


The webinar, “**2019 Update on the CLSA: What’s new and what’s next for Canada’s leading research platform on health and aging,**” will begin shortly.

For first-time WebEx users:

- Follow the instructions that appear on your screen and choose your audio preference. Click the  button at the bottom of your screen. Hover your mouse over your audio option and make sure it turns **blue** before you click. If you choose “Call Using Computer,” and your audio isn’t working, click the “Change settings” link. You can also access this test by going to “Communicate > Audio Connection” on the main toolbar.
- To dial into the conference, click “I Will Call In” and follow the instructions.
- Mobile users can choose “Call In” or “Call Over Internet” to tune in.
- The only people in the session who can speak and be heard are the host and panelists.
- If you have questions/comments, you can type them into the “Q&A” box at the bottom right of the WebEx window. Ensure “All Panelists” is selected from the dropdown menu before you press “send.” Questions will be visible to all attendees. You can type your questions at any point during the session, but they won’t be answered until the end of the presentation.
- For any updates or technical instructions, please check the “Chat” box.

CLSA Webinar Series



12 pm to 1 pm ET | April 23, 2019

Now in its third wave of data collection, the Canadian Longitudinal Study on Aging (CLSA) research platform has established itself as a leading resource for investigating critical questions on health, aging, disability and disease. In collaboration with the Canadian Institutes of Health Research (CIHR), this webinar will introduce the CLSA, explore how researchers and trainees can access data, and highlight some of the major data releases underway, including baseline genomics, biochemistry biomarkers and environmental health data. The presentation will also showcase upcoming data availability, including the first release of longitudinal data.

Introductory remarks will be provided by Dr. Yves Joanette, professor in the Faculty of Medicine at the University of Montreal and the Scientific Director of the CIHR Institute of Aging, and a presentation will follow by Dr. Parminder Raina, professor in the Department of Health Research Methods, Evidence and Impact at McMaster University, scientific director of the McMaster Institute for Research on Aging and lead principal investigator of the CLSA.

Webinars will be broadcast using WebEx.
Further instructions will be sent by email.

Register online at:
bit.ly/clsawebinars

2019 Update on the CLSA: What's new and what's next for Canada's leading platform on aging

Parminder Raina, PhD

Canada Research Chair in GeroScience
Labarge Chair in Optimal Aging
Scientific Director, McMaster Institute
for Research on Aging (MIRA)
Professor, Department of Health,
Evidence & Impact, McMaster University

April 23, 2019
CLSA Webinar Series



CLSA Leads



Parminder Raina
Lead Principal
Investigator
McMaster University



Christina Wolfson
Co-principal
Investigator
McGill University



Susan Kirkland
Co-principal
Investigator
Dalhousie University

Overview

- CLSA Research Platform
- Data Availability
- Data Access

What is the Canadian Longitudinal Study on Aging (CLSA)?

A research platform –
Infrastructure to enable
state-of-the-art, interdisciplinary
population-based **research**
and **evidenced-based**
decision-making that will lead
to better health and quality of
life for Canadians.



CLSA Network of Collaborating Institutions



a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA



UNIVERSITY
OF MANITOBA



McGill

Institut de
recherche
Centre universitaire
de santé McGill



Research
Institute
McGill University
Health Centre



University
of Victoria



Canadian Longitudinal Study on Aging
Étude longitudinale canadienne sur le vieillissement



UNIVERSITÉ DE
SHERBROOKE



CLSA Infrastructure

Telephone Interview Centres



UNIVERSITÉ DE
SHERBROOKE



UNIVERSITY
OF MANITOBA



DALHOUSIE
UNIVERSITY
Inspiring Minds



SIMON FRASER UNIVERSITY
ENGAGING THE WORLD



Canadian Longitudinal Study on Aging
Étude longitudinale canadienne sur le vieillissement

CLSA Infrastructure

Enabling Units



National Coordinating Centre (NCC)

Director: Parminder Raina



Biorepository and Bioanalysis Centre (BBC)

Director: Cynthia Balion



Epigenetics Centre (EC)

Director: Michael Kobor



Statistical Analysis Centre (SAC)

Director: Christina Wolfson

Biorepository and Bioanalysis Centre (BBC)

- Central location for storage & analysis of the blood and urine samples
 - 31 nitrogen freezers (-190°C)
 - Storage for 5 million samples
 - Dry storage, humidity controlled, room temperature
- Research laboratory dedicated to detailed sample analysis
 - Robotic platform for biomarker analysis



CLSA Research Platform

50,000 women and men aged 45 - 85 at baseline

Target: 20,000
Actual: 21,241
Randomly selected within
provinces

Target: 30,000
Actual: 30,097
Randomly selected
within 25-50 km of 11 sites

Questionnaire
• By telephone (CATI)

Questionnaire
• In person, in home (CAPI)

2010 - 2015

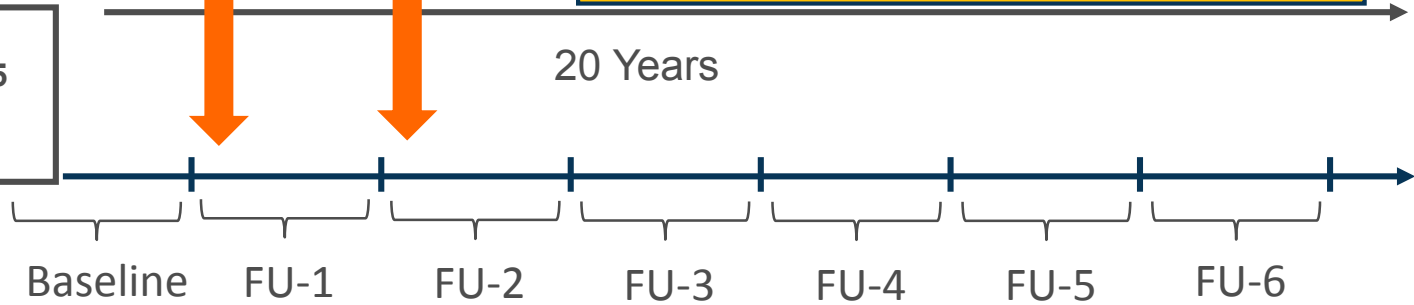
2015

2018

Clinical/physical tests
Blood, urine
• @ Data Collection Site

Participants
aged 45 to 85
at baseline
(51,338)

20 Years



Active follow-up every 3 years

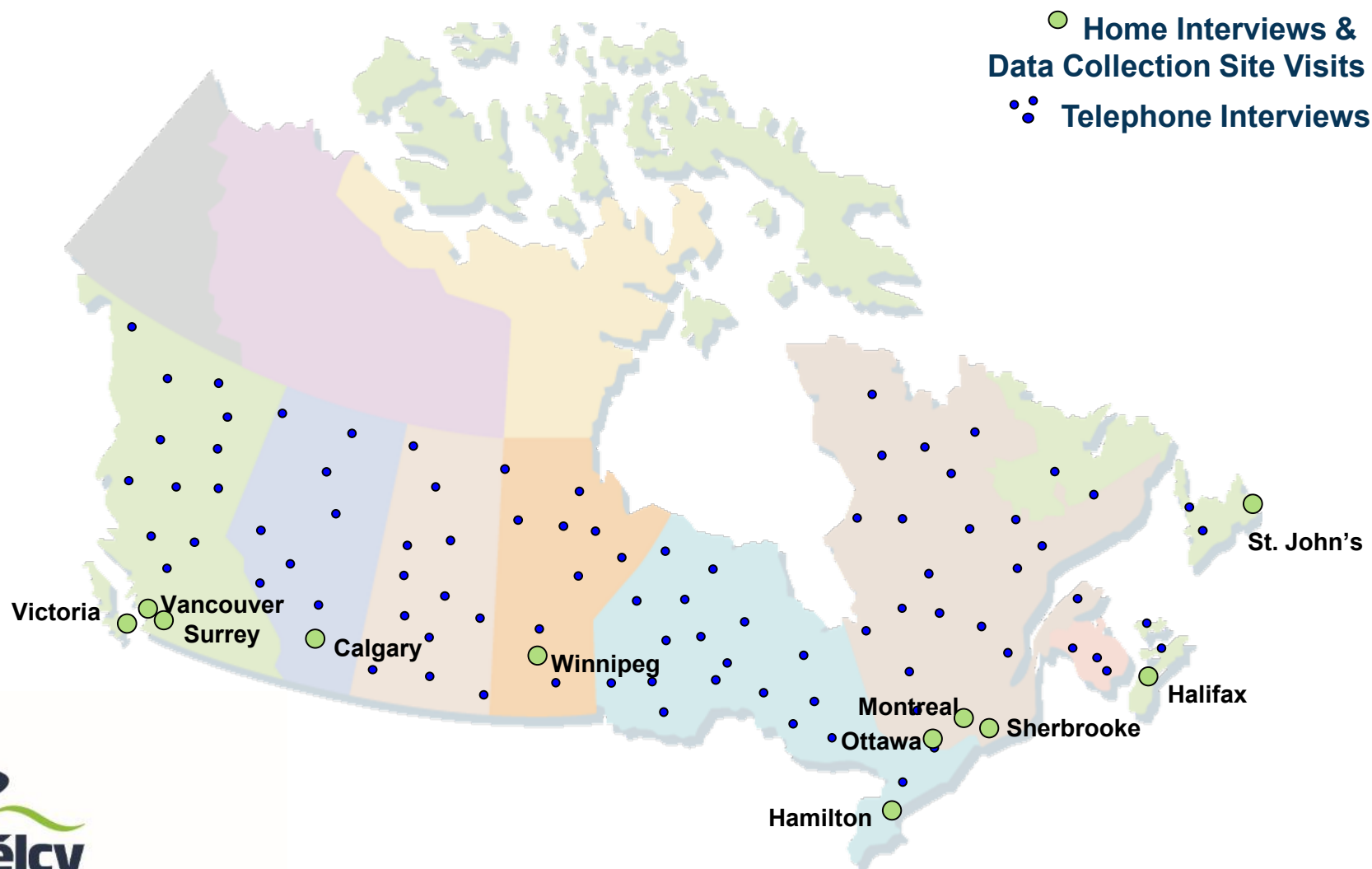
Recruitment Sampling Frame

- Partnered with Statistics Canada
 - CCHS 4.2 Healthy Aging Survey
 - 2006 census as an area frame to select households
 - Agreed to share contact information
- Partnered with provincial Ministries of Health
 - Health Card Registration databases
 - Mailouts, return Consent to Contact form
- Supplemented with Random Digit Dialing
 - Pre-recruitment, agree to recontact

Exclusion Criteria

- Residents in the three territories
- Persons living on federal First Nations reserves
- Full-time members of the Canadian Armed Forces
- Individuals living in institutions
- Individuals unable to respond in English or French
- Individuals with cognitive impairment

National Scope



Terminology

- **Tracking Cohort**

- Target - 20,000 participants from all 10 provinces, followed through Computer-Assisted Telephone Interviews (60 minutes at baseline)
- **21,241 recruited**

- **Comprehensive Cohort**

- Target - 30,000 participants living within 25 km (or 50 km) of a CLSA Data Collection Site (DCS)
- Followed through in-home interviews (60 minutes) and physical assessments (2-3 hours) at a DCS
- **30,097 recruited**



Depth and Breadth of CLSA

PHYSICAL & COGNITIVE MEASUREMENTS

- Height & weight, Waist and hip measurements
- Blood pressure
- Grip strength, timed up-and-go, chair raise, 4-m walk
- Standing balance
- Vision (retinal imaging, tonometer & visual acuity)
- Hearing (audiometer)
- Spirometry
- Body composition (DEXA)
- Bone density (DEXA)
- Aortic calcification (DEXA)
- ECG
- Carotid intima-media thickness (ultrasound)
- Cognitive assessment (30-minute battery)
- Biospecimen collection (blood and urine)

HEALTH INFORMATION

- Chronic disease symptoms (11 chronic conditions)
- Medication and supplement intake
- Women's health
- Self-reported health-care utilization
- Oral health
- Preventative health
- Administrative data linkage health services, drugs and other administrative databases

PSYCHOSOCIAL

- Social participation
- Social networks and support
- Caregiving and care receiving
- Mood, psychological distress
- Veteran's identifier & PTSD
- Coping, adaptation
- Injuries and consumer products
- Work-to-retirement transitions
- Retirement planning
- Social inequalities
- Mobility-life space
- Transportation
- Built environments and contextual factors
- Income, wealth and assets

LIFESTYLE & SOCIODEMOGRAPHIC

- Smoking
- Alcohol consumption
- Physical activity (PASE)
- Nutrition (nutrition risk and food frequency)
- Ethnicity/race/gender
- Birth location
- Marital status
- Education



Data Availability

Baseline Questionnaires

Tracking & Comprehensive

Socio-Demographic

- Age
- Sex
- Country of birth
- Ethnicity
- Culture
- Language
- Veteran Identifiers
- Education
- Province of residence
- Urban / Rural
- Religion
- Marital status
- Sexual orientation
- Income
- Wealth
- Home Ownership



Lifestyle & Behaviour

- Smoking
- Alcohol Use
- Nutritional Risk
- Physical Activities
- Dietary Supplement Use



Baseline Questionnaires

Tracking & Comprehensive

- General Health
- Women's Health
- Vision
- Hearing
- Oral Health
- ADL/IADL
- Pain and Discomfort
- Health Care Utilization
- Injuries
- Falls and Consumer Products

Physical Health



- Self-Reported Chronic Conditions
 - Diabetes
 - Stroke/Cerebrovascular
 - Traumatic Brain Injury
 - Hypo & Hyperthyroidism
 - Hypertension
 - Ischemic Heart Disease
 - Osteoarthritis of the Hand
 - Osteoarthritis of the Hip
 - Osteoarthritis of the Knee
 - Musculoskeletal
 - Osteoporosis
 - Neurological
 - Asthma
 - COPD
 - Gastrointestinal
 - Cancer

Baseline Questionnaires

Tracking & Comprehensive

Psychological Health

- Depression
- General mental health (self-reported)
- Satisfaction with Life
- Post-traumatic Stress Disorder
- Cognitive Battery:
 - Rey I/Rey II
 - Animal Fluency Test
 - Mental Alternation Test



Labour Force

- Retirement Status
- Pre-Retirement Labour Force Participation
- Pre-Retirement Labour Force Participation – open text
- Labour Force
- Labour Force – open text question
- Retirement Planning*



*Abbreviated in Comprehensive

Social Health

- Social Networks
- Social Support – Availability
- Social Participation
- Care Receiving 1/ Formal Care
- Care Receiving 2 / Informal Care
- Care Giving
- Social Inequality
- Online Social Networking
- Transportation, Mobility, Migration
- Built Environments



Current Data Availability: www.clsa-elcv.ca/data-access/data-and-biospecimens

Baseline Questionnaires

Comprehensive Only

- Short Diet Questionnaire
- Chronic Disease Symptoms
- Sleep/Snoring
- Life Space Assessment
- Psychological Distress
- Personality Traits



Tracking Only

- Self-reported Height
- Self-reported Weight
- Functional Status



Baseline Assessments

Comprehensive Only

Biospecimens

- Blood
- DNA
- Urine



Psychological Measures

- Full Cognitive Battery*:
 - Miami Prospective Memory Test (event- & time-based)
 - Stroop – Victoria Version
 - Controlled Oral Word Association Test
 - Choice Reaction Times



*Includes Rey, Mental Alternation & Animal Fluency Tests

Physical Measures

- Height/Weight
- Hip & Waist Circumference
- Blood pressure
- Vision
- Hearing
- Spirometry
- Carotid Ultrasound
- ECG
- Bone Density
- Body Composition
- Timed Get Up and Go
- Standing balance
- 4-metre walk
- Chair rise
- Grip strength
- Tonometry
- Retinal scan
 - Diabetic retinopathy
 - AMD
 - Retinal Vascular



Current Data Availability: www.clsa-elcv.ca/data-access/data-and-biospecimens

Core Biomarkers: Baseline

	Category	N	Biomarkers
Available from Baseline	HEMATOLOGY Data Collection Sites (DCS)	25,427	<ul style="list-style-type: none"> Erythrocytes Granulocytes Hematocrit Hemoglobin Lymphocytes Platelets MCV MCH MCHC MPV RBC RDW
	CHEMISTRY Calgary Laboratory Services (CLS)	27,012	<ul style="list-style-type: none"> Albumin Alanine aminotransferase (ALT) C-reactive protein (CRP) Creatinine Cholesterol Ferritin Free T4 Hemoglobin A1c (n = 26,961) HDL LDL Non-HDL Thyroid stimulating hormone (TSH) Triglycerides 25-Hydroxyvitamin D eGFR
	GENETICS Genetic and Epigenetic Centre (GEC)	19,896*	<ul style="list-style-type: none"> Genotypes (Affymetrix Axiom array, 794k SNPs) Imputation (Haplotype Reference Consortium release 1.1, 39.2M SNPs)
Available in 2019	EPIGENETICS Epigenetic Centre (EC)	1,488	<ul style="list-style-type: none"> DNA methylation DNA extracted from PBMCs 850K Infinium MethylationEPIC BeadChip (Illumina)
	Metabolomics Metabolon	10,000	<ul style="list-style-type: none"> LC-MS/MS systems ~1,300 metabolites

Linkage with CANUE and Health Canada datasets

Social & Material
Deprivation Indices



CanALE Data



Weather & Climate



Air Quality



Nighttime Light



Greenness



Follow-up 1

New Data

- Childhood Maltreatment & Health Across the Lifespan
- Elder abuse
- Loneliness Scale
- Unmet Health Care Needs
- Preventative Health Behaviors
- Hearing Handicap Inventory for the Elderly
- Gender Identity
- Subjective Cognitive Decline
- Meta Memory
- Epilepsy Screening
- Work Limitations Questionnaire
- Decedent Interview



**Follow-up 1
data
available
in 2019**

Longitudinal Data*

(Baseline & Follow-up 1)

- Socio-demographic Characteristics
- Lifestyle & Behavior
- Physical Health
- Psychological Health
- Cognition & Neuropsych
- Labour Force
- Social Health
- Physical Assessments
 - Functional measures



**Data access
applications
now being
accepted**

*Data are released as separate datasets for each wave of data collection. It is up to the user to combine into a longitudinal dataset.

Data Access

CLSA Data Access

- Designed as a research study, funded as a **research platform**
- Data **available** to researchers and trainees based in academic settings and research institutes in Canada and elsewhere
- **2019 application deadlines:**
 - February 25
 - June 5
 - September 25



CLSA Data Access Guiding Principles

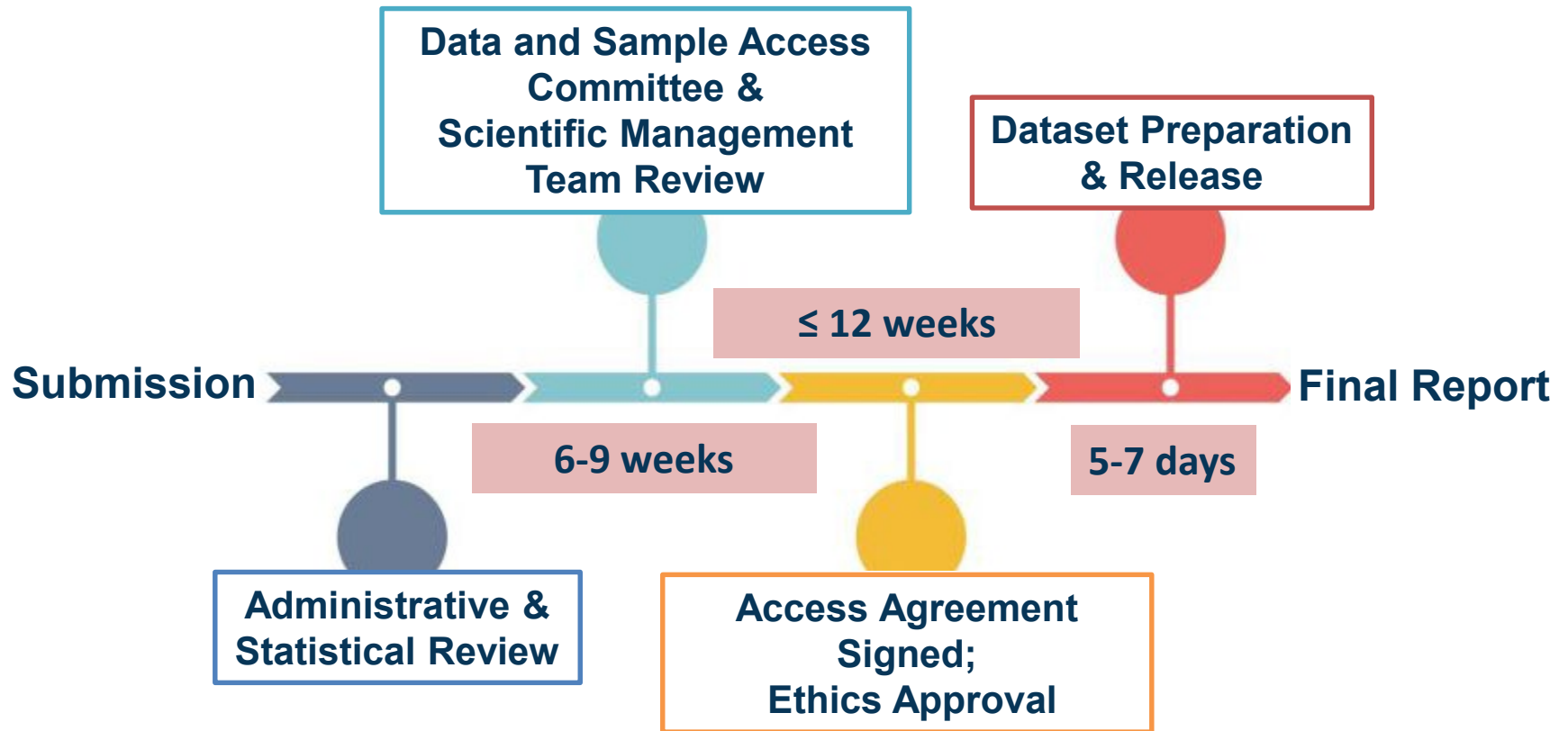
- **The rights, privacy and consent of participants must be protected**
- **Confidentiality and security of data and biospecimens must be safeguarded**
- CLSA data and biospecimens are resources to be used optimally to **support research to benefit all Canadians**



Applying for Data Access

- **Magnolia**, a new web-based data access application system
- User account requests:
access@clsa-elcv.ca
- 2-3 working days to receive login information

Data Access Timeline



Applicants advised to plan on receiving data six months after submission deadline

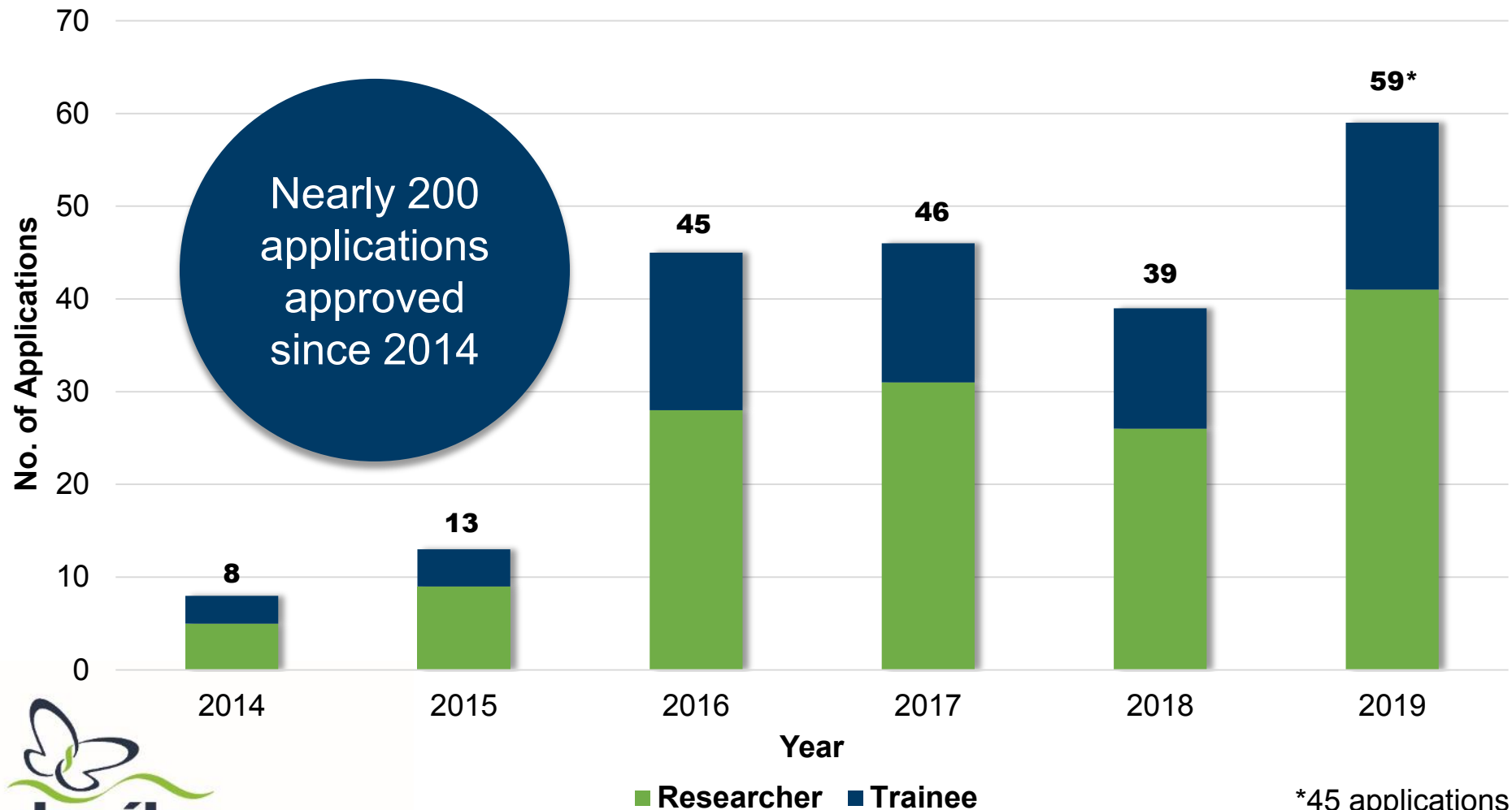
Data Access Fees

- **Partial Cost Recovery Model**
 - **Alphanumeric data**
 - CAD \$3,000 for researchers based in Canada
 - CAD \$5,000 for researchers based at institutions outside of Canada
 - **Graduate students** using data solely for thesis research
 - **Postdoctoral fellows** using data solely for the postdoctoral project are eligible for a **fee waiver (once as PDF)**
 - Trainees must be enrolled at a Canadian institution or be supported by Canadian funds if working outside Canada
 - **Images & Complex data**
 - Additional fees of CAD \$1,000 apply for access to image files, raw data and datasets that require more complex customization

Data and Sample Access Committee

- **Chair:** Joan Lindsay (University of Ottawa)
- **Vice-Chair:** Mark Oremus (University of Waterloo)
- **Members:**
 - Pierrette Gaudreau (Université de Montréal)
 - Truls Ostbye (Duke University)
 - Bob Tate (University of Manitoba)
 - Leah Cahill (Dalhousie University)
 - Angela Brooks-Wilson (UBC)
 - Andrea Gruneir (University of Alberta)
- Megan O'Connell (University of Saskatchewan)
- Danielle Bouchard (UNB)
- Kieran O'Doherty (University of Guelph)
- Martine Lagacé (University of Ottawa)
- *Ex-officio*
 - Susan Kirkland (CLSA Representative, Dalhousie University)
 - Istvan Molnar-Szakacs (CLSA Data Access Officer)
 - Olivier Jacob-Gravel (CIHR)

Approved Applications



*45 applications pending review

Selected Approved Projects

Examining Personal and Environmental Factors Associated with Social Isolation and Loneliness Among Canadians

Dr. Verena Menec,
University of Manitoba

The health of older immigrants in Canada

Dr. Esme Fuller-Thomson,
University of Toronto

Examining Frailty in Canada from a Population Health Perspective

Dr. Lauren Griffith,
McMaster University

Identifying the genetic determinants of lean and fat body compartments measured by DEXA

Dr. Claudia Langenberg,
University of Cambridge

Long-term Exposure to Ambient Air Pollution and Effects on Cognitive Decline in an Older Population: The CLSA

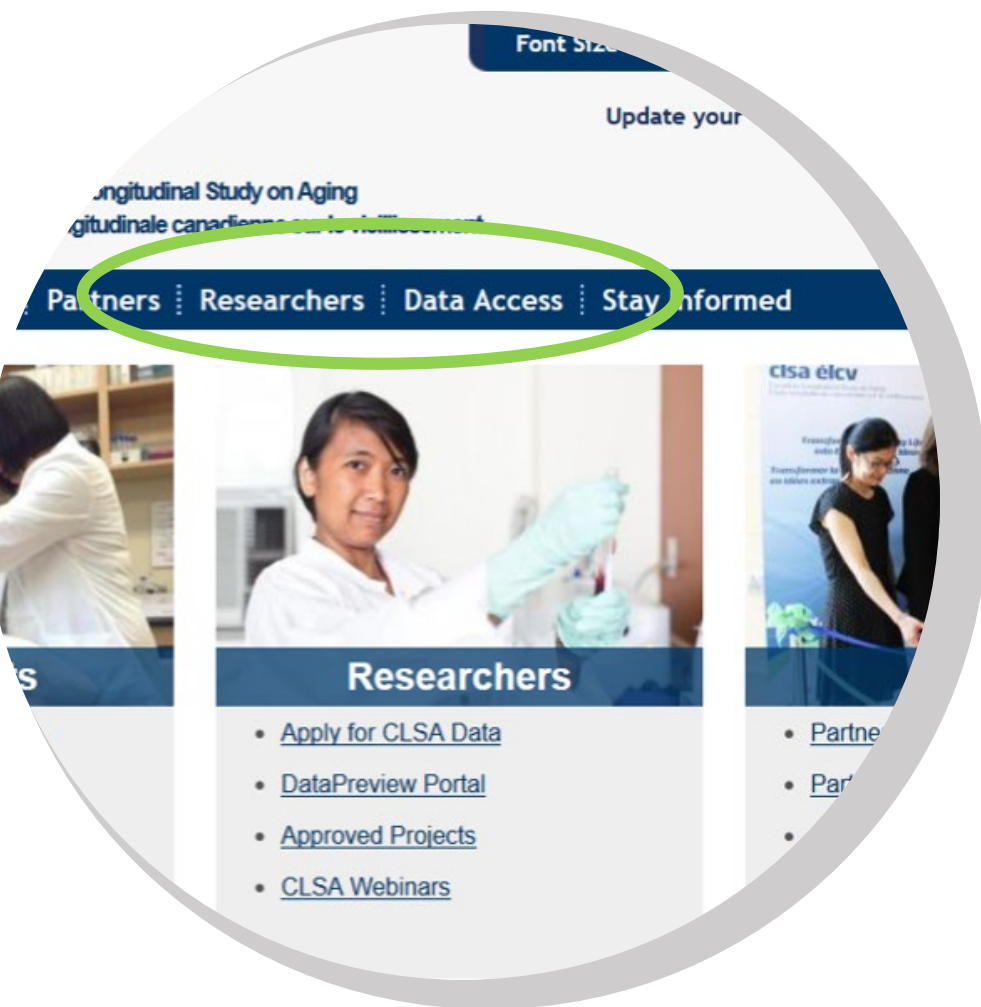
Dr. Robert Dales,
Health Canada

Genome Wide Association Study of Osteoporosis

Dr. Brent Richards,
McGill University

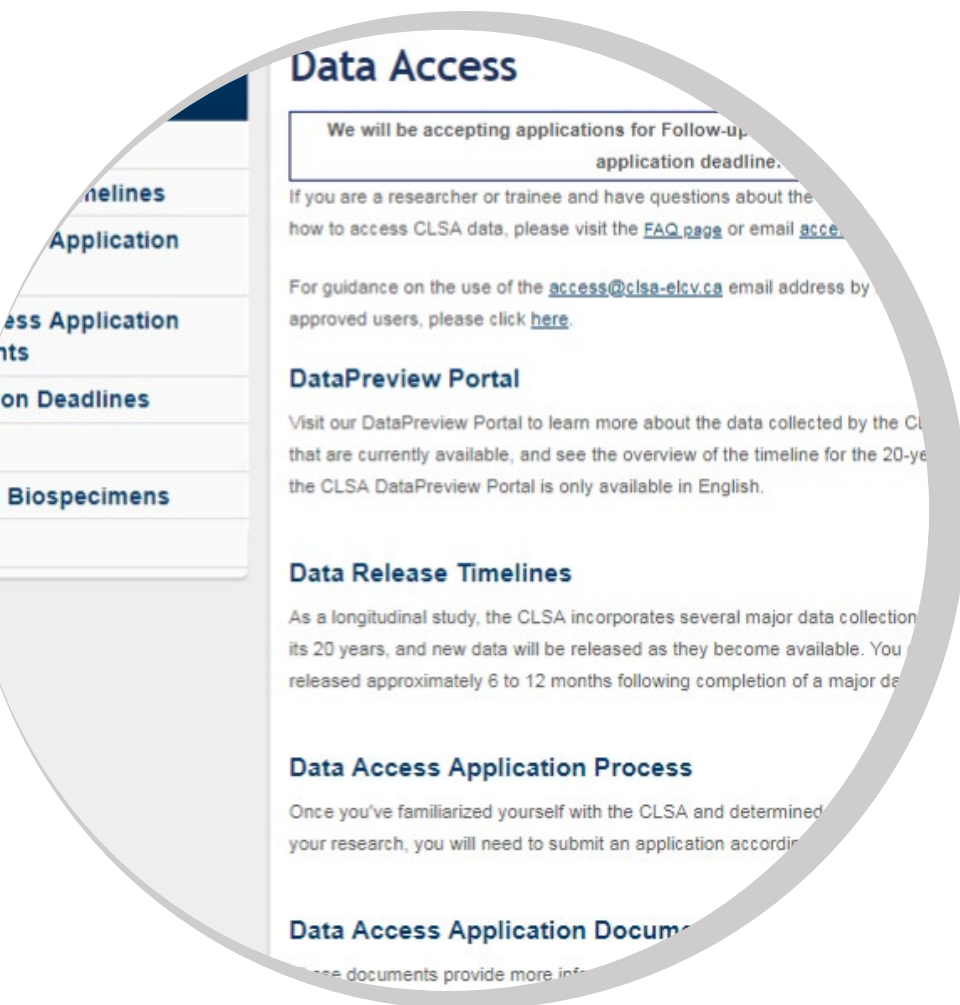
Approved Projects Keywords





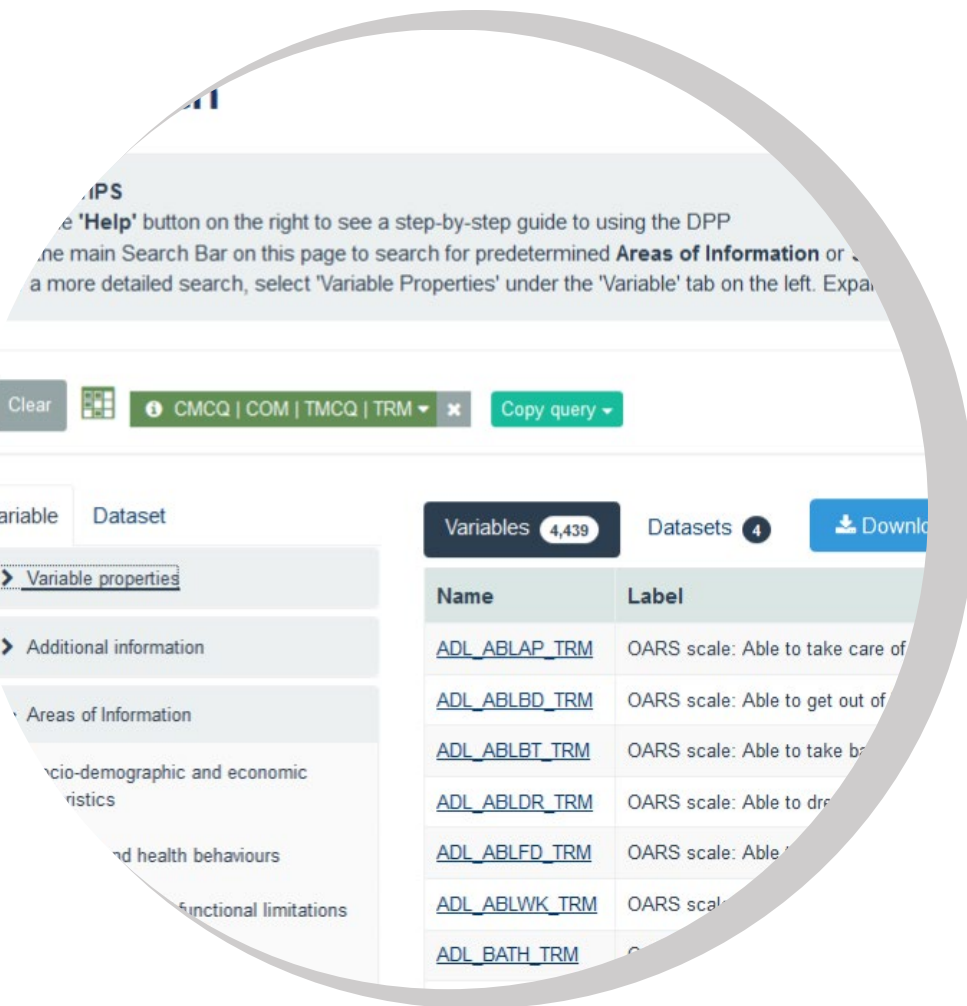
Resources

- www.clsa-elcv.ca
- Researchers
- Data Access



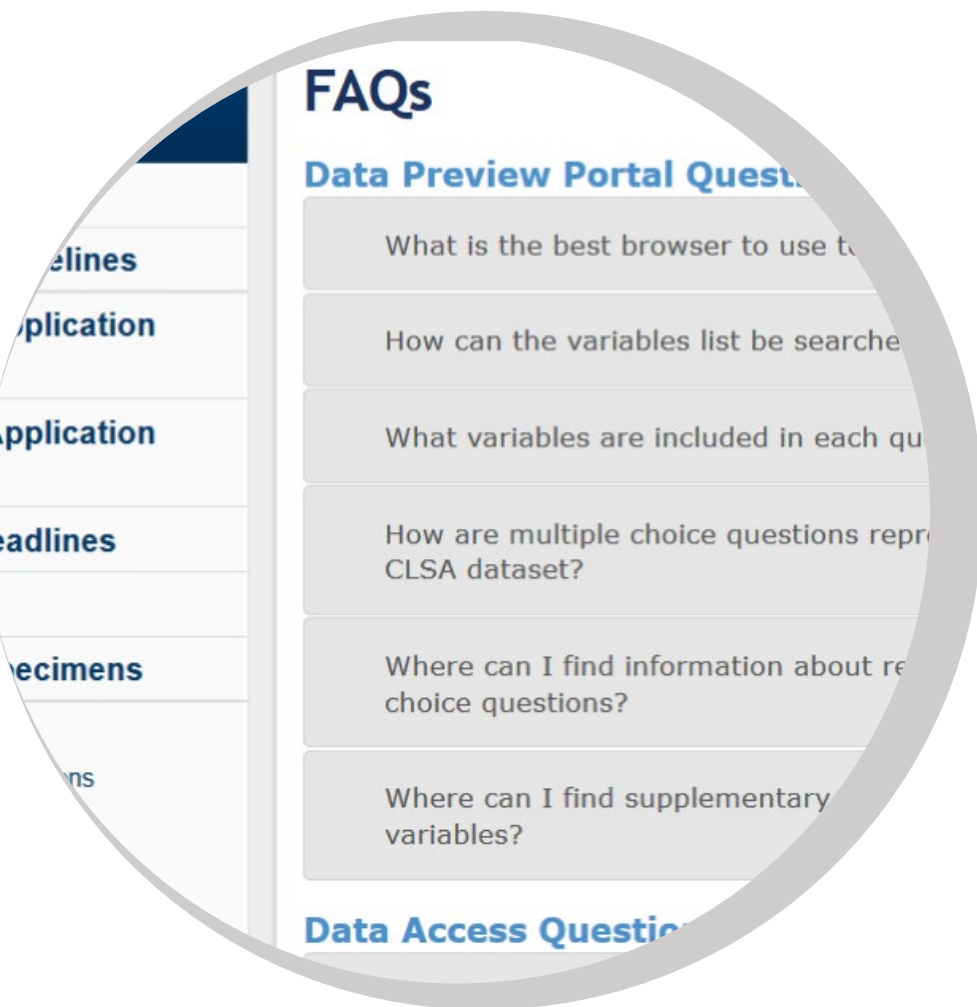
Data Access Section

- DataPreview Portal
- Application Process
- Application Documents (policies, guidelines)
- Data and Biospecimens (data availability)



DataPreview Portal

- Summary statistics
- Explore data:
 - Variable by variable
 - Scales & measures
 - Areas of Information



Data Access FAQs

- Data Access
- Application
- Publication & Presentations
- DataPreview Portal
- Dataset

Additional questions?



Data access support
access@clsa-elcv.ca

Future Data Releases

Upcoming Baseline Releases

- Epigenetics
- Metabolomics
- Medications



**Anticipated
in 2019**

Upcoming Follow-up 1 Releases

- Remaining physical assessment data (images, complex data)
- Hematology Report
- Cognition



**Anticipated
late 2019**

Follow-up 2

New Data

- Positive Mental Health
- Generalized Anxiety Disorder
- Digit Triplet Test for Hearing
- Sitting Height measurement
- Weight Perception
- Resiliency
- Intimate Partner Violence
- Post-traumatic Stress Disorder (re-introduced)



**Data
collection
launched
Summer
2018**

**Ends
2021**

CLSA Research Team

Operations Committee and Scientific Leads



CLSA Research Team

**Principal Investigators, Site Investigators,
Working Group Leads, Key Co-investigators**

UVic: Scott Hoffer

UBC: Teresa Liu-Ambrose, Michael Kobor

SFU: Andrew Wister, Theodore Cosco

UCalgary: David Hogan, Marc Poulin, Eric Smith

USask: Megan O'Connell

UManitoba: Verena Menec, Philip St. John

McMaster: Parminder Raina, Cynthia Balion, Carol Bassim, Lauren Griffith, Andrew Costa, Jinhui Ma, Guillaume Paré

UWaterloo: Mary Thompson, Changbao Wu

UToronto: Andrew Paterson

UOttawa/Bruyere: Vanessa Taler, Patrick Davidson

McGill: Christina Wolfson, Brent Richards, Mark Lathrop

USherbrooke: Benoît Cossette, Isabelle Dionne

Dalhousie: Susan Kirkland, Yukiko Asada

Memorial: Gerry Mugford, Gao Zhiwei

Eindhoven University of Technology: Edwin van den Heuvel

+ Scientific working group members and Co-investigators



Contact:

Data inquiries: access@clsa-elcv.ca

General inquiries: info@clsa-elcv.ca

CLSA is funded by the Government of Canada through CIHR and CFI, and provincial governments and universities

www.clsa-elcv.ca



Canadian Longitudinal Study on Aging
Étude longitudinale canadienne sur le vieillissement



Upcoming CLSA Webinars

**Combined Vision and Hearing Loss in the CLSA:
Prevalence, Severity and Relationships to
Cognitive and Social Variables**

Walter Wittich, PhD

May 21, 2019 | 12 p.m. ET



Register: bit.ly/clsawebinars

