



**SERV:  
SUNNYBROOK'S  
COVID-19  
RESEARCH GROUP**

---

## SERV: Sunnybrook's COVID-19 research group



Pictured left to right: Dr. Robert Kozak, Dr. Samira Mubareka and Dr. Arinjay Banerjee, who were the world's first team to isolate the virus that causes COVID-19.

### At the forefront of COVID-19 research and care

Sunnybrook has been at the global forefront of the COVID-19 pandemic since the first Canadian case was identified. Our clinical response was immediate, but crucially, so was our research response.

Drs. Samira Mubareka and Robert Kozak have led Sunnybrook's research response efforts since the earliest days of the pandemic. Their work has been globally significant, leading to early implementation of a hospital-based COVID-19 test. That test now serves at least six major hospitals and their associated assessment centres, including Sunnybrook. Our team has also established the foundation for a viral genomics research program that has already made important contributions to COVID-19 analysis.

**Most crucially, on March 10, 2020, Sunnybrook scientists isolated severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the agent responsible for the ongoing outbreak of COVID-19.**

Thanks to nimble collaboration, our team was able to culture the virus from two clinical specimens in a Level 3 containment facility. The isolated virus will help researchers in Canada and across the world develop better diagnostic testing, treatments and vaccines, and gain a better understanding of SARS-CoV-2 biology, evolution and clinical shedding.

### What's next?

**Now that the virus has been isolated and a test created, thanks to your investment, we will launch the Sunnybrook Translational Research Group for Emerging and Respiratory Viruses (SERV), an ambitious research program that builds upon existing facilities and expertise.**

Dr. Mubareka will lead a team of scientists deeply experienced in viral transmission, diagnostics and vaccine development. The team will continue to collaborate closely with scientists at University of Toronto, McMaster University and University of Laval to consolidate and focus our resources where they are needed most: stopping the COVID-19 pandemic.



**“We need key tools to develop solutions to this pandemic. While the immediate response is crucial, longer-term solutions come from essential research into this novel virus.”**

– Dr. Samira Mubareka, microbiologist and infectious diseases physician at Sunnybrook

---

## SERV: A research group dedicated to COVID-19

The **Sunnybrook Translational Research Group for Emerging and Respiratory Viruses (SERV)** is a dedicated COVID-19 research response group, focusing on the following three critically important areas of study:

### 1. Virus biology (genomics)

Identifying the genetic sequence of a virus is an essential step for identifying key targets for treatments and vaccines. It also tells the story of origin and its relation to other viruses. This approach provides precision genomic data, which will be essential for outbreak investigation. Funds for SERV will help Sunnybrook scientists to turn around whole genome viral sequences at the site of care: Sunnybrook.

### 2. Vaccines and therapeutics

Our ability to identify and isolate the virus that causes COVID-19, based on samples from infected patients, allows us to collaborate on antiviral research and conduct our own vaccine and transmission work. With funds for SERV, Sunnybrook will share our findings about the virus within the Canadian research and diagnostic community, thereby driving further innovative solutions to the COVID-19 pandemic.

### 3. Transmission prevention

As part of a World Health Organization's effort to evaluate risk to health-care workers of providing certain support measures, such as high-flow oxygen use, Sunnybrook is building a simulation space for live virus experiments using mannequins with funds for SERV. We will also be able to measure virus emission from non-infected and infected patients. We have already completed sampling on our first admitted case, and with your support, we will continue to advance this work. This is important because protecting care providers is key to preventing the spread of the virus within hospitals.



**Your investment will be instrumental as the world continues to respond to the global threat of COVID-19.**

**You are supporting research that will impact millions worldwide.**

### **You are making a difference**

**Your investment is enabling Sunnybrook to launch SERV, a focused, collaborative COVID-19 research response program. Your support for this extremely time-sensitive research at Sunnybrook is being put to work immediately toward our human and operational funding needs to rapidly accelerate research into COVID-19.**

**Now is the time to dedicate as many resources as possible to stopping the spread of this highly contagious virus. The lives of countless vulnerable people, in our communities and globally, depend on it.**

**Thank you for your vision and leadership. Your investment will have a direct impact on patients at Sunnybrook, across Canada and around the world.**

**Thank you for helping Sunnybrook invent the future of health care.**

---