From left: Research assistants Carmen Mei and Diljot Singh work with Frank Merante of the School of Biological Sciences & Applied Chemistry to produce key proteins associated with COVID-19 for use in an immunodiagnostic device. (Photo: submitted)

# Seneca teams up with industry partners to combat viruses

## Two applied research projects conducted on campus

**June 25, 2020**

Researchers at Seneca are working to develop an easy and simple diagnostic test for COVID-19 that could be done at doctors' offices and pharmacies without having to send samples to laboratories for analysis.

The School of Biological Sciences & Applied Chemistry (/school/biological-sciences-and-applied-chemistry.html) is collaborating with Kenota Health (https://kenota.com/), a Kitchener-based medical technology company, to produce three key proteins associated with COVID-19 for use in an immunodiagnostic device.

The device would be used at points of care for on-the-spot testing for COVID-19. The rapid turnaround time of the test will provide useful clinical data to health-care professionals and dramatically reduce wait times for results. It will also lead to lower costs for the testing.

Seneca was awarded $46,841 for the joint initiative by the Natural Sciences and Engineering Research Council of Canada's (NSERC) Applied Research Rapid Response to COVID-19 (https://www.nserc-crsng.gc.ca/Innovate-Innover/CCI-COVID_eng.asp) program.

While Seneca has gone virtual, the biosciences laboratories have been abuzz with activities for the past two months as a team of researchers and analysts work to develop the proteins for the Kenota device.

"Most pharmaceutical companies give themselves two to three years to develop a product like this while we have given ourselves two to three months to produce three products," said Frank Merante, a PhD in biochemistry and co-principal investigator of the project at Seneca.

## Antimicrobial spray

In another project, work is underway at Seneca's labs to produce a long-lasting antimicrobial spray to sanitize surfaces. The spray could be used to stop the coronavirus and other respiratory viruses from spreading on all types of porous surfaces in large public spaces such as transit terminals, daycare centres and fitness centres.

The project is a collaboration with Giftgowns (https://www.giftgowns.com/), a Toronto-based company that produces specialty hospital gowns. While Giftgowns initially approached Seneca to develop an antibacterial spray for use on the garments, it revised its objective following the COVID-19 outbreak to produce an antimicrobial spray that would be more effective against viruses, including the coronavirus.

"The spray will not only inactivate the virus," said Barkev Keoshkerian, co-principal investigator of the project at Seneca, "it will also have a long-lasting effect over days and perhaps weeks."

Preliminary results from testing on surrogate viruses are already in and will soon be submitted to Health Canada for verification. If the results are accepted and Health Canada does not require testing on the actual coronavirus, Giftgowns would be able to market the antimicrobial spray within the next six to nine months.

In addition to addressing some of the challenges of the COVID-19 outbreak, the research projects are enhancing Seneca's applied research program and providing invaluable opportunities for graduates like Diljot Singh.

Mr. Singh is one of four research assistants working on both the Giftgowns and Kenota projects. An international student from India, he recently graduated from the Biotechnology – Advanced diploma program (/programs/fulltime/BTA.html).

"Being able to research on such important projects is really great for my future," he said. "I'm learning a lot."

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1750 Finch Avenue East
Toronto, Ontario, Canada
M2J 2X5

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