and treatment of pneumonia. The directors of each department (Pharmacy, Virology, etc.) met with the head physicians and ER staff to review the new research, discuss the findings, and plan ways to incorporate it into the treatment system at HUMC. It was interesting to see the collaboration between each of these medical professionals, especially because I plan on attending Pharmacy School and hope to work as a PharmD in a clinical setting.

## Future Work:

Given the current state of the world, due to the impacts of the COVID-19 virus, I have a greater appreciation and understanding for all the hard work done at the testing facilities. As we did with the flu virus during January, it would be very interesting to examine the ages, genders, and locations of the individuals infected with COVID-19.

## Activities:

- Examined and analyzed the flu test results (lots of cases in January due to flu season). I helped Dr. Munk to interpret trends of the flue virus based upon the strand of the virus, A and/or B, and the age of the individual infected. This information is extremely important for following the effectiveness of the year's vaccine and the locations in NJ where the most cases are present.
- Sat in on conferences and meetings among the different departments in the hospital regarding new research findings and treatment plans for patients
- Organized and filed all patient related information. This commonly included test results which needed to be sorted by the virus being investigated (flu A, flu B, MMR, c. diff toxin, HVP, HIV, etc.) and the testing technique or method used.
- Transported and labeled blood, mucous, and stool samples to and from the virology lab and the microbiology lab



My volunteer ID badge and shirt I wore each day at HUMC.

## Issues Confronting Site:

Since the Clinical Virology Lab is constantly handling and testing specimens from in-patients and out-patients in the northern NJ area. Cleanliness and contamination were important, as we were required to thoroughly wash our hands each time we enter and exit the lab, as well as wear full lab coats and gloves while in contact with any surface in the lab.



One of the many PCR machines in the lab. Polymerase Chain Reaction (PCR) is a method used to study DNA by amplify a small sample.

## Acknowledgments:

I would like to thank Dr. Holtz & Dr. Merck for their invaluable contributions to the Science and Global Change Program. Their passion and knowledge made colloquium, excursions, and field trips amazing learning environments and experiences. My time in SGC has truly impacted me and has inspired me to pursue a minor in Sustainability. I would also like to thank Dr. Munk and the lab technicians for being phenomenal mentors and educators.

