

VPRI Report

- Update on COVID-19 Screening
- Update on Tri-Council Funding applications
- Recent Canada Research Chair Awards



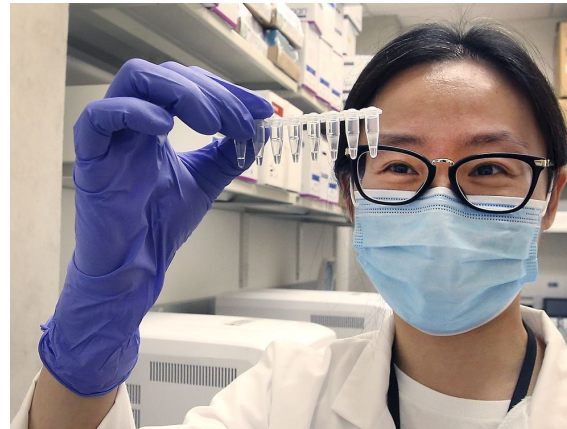
Dr. Michael McKay



Dr. Rajesh Seth



Wastewater
Screening for
Residence
Halls



Dr. Qiudi Geng



Ryland Corchis-
Scott



- Screening: Alumni, Cartier and Laurier in the fall
- Wastewater samples collected twice a week, results next day
- No positivity since late April / early May
- Experience in averting potential outbreak: Open-access journal article
- Case featured: Ontario COVID-19 Science Advisory Table







<https://journals.asm.org/doi/10.1128/Spectrum.00792-21>

Averting an Outbreak of SARS-CoV-2 in a University Residence Hall through Wastewater Surveillance

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ABSTRACT A wastewater surveillance program targeting a university residence hall was implemented during the spring semester 2021 as a proactive measure to avoid an outbreak of COVID-19 on campus. Over a period of 7 weeks from early February through late March 2021, wastewater originating from the residence hall was collected as grab samples 3 times per week. During this time, there was no detection of SARS-CoV-2 by reverse transcriptase quantitative PCR (RT-qPCR) in the residence hall wastewater stream. Aiming to obtain a sample more representative of the residence hall community, a decision was made to use passive samplers beginning in late March onwards. Adopting a Moore swab approach, SARS-CoV-2 was detected in wastewater samples just 2 days after passive samplers were deployed. These samples also tested positive for the B.1.1.7 (Alpha) variant of concern (VOC) using RT-qPCR. The positive result triggered a public health case-finding response, including a mobile testing unit deployed to the residence hall the following day, with testing of nearly 200 students and staff, which identified two laboratory-confirmed cases of Alpha variant COVID-19. These individuals were relocated to a separate quarantine facility, averting an outbreak on campus. Aggregating wastewater and clinical data, the campus wastewater surveillance program has yielded the first estimates of fecal shedding rates of the Alpha VOC of SARS-CoV-2 in individuals from a nonclinical setting.


IMPORTANCE Among early adopters of wastewater monitoring for SARS-CoV-2 have been colleges and universities throughout North America, many of whom are using this approach to monitor congregate living facilities for early evidence of COVID-19 infection as an integral component of campus screening programs. Yet, while there have been numerous examples where wastewater monitoring on a university campus has detected evidence for infection among community members, there are few examples where this monitoring triggered a public health response that may have averted an actual outbreak. This report details a wastewater-testing program targeting a residence hall on

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Editor Heba H. Mostafa, Johns Hopkins Hospital

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 Averting a COVID-19 outbreak on a university campus - clear actionability of wastewater-based epidemiology @McKayGLIER @GLIER@Windsor @ScienceUWindsor @UWindsorEng @UWindsor @TheWECHU

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About Us: The Ontario COVID-19 Science Advisory Table is a group of scientific experts and health system leaders who evaluate and report on emerging evidence relevant to the COVID-19 pandemic, to inform Ontario's response. Our mandate is to provide weekly summaries of relevant scientific evidence for the COVID-19 Health Coordination Table of the Province of Ontario, integrating information from existing scientific tables, Ontario's universities and agencies, and the best global evidence. The Science Table summarizes its findings for the Health Coordination Table and the public in Science Briefs.

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The views and findings expressed in this Science Brief are those of the authors and do not necessarily reflect the views of all of the members of the Ontario COVID-19 Science Advisory Table, its Working Groups, and its partners.

SCIENCE BRIEFS

The Role of Wastewater Testing for SARS-CoV-2 Surveillance

Douglas G. Manuel, Robert Delatolla, David N. Fisman, Meghan Fuzzen, Tyson Graber, Gabrielle M. Katz, JinHee Kim, Chrystal Landgraff, Alex MacKenzie, Antonina Maltsev, Anna Majury, R. Michael McKay, John Minnerly, Mark Servos, J. Scott Weese, Allison McGeer, Karen B. Born, Kali Barrett, Brian Schwartz, Peter Jüni on behalf of the Ontario COVID-19 Science Advisory Table and the Wastewater Surveillance Science and Implementation Tables

Key Message

Wastewater testing for SARS-CoV-2 is relatively new; however, it builds on existing public health surveillance infrastructure. There is a limited but growing evidence base for its use, despite notable interpretation challenges. Wastewater testing results have helped to inform public health policy and interventions during the COVID-19 pandemic in Ontario and other jurisdictions. Wastewater testing for SARS-CoV-2 is useful for early detection of outbreaks and surges as well as population-wide surveillance of COVID-19 that is complementary to clinical testing. Further, it offers an efficient means of SARS-CoV-2 surveillance for specific settings such as correctional facilities, shelters, and university residences. Wastewater testing can also be used for the detection and monitoring of variants of concern (VOCs).

Summary

Background

Wastewater testing has a history of informing public health action through its use to monitor health threats such as polio, antimicrobial resistance, and illicit drug use in populations. It can be used to detect components of SARS-CoV-2.

SARS-CoV-2 has characteristics which pose a challenge for public health surveillance approaches. These include a high rate of transmission by symptomatic, asymptomatic, and pre-symptomatic individuals that leads to missed case detection and an interval between viral transmission to clinical testing that leads to delays in case detection. These characteristics of SARS-CoV-2 infection, along with the observation that SARS-CoV-2 is excreted in stools during all phases of infection, has led to the uptake of wastewater testing to complement SARS-CoV-2 surveillance based on clinical tests and case identification.

Questions

What are the current and future applications of SARS-CoV-2 wastewater testing for SARS-CoV-2 surveillance?

What is required to ensure wastewater testing for SARS-CoV-2 provides accurate, reliable, and actionable information that informs public health interventions for the mitigation and management of the COVID-19 pandemic?

What are the international and Ontario experiences with wastewater testing?

Findings

Evidence of wastewater testing for SARS-CoV-2 to inform a public health response is rapidly evolving, though is currently limited to case reports. In Ontario and other





COVID Screening Platform

#WindsorStrong



The Screening Platform Team

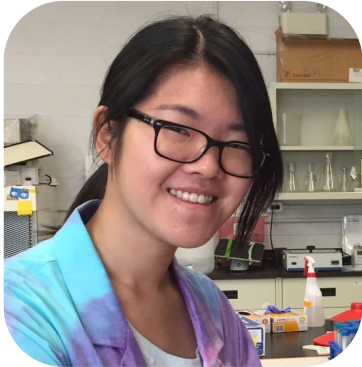
Saliva Screening Study



Dr. Lisa Porter
Oversight



Dr. Yufeng Tong
Oversight

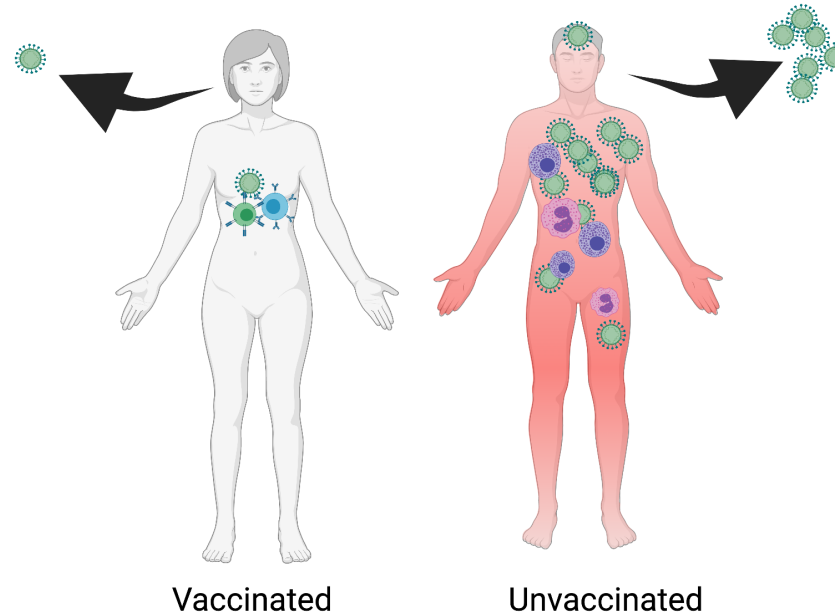


Jackie Fong
Study Manager

- Wastewater Study – Dr. Mike McKay
- Variant Identification – Dr. Ken Ng
- Compliance and Participant Satisfaction – Dr. Kendall Soucie
- Laboratory Managers – Dr. Qiudi Geng and Dr. Robert Gombar
- Laboratory Personnel – Mat Stover and Farinaz Ziaee
- Safety – Dr. Dorota Lubanska in consultation with Sherri Menard
- Data Management Consultant – Kyle Lago (WE-SPARK)
- Data Dashboard Development - Dr. Pooya Zadeh & team



Benefits of Frequent Testing



- Be informed of your own health & reduce worry
- Fast detection of new variants
- Protect people around you
- Keep labs/offices/classes from having outbreaks!
- Help prevent us from going back to lockdowns & keep learning face to face!

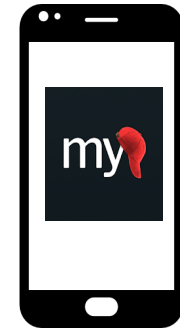
Data Reporting

- Positive participants in pool will be alerted & invited to retest
- Individual testing will be conducted **at CORE location**
- Positive ind. test. Advised to:
 - 1) isolate
 - 2) alert supervisor (if applicable)
- Participants will be given information on clinical testing sites.



qPCR Report

Will be generated along with QR code

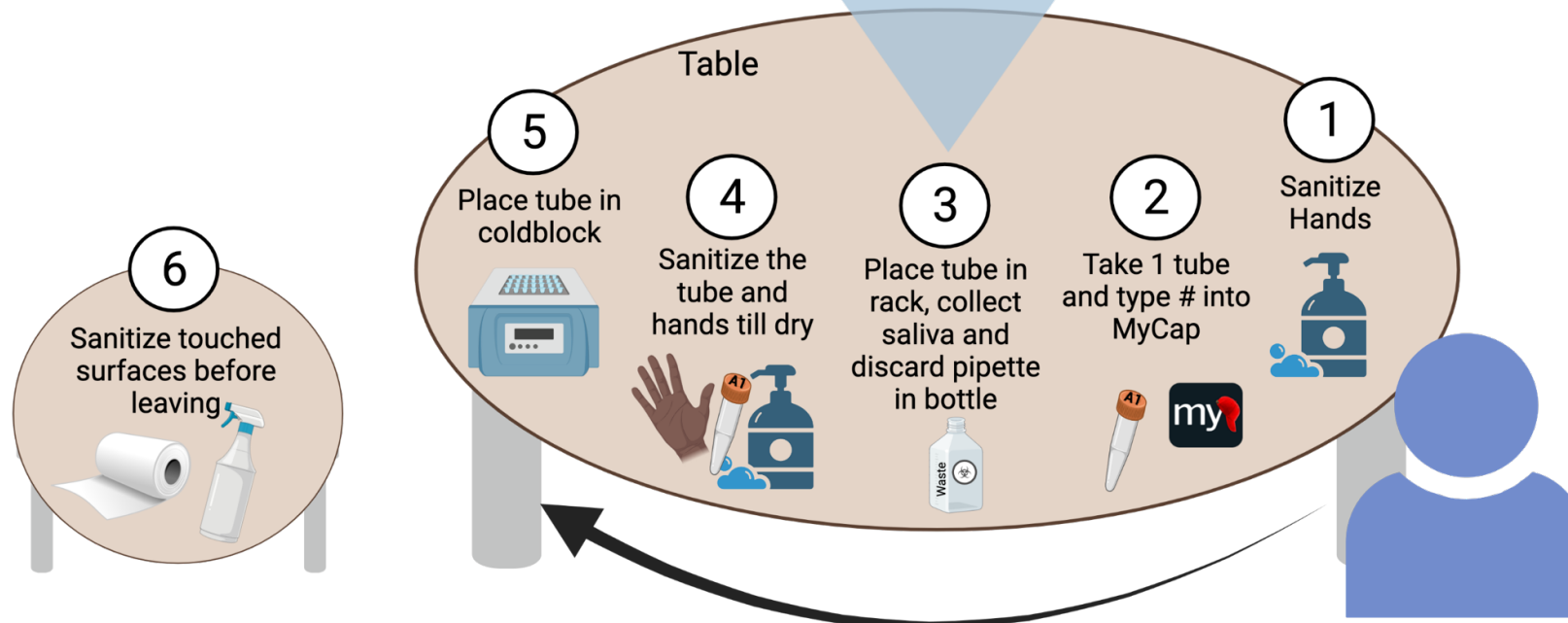
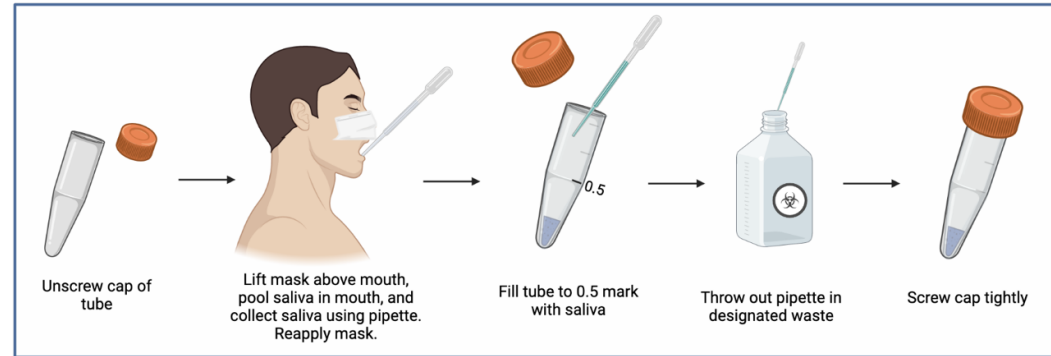


POSITIVE Cohorts Notified

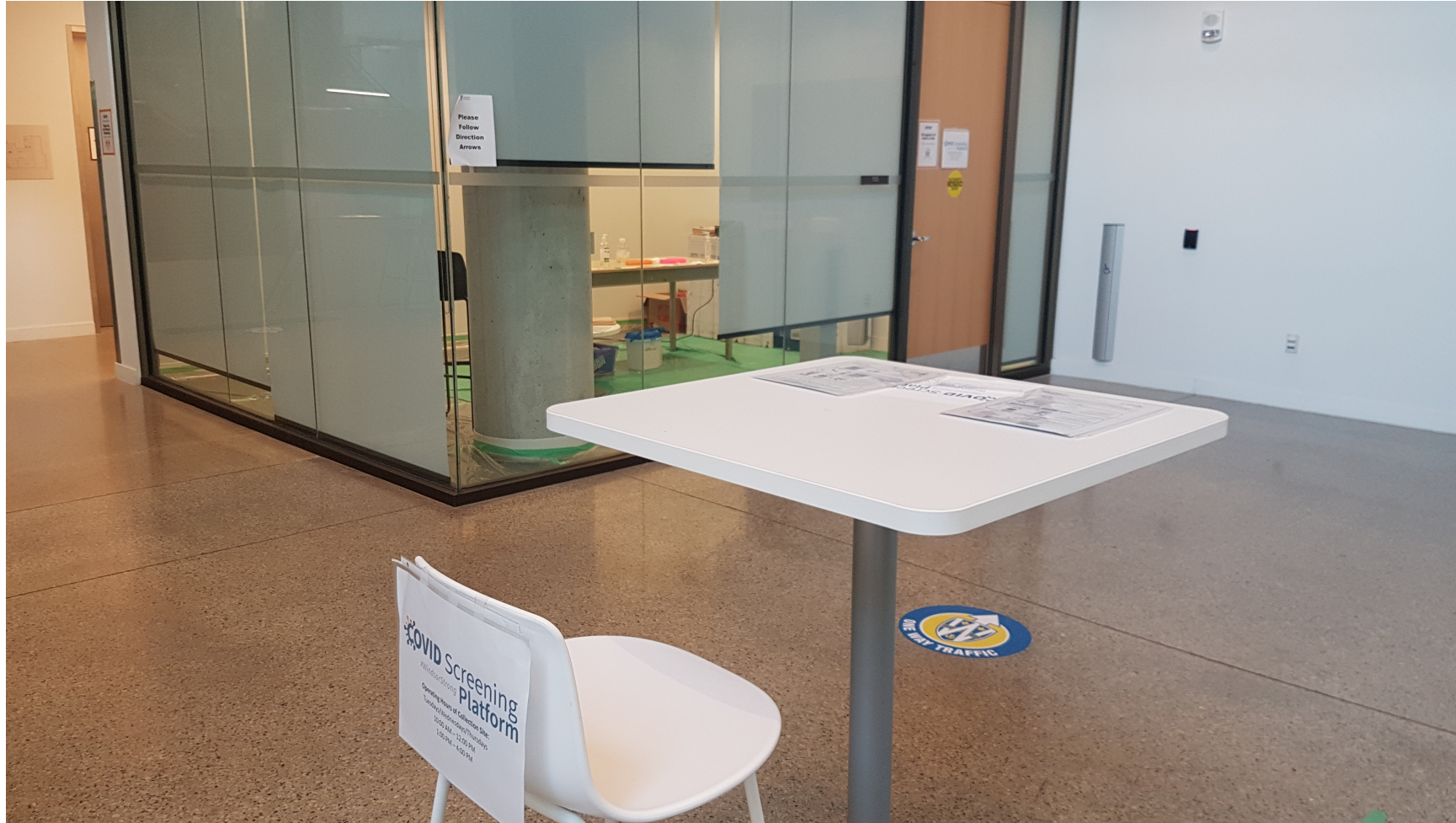
Participants found to be within a positive cohort will be notified and advised to 1) isolate and 2) to get tested at a clinical test site (information provided)



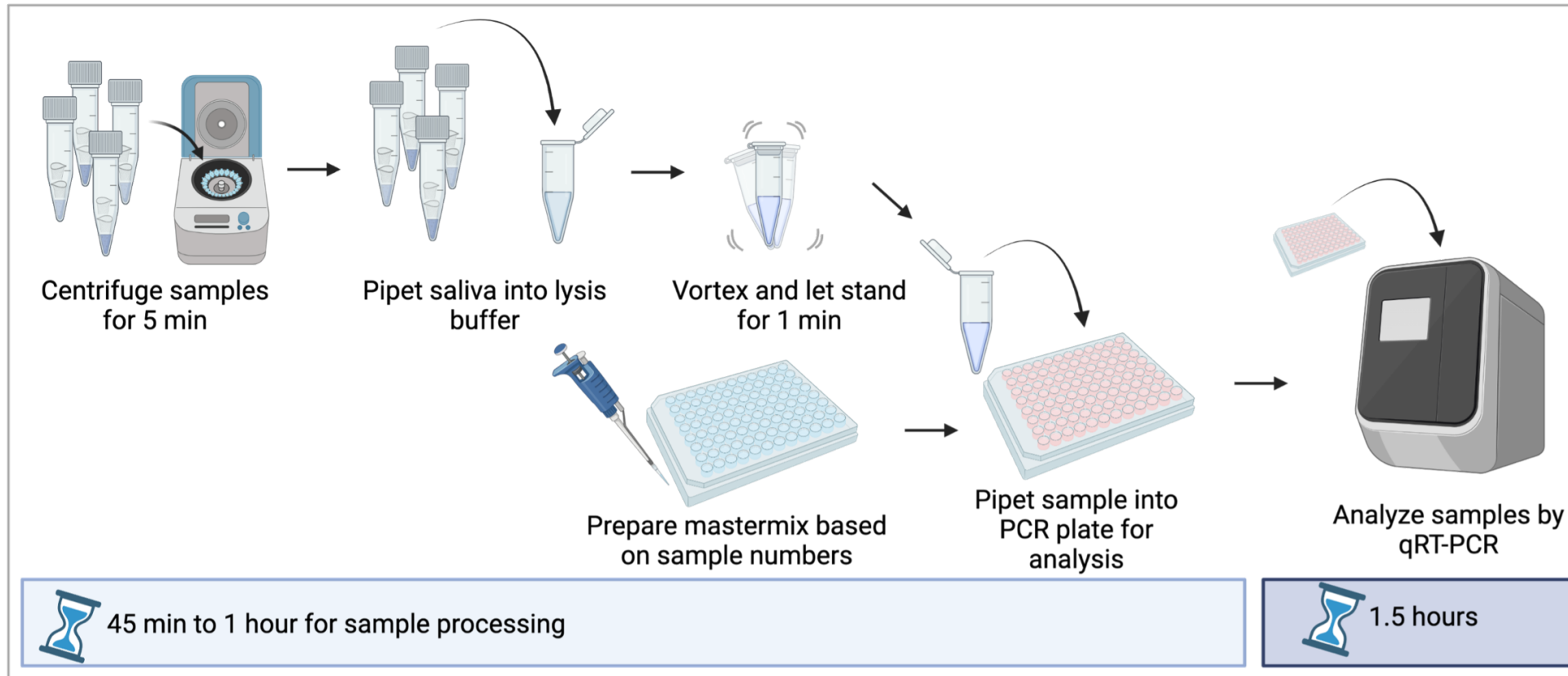
Sample Collection Process



Collection Site at Essex CORe



Sample Processing



Metrics

391

Saliva Samples
Processed

14

Saliva Samples
Processed Weekly

90

Individuals
Screened

< 4

Hours from
Sample Processing
to Results



Tri-Council Funding Applications

- CFI funding envelopes
- CRC allotment
- Federal Research Support Fund
- All funding supports research; Tri-Council funding more important due to multiplication effects
- Sept and Oct: multiple application opportunities



NSERC

- Research Tools and Instruments (RTI): October 25
 - 12 applications
- Discovery Grant (DG): November 1
 - 35 NOIs
- Collaborative Research and Training Experience (CREATE): September 22
 - 2 applications



SSHRC

- Insight Grant (IG): October 1
 - 5 applications
- Partnership Grant (PG): Stage 2, institutional, October 29
 - 2 applications
- Partnership Development (PD) Grant: November 15
 - 2 applications as co-applicants

CIHR

- Project Grant: September 15
 - 6 applications



Recently Awarded CRCs

- **Dr. Ning Zhang**, CRC Tier 2 in Internet of Vehicles, approved June 30
- **Dr. Manoj Mate**, CRC Tier 2 in International Trade Law, approved October 12
- News of both awards are currently under embargoed until public announcement

