



uOttawa



STOP THE
SPREAD

OTTAWA

THE UNIVERSITY OF OTTAWA SEROLOGY AND DIAGNOSTICS HIGH-THROUGHPUT FACILITY

HAMILT

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University of Ottawa

**HALTE À LA
PROPAGATION**



**STOP THE
SPREAD**



Coronavirus Variants
Rapid Response
Network



Réseau de réponse
rapide aux variants
du coronavirus



uOttawa

Faculté de médecine
Faculty of Medicine

Director:

Marc-André Langlois

Facility Head:

Corey Arnold

Operations Manager:

Danielle Dewar-Darch

Compliance Officer:

Gwendoline Ward

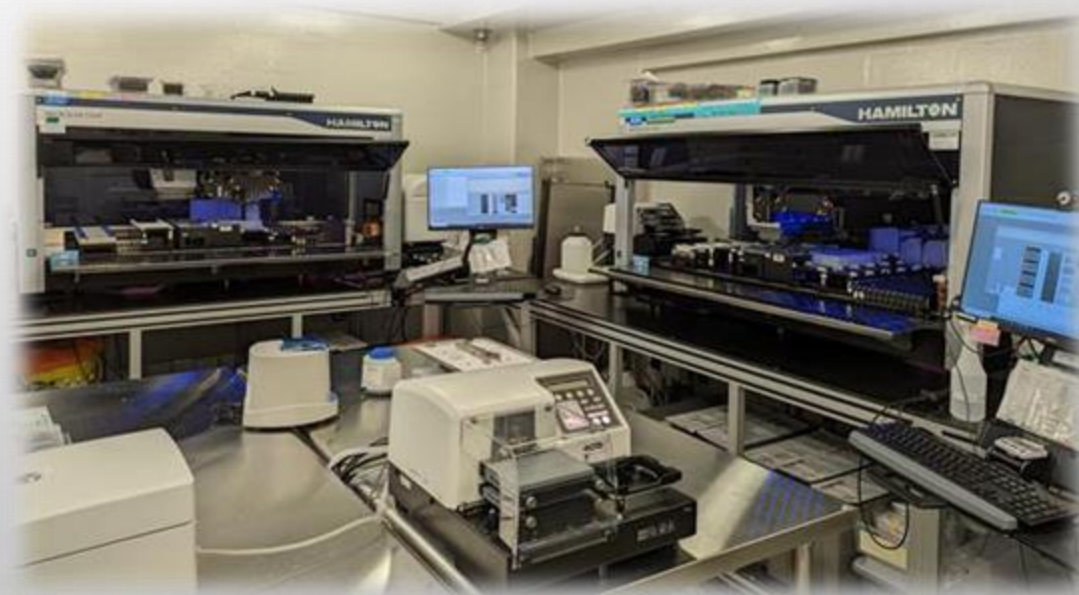
Technical Staff:

Justino Hernandez Soto

Abishek Xavier

Nicholas Bradette

Klaudia Baumann



FACILITY PLATFORM

2 Hamilton Microlab STAR liquid handlers

- Fully integrated with plate washer and plate reader

Types of sample: **serum, plasma, dried blood spots,**
saliva, amniotic fluid, breast milk

Assays

ELISA

- SARS-CoV-2 Spike, Receptor Binding Domain, Nucleocapsid
- Spike of Seasonal CoV strains
- IgG, IgA, IgM, IgG subtypes

5-Point Surrogate Neutralization ELISA (snELISA; AC Gingras)

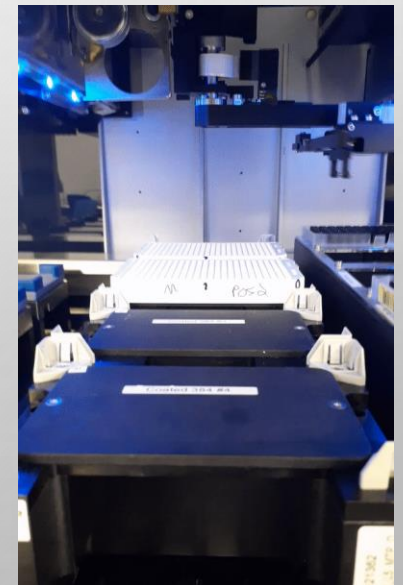
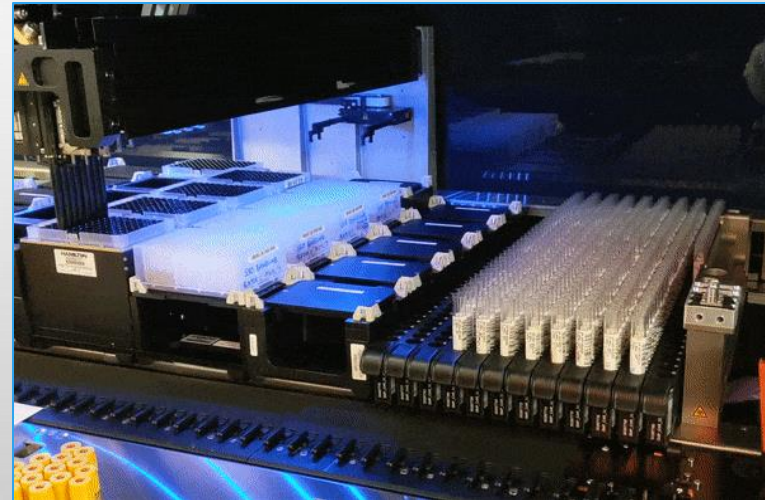
- SARS-CoV-2 Spike (Wuhan and Variants of concern)

Throughput

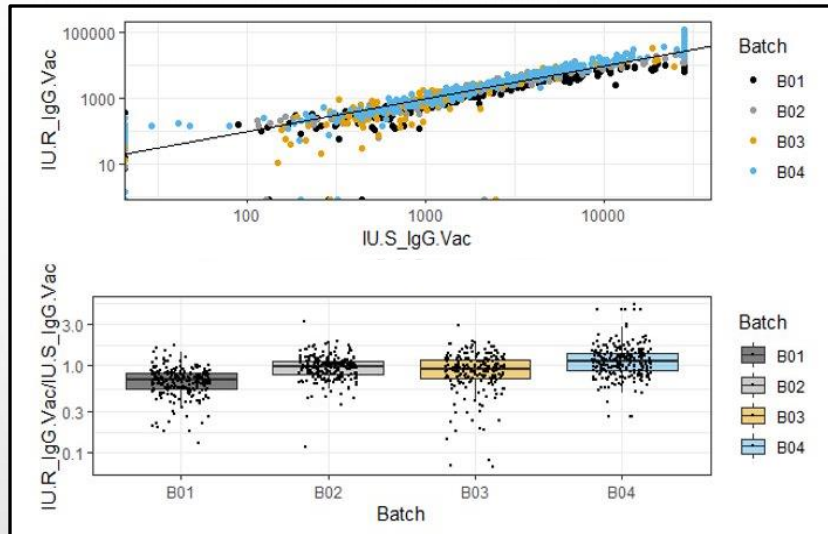
Perform 800,000 biochemical assays per year

ELISA - 320 samples per run

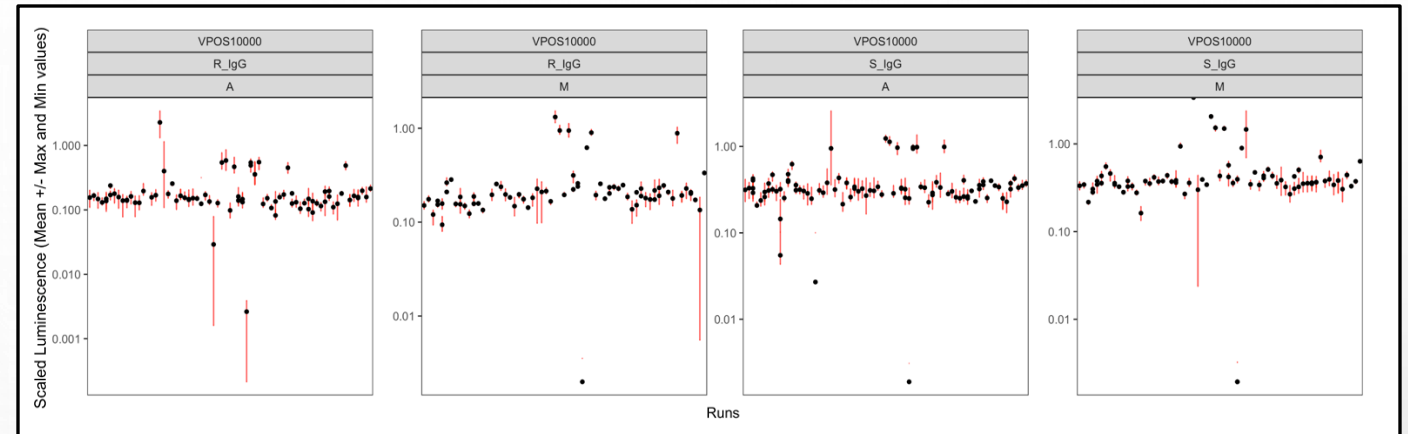
5-point Surrogate Neutralization ELISA - 248 samples per run



DATA QUALITY CONTROL AND HARMONIZATION



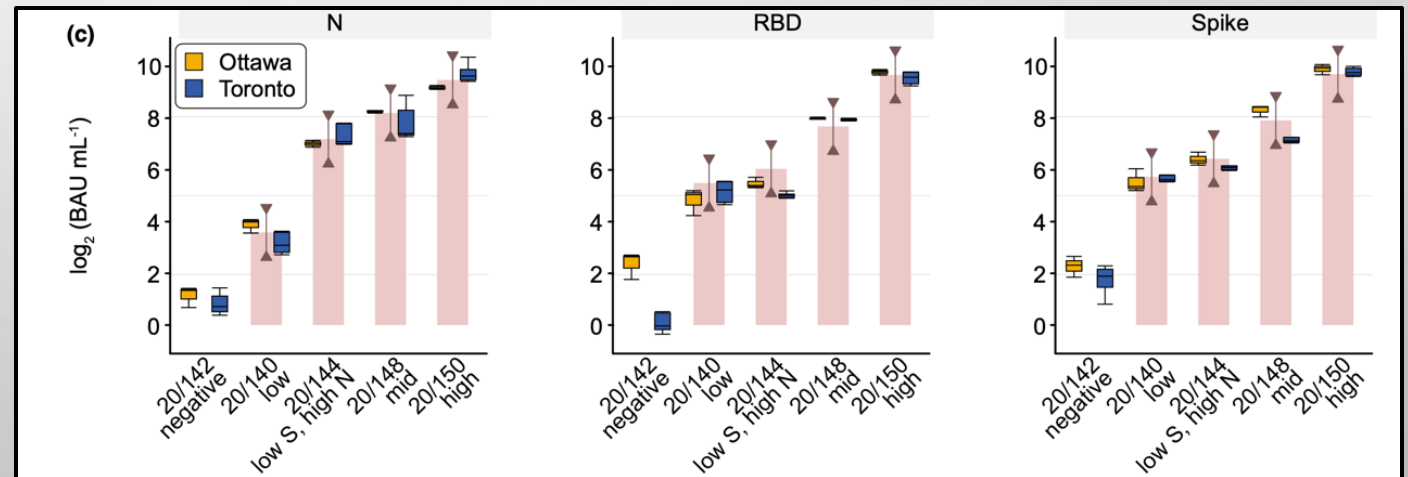
Batch-to-batch variability



Longitudinal tracking of controls and run metadata

- On-plate standards and controls
- Material lot numbers
- Reagent preparation date
- Sample positions
- User
- Environment (temperature, humidity)

Harmonization of assay performance and titer calculations with partner laboratory in Toronto



PARTNERSHIPS AND COLLABORATIONS

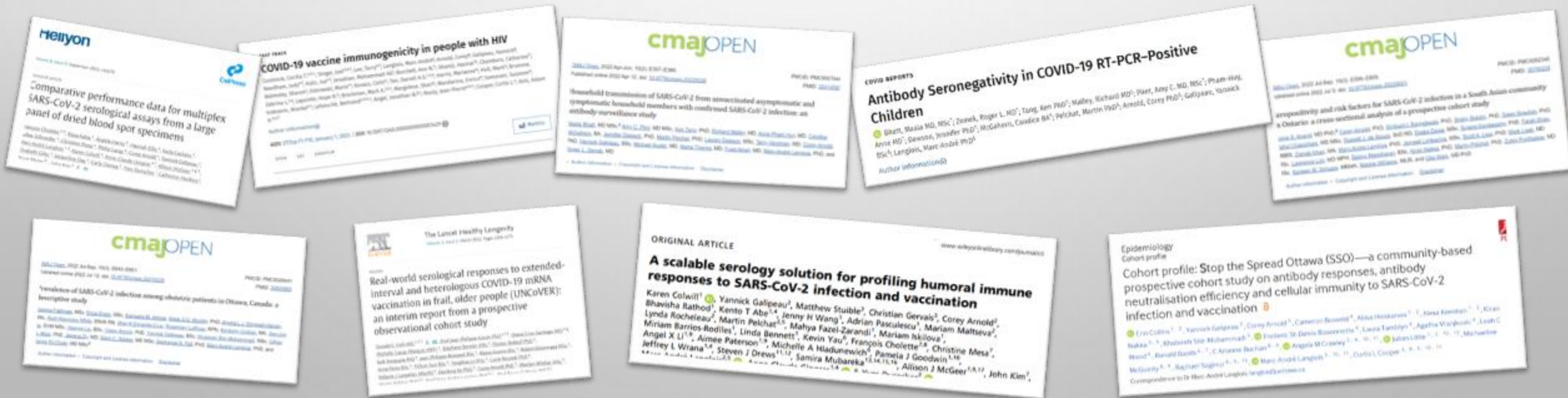
Partner for the COVID-19 Immunity Task Force (CITF)

Partner for Statistics Canada – COVID-19 Seroprevalence survey

Partnership with Public Health Agency of Canada for serological assay validations

Part of CoVaRR-Net, in close collaboration with CoVaRR-Net BioBank

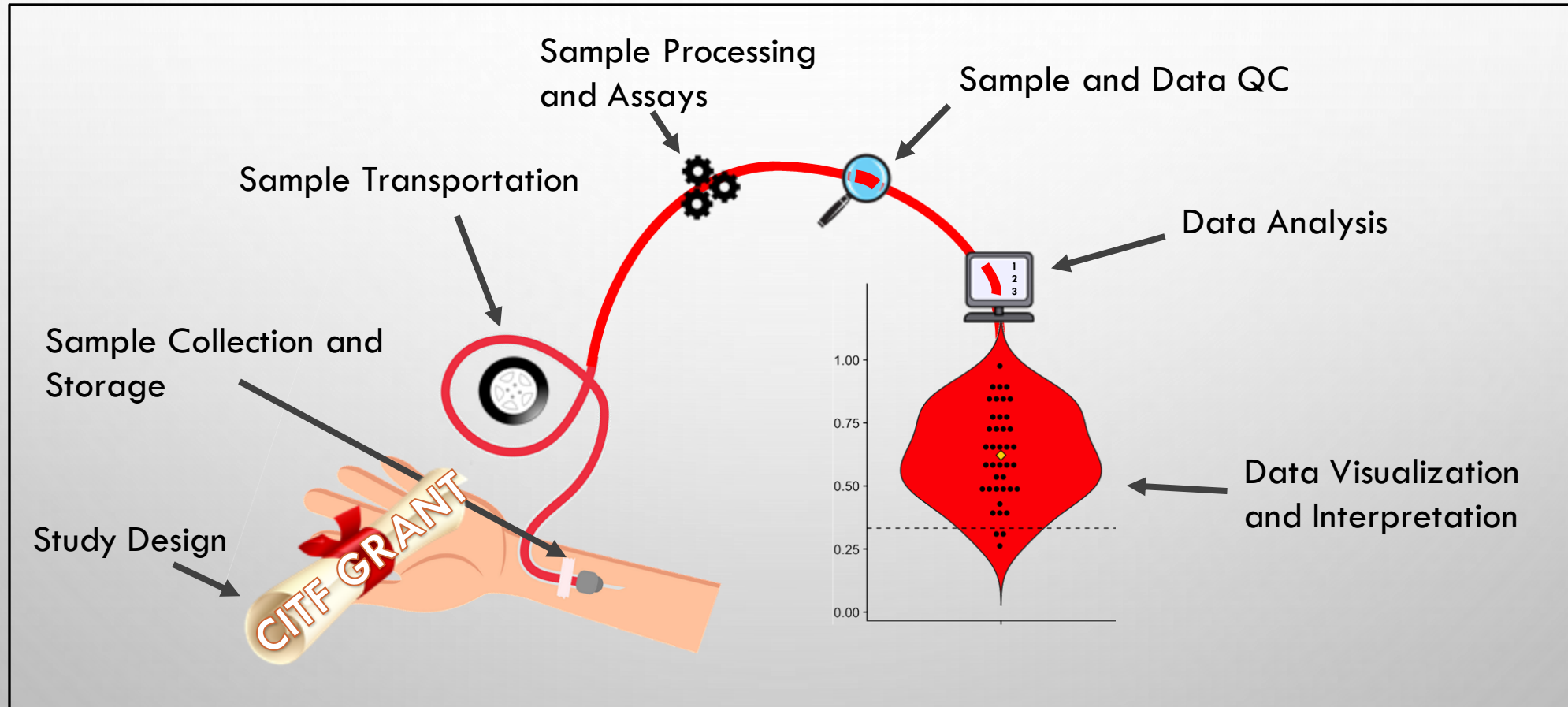
30 collaborative COVID-19 research projects with Canadian Researchers



LESSONS LEARNED

Our expertise needs to go beyond just running assays

Involvement in collaborations from “Vein to Violin” is necessary for success



LESSONS LEARNED

Setting up the facility amid the COVID-19 pandemic was challenging, educational, and rewarding

- “Building the plane as we fly it”

Established infrastructure for pandemic response will greatly benefit Canadian researchers and health initiatives in the future



ACKNOWLEDGEMENTS

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Corey Arnold
Danielle Dewar-Darch
Gwendoline Ward
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Statistics Canada

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