Transforming Everyday Life into Extraordinary Ideas
Advancing the Science of Population Health and Aging through Interdisciplinary Research

Lauren Griffith, PhD
Associate Scientific Director, CLSA
Assistant Professor, Department of Clinical Epidemiology and Biostatistics, Faculty of Health Sciences, McMaster University, Hamilton

Health, Aging and Society Student Association Undergraduate Symposium and Academic Assembly, McMaster University
Jan 27, 2014
DEMOGRAPHY AND AGING

“Population aging is unquestionably the most important demographic force of the first half of the twenty-first century”.

(Schoeni FR, Ofstedal MB. “Key Themes in research on the Demography aging” Demography, 47, 2010: S5-S15)
Trends in Global Aging

Percent of Population Aged 65 & Over: History and UN Projection

Source: UN (2005)
RESEARCH ON AGING

• The **demographic causes of aging** of the population, in terms of fertility rates and mortality rates, are generally predictable. A variety of population projections are available, prepared by UN, EU and National Statistic Institutes.

• What is **less predictable** is the interaction of these forces with social context, health status, economic changes, cultural influences and hence international migrations.
Physiologic reserve - Hypothetical Trajectory to Illness, Functional Limitation & Disability

Physiologic reserve

Time

Younger age

Older age

Functional limitation

Disability

hip fracture

pneumonia

congestive heart failure
Exceptional survival – Understanding physiologic reserve

• Do systems decline together?
• Is there a common underlying “rate” of aging across organ systems?
• Longitudinal data are essential in order to sort causal relationships among demographic, biological, psychosocial and economic factors, and health.

• Cross-national comparison are important, considering variability across societies, in terms of status and well-being of older persons, experiences of health and mortality, family and social support.
Canadian Longitudinal Study on Aging (CLSA)

- More than 160 researchers – 26 institutions
- Multidisciplinary – biology, genetics, medicine, psychology, sociology, demography, economics, epidemiology, nursing, nutrition, health services, biostatistics, population health
Our Vision

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.
Our Aim

To study aging as a dynamic process and the inter-relationship among intrinsic and extrinsic factors from mid-life to older age.
National Scope

Home Interviews & Data Collection Site Visits
Recruitment & follow-up

Telephone Interviews
Recruitment & follow-up

Victoria
Winnipeg
Calgary
Surrey
Vancouver
Ottawa
Montreal
Sherbrooke
Halifax
St. John's
Hamilton
Depth and Breadth of the CLSA

PHYSICAL & COGNITIVE MEASUREMENTS

- Height & weight
- Waist and hip measurements
- Body composition
- Arterial pressure
- Heart rate
- ECG
- Grip strength
- Timed up-and-go
- Chair rise, 4-m walk
- Standing balance
- Vision
- Hearing
- Spirometry
- Bone density
- Aortic calcification
- Carotid intima-media thickness
- Cognitive assessment
Depth and Breadth of the CLSA

**PSYCHOSOCIAL**

- Social participation
- Social networks and support
- Caregiving and care receiving
- Mood, psychological distress
- Satisfaction with life
- Wealth
- Personality traits

- Work-to-retirement transitions
- Veteran identifier/PTSD
- Retirement planning
- Social inequalities
- Mobility-lifespace
- Built environments
Depth and Breadth of the CLSA

HEALTH INFORMATION

- Chronic disease and symptoms
- Medication and supplement use
- Women’s health
- Self-reported health service use
- Oral health
- Administrative data linkage health services and drugs
- Other administrative databases
- General health
- Injuries
- Pain/discomfort
- Functional status
- Activities of daily living (ADL)
- ADL impairment
Depth and Breadth of the CLSA

LIFESTYLE & SOCIODEMOGRAPHIC

- Smoking
- Alcohol consumption
- Physical activity
- Nutrition
- Birth location
- Ethnicity/race/gender
- Marital status
- Education
- Income
- Transportation
- Home ownership
50,000 women and men aged 45 - 85 at baseline

n=20,000
Randomly selected within provinces

n=30,000
Randomly selected within 25-50 km of 11 sites

Questionnaire
• By telephone (CATI)

Questionnaire
• In person, in home (CAPI)

Clinical/physical tests
Blood, urine (consent)
• At Data Collection Site

Interim contact, follow up every 3 years

Data Linkage (consent)
Randomly selected adults aged 45-85 sent study information

Recruits consent to participate in the CLSA

Participants provide questionnaire data (n=50,000)

Home interview and data collection site visit (n=30,000)

Telephone interview (n=20,000)
CLSA Data Collection
At the Data Collection Site

Physical Data Collected
- Bone Density, Body Composition
- Aortic Calcification
- ECG
- Carotid Intimal-Medial Thickness
- Pulmonary Function
- Vision and Hearing

Psychological Data Collected
- Neuropsychological Battery
- Performance Testing
- Anthropometric Measures

Biological Data Collected
- Blood
- Urine

For more Information visit www.clsa-elcv.ca
Biospecimen Room
Collection, processing, analysis

- 5 – 6 participants per day
- 50 mL blood
- Urine sample
- Hematology tests
- Collection to storage time – 2 hours

AcT DIFF, Beckman Coulter
Recruitment & Data Collection

Telephone Interviews

- Recruitment of 20,000 participants for telephone interviews:
  - Statistics Canada CCHS on Healthy Aging
  - Provincial Health Care Registries
  - Random Digit Dialing
- Baseline data collection 2010 to 2014
- Maintaining contact interviews initiated 2013
- First follow-up begins 2015
Recruitment & Data Collection
Home Interviews and Data Collection Site Visits

- Recruitment of 30,000 for Home Interviews and Data Collection Site Visits:
  - Provincial Health Care Registries
  - Random Digit Dialing
- Baseline data collection 2012 to 2015
- Maintaining Contact Interviews initiated 2014
- First follow-up begins 2015
CLSA Collaborations

- PHAC for Neurological Conditions Initiative
- PHAC for Injury Initiative
- Veterans Affairs (Veterans Health Initiative)
griffith@mcmaster.ca

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

www.clsa-elcv.ca