CanPath

Canadian Partnership for Tomorrow's Health

Partenariat canadien pour la santé de demain

2020-2021 ANNUAL REPORT

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INTRODUCTION

PURPOSE

Enhance and accelerate research for a healthier Canada.

VISION

Working together for a world without chronic disease and cancer.

MISSION

To provide a national platform for population-level health research in Canada and globally.

LAND ACKNOWLEDGEMENT

We acknowledge that the land on which the CanPath coordinating centre operates at the University of Toronto has for thousands of years been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, together with CanPath teams across Canada from coast to coast, we are grateful for the opportunity to work on lands that are home to many Indigenous people from across Turtle Island.

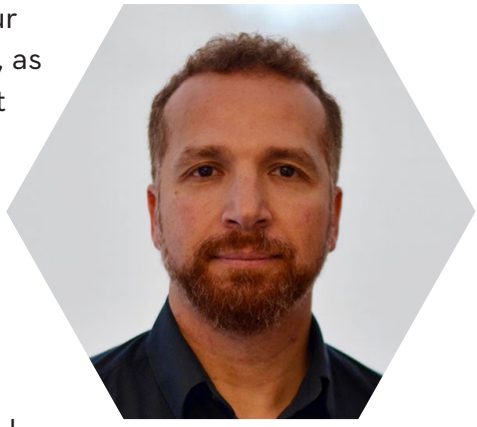
LEADERSHIP & GOVERNANCE

NATIONAL SCIENTIFIC DIRECTOR

The 2020-2021 fiscal year posed new challenges for CanPath and the world, but I am proud to say our team rose to meet them. The COVID-19 pandemic demonstrated the immense value of our platform and our ability to respond rapidly to changing health priorities in Canada. We not only maintained regular operations and provided data access to many researchers, but also mobilised to be an effective platform for infectious disease research.

The CanPath COVID-19 Initiative was launched in April 2020 mere weeks after COVID-19 was declared a pandemic. By leveraging our existing infrastructure and pan-Canadian team, we were able to collect COVID-19 related data and outcomes from over 100,000 Canadians in 2020. The CanPath COVID-19 data were harmonized and made available to researchers in record time, thus providing researchers across the country with real-time insight into the pandemic.

Our research efforts were supported by both the Canadian Institutes of Health Research (CIHR) and the Government of Canada's COVID-19 Immunity Task Force (CITF) with a combined total of $4.5 million awarded from funding competitions. The CIHR-funded SUPPORT-Canada initiative includes longitudinal serological surveillance of SARS-CoV-2 antibodies in diagnosed, symptomatic, asymptomatic and susceptible Canadians, as well as pre- and post-vaccine immune profiling. The CITF-funded COVID-19 Antibody Study includes serological surveillance of over 20,000 Canadians in high-risk populations.



In addition to our COVID-19 work, as Canada's largest population health study, CanPath continues to support health research in Canada and around the world through various international collaborations. On the national front, we are the only advisory cohort supporting the development of the Canada 2030 Health Strategy. We also represent Canada as the sole eligible cohort in the International HundredK+ Cohorts Consortium, supporting the development of international data holdings from over 70 international cohorts guided by FAIR principles.

CanPath is a leader in building national data infrastructure. Our pan-Canadian partnership allows us to build harmonized national health datasets from regional assets, foster partnerships with regional and national data holders, and harmonize data with other Canadian and international cohorts. To grow Canada's data infrastructure and sharing capacity, we are exploring partnerships to develop data 'safe havens' that will maintain the security and integrity of CanPath data, allow us to host national administrative health data, while enabling access by a wider range of external users and organizations. This will be the first of its kind in Canada, and we are excited about the potential for Canadian research and health.

PHILIP AWADALLA

The CanPath team continued to share our research and expertise through international forums including the the American Society for Human Genetics, International Society for Biological and Environmental Repositories (ISBER), the American Advancement for Cancer Research Society meetings and workshops, among others. Our research also continues to be profiled in national media with recognition from The Globe & Mail, Global News, CTV News and more.

With the aim of enabling discoveries with commercial and economic benefit, our team has worked to develop robust governance and procedures to enable CanPath to work with industry partners. Coupled with our evolving partnerships to develop infrastructure to support both access and usability, these changing governance policies will create new research opportunities, such as leveraging our living population laboratory to study the efficacy of pharmaceuticals, anti-microbials and medical devices.

Our International Scientific Advisory Board (ISAB) continued to provide guidance and share insights as we identified priorities for enrichment and research for CanPath's next phase. We are grateful for the time dedicated by these international leaders in population and clinical cohort research, especially in a year such as this past one.

I am grateful to the CanPath teams across the country for their commitment and dedicated efforts over the last year to not only continue regular operations, but also implement important COVID-19 studies in record time. Over the past two decades, Canadian participants and health leaders have built an unparalleled national and globally competitive research asset. By providing a built-in resource for scientific discovery, CanPath continues to unlock Canada's potential to foster Canadian innovation and improve the health of Canadians.

EXECUTIVE DIRECTOR

From its inception, the mandate of CanPath was to address a major gap in Canada's data infrastructure and to serve the research community by providing access to new data resources that are beyond the scale and scope for individual researchers and traditional grant funding programs. CanPath is structured as a large and long-term population cohort study with a biobank that provides a platform for research by investigators across Canada, now and into the future. This builds on the active involvement and commitment of a very large number of volunteers from all provinces whose health, exposures and circumstances are monitored over a long period of time.

One scientific distinction that arises from CanPath's long-term follow-up is that it can take decades for impacts of societal, environmental and other changes to arise among individuals and the population. The CanPath approach also supports health research across a wide spectrum – from biological mechanisms to societal determinants – as is essential to advance the understanding of causes, progression and consequences of cancers and other chronic diseases. By tracking the health trajectories of more than 300,000 participants, CanPath is large enough for researchers to assess rare diseases and hidden patterns that are not detectable in smaller studies.

As a pan-Canadian project that brings together elements from every province, CanPath can address both regional and national priorities and, due to the prospective design, can also track them as they change over time. Advantages also derive from many partnerships, including those between citizen participants and the research community, a wide range of scientific and health disciplines that continue to collaborate through universities and research institutes, and between many provincial and national agencies.

The unique value of CanPath was demonstrated in the rapid response that allowed the pandemic's impact to be assessed among participants in each contributing province. This is a testament to the commitment and concern of participants, but also to the value of a pre-existing platform that can adapt rapidly to new priorities and directly assess a wide range of health outcomes, and to the synergistic efforts of skilled teams based in each region of the country. In addition to the immediate observations made during the pandemic, as a longitudinal

JOHN MCLAUGHLIN

study CanPath will capture implications of COVID-19 over the long-term.

The investments made by partners who built CanPath over the past decades are now delivering dividends because with each passing year the value of the asset grows, as the data informativeness increases while health trajectories of CanPath participants are followed. The challenging foundational work of launching and following a large population cohort has been completed successfully, and a new phase has been entered where the data resources will be constantly enriched and increasingly influential in driving product development and evidence-based practice and policy. A health research initiative with CanPath's large scale and scope has never before been attempted in Canada, and the cost and long duration make it unlikely to be repeated. This reinforces the need to ensure that the full potential of the resource is achieved, as can now be accomplished at much lower costs than any alternatives.

Research based on CanPath can inform policy and practice at local, provincial and federal levels, across a wide range of health dimensions (e.g., clinical, public health, treatment, prevention, community services, social policy, environmental exposures, etc.) By characterizing factors that predict whether people remain healthy or develop complex comorbidities, CanPath evidence will also inform the delivery of more effective and efficient service through the health care system. Indeed, it is now recognized that sustained and long-term analyses of CanPath data make it an important element of "learning health systems" whereby the more in-depth individual and biological-level data available complement the more traditional clinical and health service data systems that exist.

I would like to thank Vivek Goel for serving as inaugural Co-chair of our National Scientific Advisory Council for the past two years, and for his many past contributions to the platform, including a term as lead of the Ontario Health Study. This year CanPath also welcomed Riaz Alvi as Scientific Director of the newly approved Saskatchewan cohort, and welcomed Robin Urquhart as Scientific Director of the Atlantic Partnership for Tomorrow's Health.

By enabling research breakthroughs to improve the health of Canadians, improving Canadian health system performance, and contributing to the Canadian knowledge-based economy, CanPath will support a healthier Canada.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W 8th Ave
Wendy's
PATTISON

LEADERSHIP TEAM

LEADERSHIP TEAM MEMBERS

Philip Awadalla, National Scientific Director, CanPath; Executive Scientific Director, Ontario Health Study
John McLaughlin, Executive Director, CanPath
Trevor Dummer, National Scientific Co-Director, CanPath; Co-Scientific Director, BC Generations Project
Riaz Alvi, Scientific Director, Saskatchewan PATH
Parveen Bhatti, Scientific Director, BC Generations Project
Philippe Broët, Co-Scientific Director, CARTaGENE
Simon Gravel, Co-Scientific Director, CARTaGENE
Shandra Harman, Strategic Director, Alberta's Tomorrow Project
Jason Hicks, Executive Director, Atlantic PATH
Guillaume Lettre, Co-Scientific Director, CARTaGENE
Donna Turner, Scientific Director, The Manitoba Tomorrow Project
Robin Urquhart, Scientific Director, Atlantic PATH
Jennifer Vena, Scientific Director, Alberta's Tomorrow Project

CanPath unites scientific expertise and leading health institutes from coast to coast.

NATIONAL STRATEGIC ADVISORY COUNCIL

The Canadian Partnership for Tomorrow's Health (CanPath) is an incredibly valuable health resource for Canada and all Canadians. We are proud to lead the group of funders and host institutions that together form the National Strategic Advisory Council (NSAC) for CanPath.

CanPath is unique in Canada for its large size – large enough to study important health questions that cannot be addressed by other initiatives. This scope and impact will only increase with continued participant recruitment in Manitoba and the development of a new regional cohort in Saskatchewan. CanPath's impressive scale allows Canada and its researchers to be part of the world's leading collaborations, such as being the only eligible Canadian contributor to the International HundredK+ Cohorts Consortium.

The past year highlighted the incredible value of CanPath as the team responded rapidly to the emergence of COVID-19. Both the Canadian Institutes of Health Research and Canada's COVID-19 Immunity Task Force recognized CanPath's unique ability to contribute to Canadian COVID-19 research by leveraging the pan-Canadian infrastructure developed over the last twelve years.

This year the NSAC's Sustainability Subcommittee, led by Adalsteinn Brown, worked closely with CanPath's leadership to develop a plan for the long-term sustainability and growth of the platform. The NSAC endorsed this plan, as we believe it is vital to build upon the extensive investments already made to enhance the CanPath platform and its ability to improve the health of Canadians. We support CanPath's exploration of policy development to support broader research requests from academic and industry partners, and believe CanPath will play an important role in further developing national data infrastructure, such as a data safe haven.

Vivek Goel & Christine Williams
Co-Chairs, National Strategic Advisory Council

NATIONAL STRATEGIC ADVISORY COUNCIL MEMBERS

Vivek Goel, Co-Chair, University of Toronto
Christine Williams, Co-Chair, Ontario Institute for Cancer Research
François Bénard, BC Cancer
Adalsteinn Brown, Dalla Lana School of Public Health
Prithwish De, Ontario Health
France Gagnon, Dalla Lana School of Public Health
Brenda Hubley, Alberta Health Services
Bart Johnson, Alberta Health
Roger McLeod, Dalhousie University
Jacques Michaud, CHU Sainte-Justine
Theresa Radwell, Alberta Cancer Foundation
Rami Rahal, Canadian Partnership Against Cancer
Daniel Tessier, Genome Quebec
Neil Watkins, CancerCare Manitoba
Kevin Wilson, Saskatchewan Cancer Agency

Non-Voting Members:
Timothy Buckland, Alberta Health
Stephen Robbins, Canadian Institutes for Health Research
James Yip, Alberta Cancer Foundation

INTERNATIONAL SCIENTIFIC ADVISORY BOARD

CanPath is a scientifically vibrant and critical partnership of studies to advance population health in Canada. I am proud to lead the International Scientific Advisory Board (ISAB) in supporting CanPath to sustain this rich and productive program.

CanPath is a state-of-the-art set of cohorts that works together to address critical public health issues, now further underscored by the challenges of the COVID-19 pandemic. It is a superb instantiation that can address a wide variety of public health issues, that eventually will return to precision medicine and prevention.

The transition from large population studies to individual benefit is a long-term commitment— and the infrastructure and current studies in progress at CanPath are at the cutting edge. Ongoing support is necessary for both the infrastructure and the initial studies underway— some of which have pivoted towards pressing COVID-19 related issues.

The ability to develop paradigms that can advance health and intercede earlier for those at higher risk is predicated on a strong scientific foundation of research, both in Canada and in collaboration with other international groups. The ISAB strongly supports CanPath's scientific priorities and we believe that investment in this study will reap enormous benefits over time.

Stephen Chanock
Chair, International Scientific Advisory Board

INTERNATIONAL SCIENTIFIC ADVISORY BOARD MEMBERS

Stephen Chanock, Chair, National Cancer Institute
Naomi Allen, University of Oxford
Nancy Cox, Vanderbilt University
Edward Dove, University of Edinburgh
Marc Gunter, Imperial College London
Teri Manolio, National Human Genome Research Institute
Jill Reedy, National Cancer Institute
John Spinelli, University of British Columbia
Roel Vermeulen, Utrecht University

FUNDERS, HOSTS & SUPPORTERS

CanPath is hosted by the University of Toronto's Dalla Lana School of Public Health in partnership with the Ontario Institute for Cancer Research (OICR). The OICR hosts the CanPath data systems in a safe and secure environment.

The Canadian Partnership Against Cancer is the lead national funder for CanPath. Financial support has also been provided by the following partners:

- Genome Canada
- Alberta Cancer Foundation
- Government of Alberta
- Genome Quebec
- Ontario Institute for Cancer Research

The following institutions have provided in-kind support, and host CanPath's regional cohorts:

- Alberta Health Services
- BC Cancer
- CancerCare Manitoba
- Centre Hospitalier Universitaire (CHU) Sainte-Justine
- Dalhousie University
- Ontario Institute for Cancer Research
- Saskatchewan Cancer Agency

FINANCIAL OVERVIEW

This past fiscal year, The University of Toronto received $4.3 million from the Canadian Partnership Against Cancer to ensure ongoing operations of CanPath and its regional cohorts. Seventy percent (70%) of that budget went directly to the host institutions of the regional cohorts to support staffing, biospecimen storage, and general cohort support relevant to national activities. Eight percent (8%) was distributed to partner institutions through service contracts for data hosting and harmonization, data access, and strategic development projects to enhance the national cohort. The remainder of the funds support staff of the National Coordinating Centre, communications, meetings and associated expenses.

Due to COVID-19 travel restrictions, the funds allocated towards meetings went largely unspent. These funds will be used for additional strategic development projects in the next fiscal year, to further enrich the CanPath data platform. CanPath was also awarded a combined $4.5 million from the Canadian Institutes of Health Research and Canada's COVID-19 Immunity Task Force to support COVID-19 research activities.

OPERATIONS

NATIONAL COORDINATING CENTRE

CanPath's National Coordinating Centre (NCC) is based at the University of Toronto's Dalla Lana School of Public Health. The NCC manages all aspects of operations for CanPath, including housing the Access Office, secretariat duties for all committees and working groups, communications, and managing various national initiatives described throughout this report.

The COVID-19 Initiative created a unique opportunity for the NCC to centralize national project management, procurement, and development of consent and communications materials for the study, increasing efficiency of the rollout across the regional cohorts. Previous large-scale activities were largely managed within each of the regional cohorts, which led to some duplication and delays that needed to be minimized for the rapid response required during a pandemic.

NATIONAL COORDINATING CENTRE MEMBERS

John McLaughlin, Executive Director
Philip Awadalla, National Scientific Director
Tedd Konya, Research Operations Manager
Kimberly Skead, National Scientific Coordinator
Arlette Bax, Communications & Knowledge Translation Officer
Asha Mohamed, Access Officer
Mark Bhola, Administrative Assistant
Treena McDonald, National Biosamples Coordinator

DATA ACCESS

During the 2020-2021 fiscal year, the Access Office implemented a streamlined access process that reduced the time required to review applications. A new expedited review process was implemented for applications requesting only national harmonized data, and a further expedited review was implemented for requests for COVID-19 data.

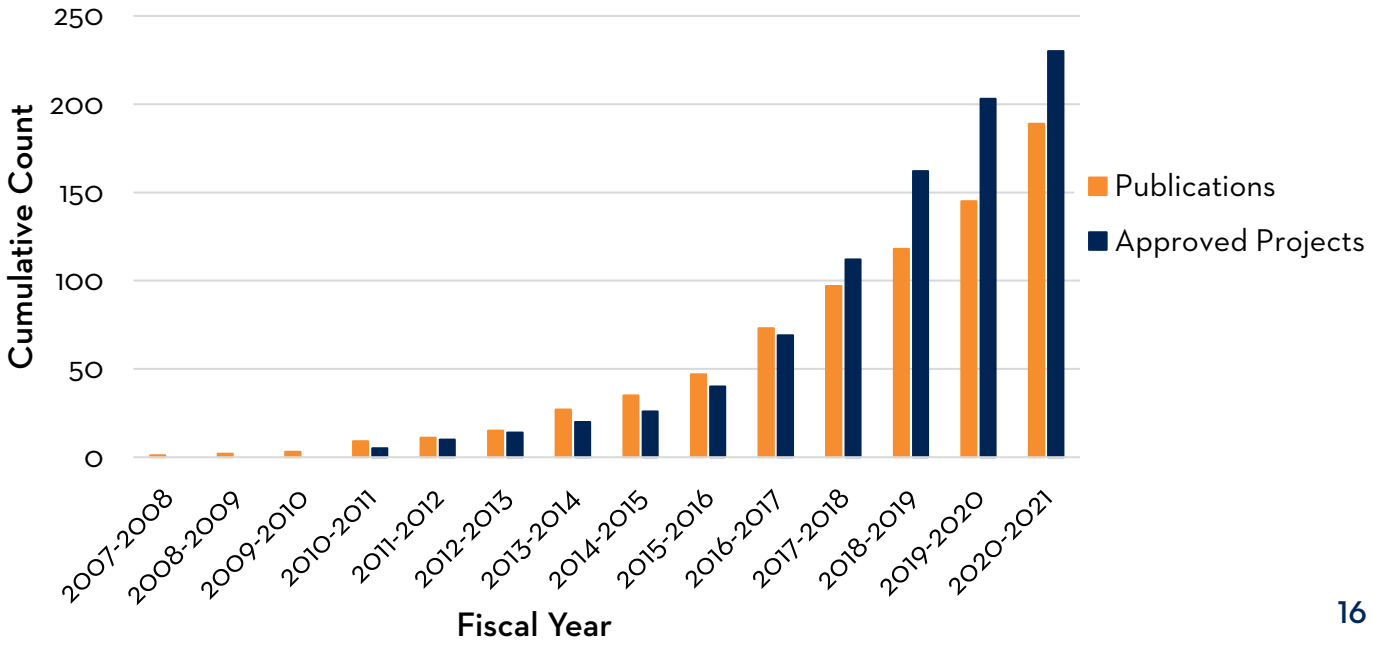
A new independent Access Committee was formed and began reviewing access applications for CanPath data and biological samples in June 2020. The committee is composed of seven independent members from across Canada who have expertise in such relevant fields as biostatistics, epidemiology, genomics and ethics.

2020-2021	National	Regional	Total
Access Requests Received	10	32	**42**
Access Requests Under Review	4	4	**8**
Access Requests Approved	6	21	**27**
Letters of Support Provided	3	42	**45**
Publications	3	41	**44**
Ongoing Approved Projects	10	183	**193**

Over 300% increase in national access requests

63% increase in total publications

CUMULATIVE PUBLICATIONS & PROJECTS



ENHANCING THE PLATFORM

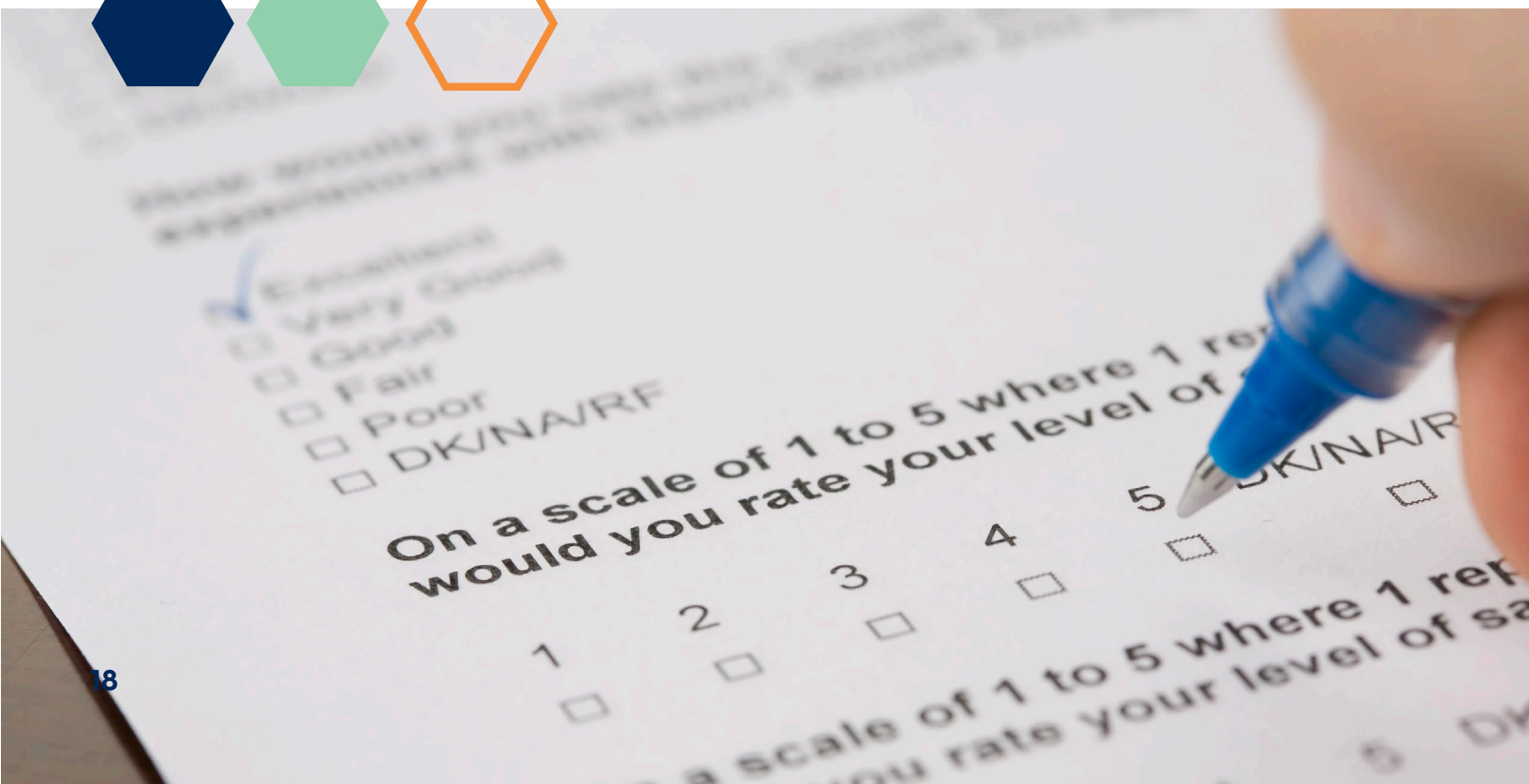
FIRST FOLLOW-UP DATA RELEASE

Between 2016 and early 2019, over 120,000 CanPath participants completed the Follow-up Questionnaire. The Follow-up Questionnaire collected updated information on participants' health, including cancers and long-term health conditions, as well as more information on their mental health. Questions unique to this questionnaire include use of marijuana, e-cigarettes and over-the-counter drugs. These data were collected from participants across Canada by the BC Generations Project, Alberta's Tomorrow Project, Ontario Health Study, CARTaGENE and Atlantic PATH.

In July 2020, nationally harmonized datasets from the Follow-up Questionnaire were made available to researchers. Combined with CanPath's baseline data, this now allows for the investigation of changes in health conditions across the CanPath cohort.

The new harmonized follow-up dataset includes the following:

- Demographics
- Health status
- Medical history
- Prescribed medications
- Family health history
- Behaviours (sleep, alcohol, tobacco, cannabis use, and e-cigarette use)
- Working status
- Household income
- Anthropometric measurements



COMPLETING THE PROVINCIAL MAP

In September 2020, CanPath was pleased to announce that, with funding support from the Canadian Partnership Against Cancer, a Saskatchewan cohort will be developed and join CanPath. The Saskatchewan Partnership for Tomorrow's Health (Saskatchewan PATH) will add approximately 9,000 participants to the existing cohort of over 330,000 Canadian participants and will complete the provincial CanPath map.

Saskatchewan PATH will create a platform and resource for fostering research in cancer and chronic disease prevention within the province. The Saskatchewan PATH study will be led by Scientific Director Riaz Alvi and hosted by the Saskatchewan Cancer Agency.

"We are proud to be a part of this truly national program. Saskatchewan holds a prominent place in the history of healthcare in Canada, and houses one of the world's oldest cancer registries. We are confident that the people of Saskatchewan will welcome this opportunity to participate in Saskatchewan PATH to help further a better understanding of cancer and other chronic diseases, and to assist with the future development of prevention, early detection, diagnosis and treatment programs. There is exciting and highly rewarding work ahead of us," said Riaz Alvi, Scientific Director of Saskatchewan PATH.

Saskatchewan has a unique and diverse population, with roughly half living in the province's largest city, Saskatoon, or the provincial capital of Regina. The province's economy is primarily associated with agriculture and, more recently, mining. The burden of cancer in Saskatchewan is significant with about 5,600 new cancers diagnosed in 2018 and just over 2,000 cancer deaths in the same year. In 2018, the number of people living with cancer that had been diagnosed within the last 5 years (5-year prevalence), was approximately 17,000 people.

"Since CanPath began almost 11 years ago, we have sought to ensure representation of all provinces. Now being able to include participants from the province of Saskatchewan fills an important gap and builds upon the hard work of many of us who started and have maintained the CanPath cohort and vision since the beginning," said Philip Awadalla, National Scientific Director of CanPath.

The development of Saskatchewan PATH will consist of three phases:

- Phase I – Planning & Implementation (September 2020 to Spring 2022)
- Phase II – Participant Recruitment and Collection of Data and Biological Samples
- Phase III – Maintenance and Use of Participant Data and Biological Samples

BIOBANK

A key strength of CanPath is that nearly half of its participants have provided biological samples to support research activities. In June 2020, Release 1 of harmonized biosample data became available. This dataset, involving information on more than 87,000 participants across three regional cohorts, includes sample pre-analytical variables and interpretative variables that are participant-centric. CanPath has begun examining Release 1 data to better understand what is available from the biobank beyond the number of collected specimens. For example, although participants were not required to provide a fasting blood sample, Release 1 data has identified more than 4,000 participants who fasted for a minimum of 10 hours prior to donating. There are also nearly 50,000 individuals with biosample, baseline questionnaire and follow-up questionnaire data available. Within this group, CanPath is able to identify samples collected prior to self-reported disease onset. Additionally, we are also able to identify samples collected prior to disease onset through linkages to administrative data holdings. These counts are expected to increase significantly with Release 2, which was delayed due to the pandemic.

Another unique resource available to researchers is CanPath's new Biosample Order Request Workbook. This free-to-download workbook on the Biosamples page of the CanPath Portal website was designed to assist researchers with identifying their operational requirements when requesting biosamples from CanPath. Researchers are then able to share their planning with the CanPath Access Office by attaching the completed document to their access application.

STUDENT DATASET

CanPath developed a new Student Dataset that provides students the unique opportunity to gain hands-on experience working with CanPath data. The CanPath Student Dataset is a synthetic dataset that was created to mimic CanPath's nationally harmonized data but does not include or reveal actual data of any CanPath participants.

A pilot project was conducted in the fall of 2020 at the Dalla Lana School of Public Health when Dr. Jennifer Brooks used the Student Dataset in the graduate level "Categorical Data Analysis for Epidemiologists" course. The dataset was used by eight student groups for projects ranging in topic from investigating the link between green space and obesity, smoking and Multiple Sclerosis to anxiety and addiction.

The CanPath Student Dataset is available to instructors at a Canadian university or college for use in an academic course, at no cost. CanPath will provide the Student Dataset and a supporting data dictionary.

CANUE ENVIRONMENTAL DATA

CanPath data is linked to environmental data provided by the Canadian Urban Environmental Health Research Consortium (CANUE). Measures of walkability, greenness, and air quality are among the environmental exposure datasets made available to researchers via the CanPath Portal. CANUE is a CIHR-funded research platform that collates and generates standardized area-level environmental data on air and noise pollution, land use, green/natural spaces, climate change/extreme weather, and socioeconomic conditions and links this data to existing Canadian cohort studies (including CanPath) as well as administrative health databases.

CANUE datasets, which are indexed to every postal code in Canada, enrich CanPath's existing information on individual lifestyle, health, and risk factors, physical measures and biosamples. This information is of interest for a wide range of studies, including those investigating the impacts of the urban environment on health, for example— that of local air quality, access to green spaces, opportunities for walking and cycling, noise and light pollution levels, and climate factors on the etiology of specific health outcomes and population health.

A second round of environmental exposure datasets will be linked with the national baseline and follow-up CanPath datasets and made available to researchers in June 2021.

INDIGENOUS HEALTH DATA

CanPath is collaborating with leaders of Indigenous organizations and health researchers to develop appropriate processes for access to and use of Indigenous participant data and biosamples. Approximately 7,700 participants who enrolled in CanPath have self-identified as Indigenous, and these data have not yet been made available to researchers.

CanPath collaborated with the Waakebiness-Bryce Institute for Indigenous Health during the summer of 2020 to hire Thilaxcy Yohathasan, Master of Public Health candidate, for a practicum project investigating the best way forward for CanPath's Indigenous data access process. Ms. Yohathasan's research included interviewing many respected Indigenous leaders and scholars to seek their advice.

Through this project, the addition of an Indigenous Review Structure was recommended. This advisory structure would apply national standards and best practices (e.g., Tri-Council standards) to determine whether CanPath's Indigenous data can be released for a research project. The advisory structure would have authority for research that includes recruitment with Indigenous identity, when Indigenous membership is a variable for research, or when results will refer to Indigenous identity.

CanPath continues to collaborate with Dr. Suzanne Stewart and the Waakebiness-Bryce Institute at the Dalla Lana School of Public Health to integrate the advisory structure for CanPath's Indigenous health data.

NATIONAL DATA LINKAGE

CanPath and the Health Data Research Network Canada (HDRN Canada) formed a partnership that will enable linkage between CanPath cohort data and administrative health data held at provincial data centres. Through this new partnership, researchers will be able to submit requests for multi-jurisdictional research projects using CanPath data through HDRN Canada's Data Access Support Hub (DASH).

By enabling researchers to connect data such as self-reported behaviours, physical measurements and biological samples from CanPath with use of health services and health outcomes captured by provincial health databases, we can gain deeper insights and develop solutions to pressing health challenges, including chronic illnesses, mental health, aging populations, and more.

CanPath initiated two pilot projects to identify how researchers can use HDRN Canada to link provincial health data with CanPath. The first pilot involves obtaining breast cancer incidence data from provincial cancer registries to support an approved project led by Dr. Jennifer Brooks. The second pilot, led by Dr. Victoria Kirsh, Scientific Associate at the Ontario Health Study, aims to use multiple provincial datasets to identify the effects of COVID-19 on CanPath participants in British Columbia, Alberta, and Ontario; including laboratory test results and hospital visits. These regions were selected for the pilot project because they have well-established connections to their provincial administrative data holders. Results and lessons learned from these pilot projects are expected in the 2021-2022 fiscal year.

INDUSTRY PARTNERSHIPS

This past fiscal year saw considerable work on developing proper governance and procedures to enable CanPath to work with researchers from the private sector.

ENVIRONMENTAL SCAN

The National Coordinating Centre, in partnership with Alberta's Tomorrow Project, conducted an environmental scan of other population health cohorts, biobanks, and data centres to learn best practices for engaging with the private sector. The report from this scan highlighted key recommendations for CanPath, including the development of a formal policy for working with industry, development of a single Materials Transfer Agreement that will cover all regions, revisions to the access process and the access pricing list.

DEVELOPMENT OF AN INDUSTRY RESEARCH POLICY

The National Coordinating Centre developed an industry research policy to outline the principles and procedures for research conducted using CanPath data and resources funded by industry, in contrast to publicly funded academic research which follows CanPath's standard data access procedures. This draft policy was presented to and reviewed by the Leadership Team, International Scientific Advisory Board, National Strategic Advisory Council and the Ethical, Legal and Social Issues Committee. The policy will be made publicly available on CanPath's website and used as the first point of engagement with researchers from the private sector.

DEVELOPMENT OF GUIDELINES FOR APPLYING INDUSTRY ACCESS FEES

CanPath's Cost Modeling Operations Working Group developed a guidelines document to provide the National Coordinating Centre a process for creating cost estimates for industry-sponsored research projects. These guidelines take in to account a variety of scenarios, such as the number of samples requested and value of returned data, to enable accurate cost estimates.

GENOMICS

With a biobank containing biosamples from over 150,000 participants across Canada, CanPath is a valuable platform for genomics research in Canada and globally. To date, CanPath has captured genotyping array data from approximately 45,000 individuals, with whole genome sequencing planned for a further 43,300 individuals through upcoming initiatives at the Ontario Health Study and CARTaGENE.

Quebec's CARTaGENE has genotyped its entire cohort, thanks to funding provided by Génome Québec. Genotyping data from the 30,000 participants who provided biological samples are expected to be made available to researchers in summer 2021.

In December 2020, Génome Québec, in partnership with Genome Canada, awarded CARTaGENE Scientific Directors Guillaume Lettre and Simon Gravel funding of more than $3 million for the GenoRef-Q Initiative. The GenoRef-Q initiative aims to sequence the complete genomes of 2,300 participants who have been previously genotyped within CARTaGENE.

"Our end goal is to create a catalogue of genetic variants found in the population of Québec and ultimately provide clinical geneticists and other clinicians with a powerful tool to interpret the results of genetic tests and to pinpoint the cause of various genetic diseases," says Dr. Lettre.

Beginning in April 2021, whole genome sequencing of more than 41,000 participants in the Ontario Health Study (OHS) will be carried out by the Canadian Data Integration Centre. Sequencing data could be available to approved researchers as early as fall 2021.

COVID-19 INITIATIVES

COVID-19 INITIATIVES

As Canada's largest population health study, CanPath responded quickly to the pandemic by leveraging its existing infrastructure to support national COVID-19 research. On April 21st, 2020, CanPath launched its COVID-19 Initiative which included a COVID-19 Questionnaire that was distributed across the entire cohort, and later included two seroprevalence studies, as well as immuno-genomic analyses. The Canadian Institutes of Health Research and the Government of Canada's COVID-19 Immunity Task Force together invested over $4.5 million in CanPath to collect blood samples for immunity surveillance and to identify risk factors and ways to improve COVID-19 control. As a longitudinal study, CanPath will also capture implications of COVID-19 over the long-term.

CanPath's COVID-19 initiatives are closely linked with major national and international research initiatives, including the COVID-19 Host Genetics Initiative, and are designed to integrate with international COVID-19 research efforts with goals of rapid data sharing and translation of findings to support public health, clinical and research communities.

COVID-19 QUESTIONNAIRE

From April to December 2020, over 101,500 CanPath participants from across Canada completed the COVID-19 Questionnaire. These responses were collected by the six regional cohorts that make up CanPath: the BC Generations Project, Alberta's Tomorrow Project, the Manitoba Tomorrow Project, Ontario Health Study, CARTaGENE (Quebec) and Atlantic PATH. This was the first follow-up data collected by the Manitoba Tomorrow Project, which is still in the participant recruitment phase.

Nationally harmonized data from the CanPath COVID-19 Questionnaire were made available to researchers in January 2021. Given the immediate need for pandemic research, CanPath revised its expedited review process to provide timelier access to the data.

Data collected through the COVID-19 Questionnaire included:

- Self-reported COVID-19 test results/ suspected infection
- Symptoms experienced (if any)
- Current health status and risk factors
- Potential sources of exposure
- Lifestyle and behaviours (alcohol use, tobacco use etc.)
- Impact of the pandemic on job status
- Impact of the pandemic on mental, emotional, social and financial well-being

Several access requests for the national COVID-19 Questionnaire data were approved during the 2020-2021 fiscal year, including projects investigating characteristics of the pandemic and risk factors, impact on cancer survivors, predictive analysis of clinical symptoms, and the impact of the pandemic on the mental health of Canadians. The CARTaGENE team released the results of the COVID-19 Questionnaire in Quebec in September 2020, with a publication in

COVID-19 INITIATIVES

BMC Infectious Diseases in May 2021.

SUPPORT-CANADA

In June, CanPath was awarded a $2.1 million grant from the Canadian Institutes of Health Research (CIHR) through their COVID-19 Rapid Research Funding competition. The initiative, titled SUrveying Prospective Population cOhorts for COVID-19 pRevalence and ouTcomes in Canada (SUPPORT-Canada), aims to capture data and biospecimens to enable longitudinal population-level surveillance. SUPPORT-Canada enables researchers and clinicians to find factors contributing to COVID-19 susceptibility, severity and outcomes, thereby identifying factors predisposing individuals or communities across Canada to a high risk of infection.

SUPPORT-Canada was built out from CanPath, along with support from numerous research platforms and service providers.

SUPPORT-Canada aims to:

1. Capture population and clinical-level COVID-19 data and outcomes to support personalized risk profiling, and inform adaptive social and public health responses;
2. Create capacity for world-leading research in immunophenotyping, seroprevalence and host-viral genetics; and
3. Explore the role that genetics, co-morbidities and the environment play in shaping the pathophysiology of COVID-19 severity, susceptibility and immunological response.

COVID-19 INITIATIVES

SUPPORT-CANADA CONTINUED

In September 2020, CanPath was awarded an additional $500,000 in funds from the Government of Canada's COVID-19 Immunity Task Force (CITF) for the SUPPORT-Canada initiative. This award built upon the CIHR support to conduct COVID-19 surveys on the entire CanPath cohort and immuno-genomic analyses on a subset of participants.

The SUPPORT-Canada seroprevalence study is testing 3,000 randomly selected CanPath participants at three time points (500 per regional cohort) by collecting dried blood spot samples. The first sample collection took place in spring 2021.

This study will also develop capacity for immunogenomics through blood collection from 4,000 participants from the Ontario Health Study, Alberta's Tomorrow Project and clinical partnerships.

COVID-19 ANTIBODY STUDY

In October, the Government of Canada invested $1.9 million through Canada's COVID-19 Immunity Task Force (CITF) to fund a CanPath study looking at COVID-19 seroprevalence across Canada, with a particular focus on certain populations that have a higher risk of infection.

This pan-Canadian study is testing 20,000 participants for both viral and vaccine antibodies. The study focuses on adults ages 30 and older who may have been exposed to SARS-CoV-2 in populations that are traditionally not included in studies or are among the highest risk of exposure to COVID-19. This includes residents of long-term care homes, newcomers to Canada, and people living in under-served urban and rural communities with higher numbers of COVID-19 cases.

"Protecting the health of all Canadians, including those who are at higher risk of infection because of their social or economic situation, is a top priority in our ongoing management of COVID-19 in Canada," said Dr. Theresa Tam, Chief Public Health Officer of Canada. "This study will improve our understanding of the spread of COVID-19 among populations at higher risk of infection and will allow us to plan and target our public health approaches more effectively."

Invited participants were asked to complete an online questionnaire and provide a dried blood spot using a kit mailed to their home. A successful pilot project was conducted by the BC Generations Project and Atlantic PATH cohorts in February 2021, and the study was subsequently rolled out in all six regional cohorts. By the end of March 2021, over 6,000 online questionnaires were completed by participants across Canada and sample collection kits were mailed to their homes. First results from this study will be released in June 2021.

COVID-19 INITIATIVES

INTERNATIONAL COLLABORATION

CanPath became a member of the COVID-19 Host Genetics Initiative, which brings together the international human genetics community to generate, share and analyze data to learn the genetic determinants of COVID-19 susceptibility, severity and outcomes. Over 195 contributing studies from around the world sought to provide an environment to foster the sharing of resources to facilitate COVID-19 host genetics research (e.g. protocols, questionnaires), and to organize analytical activities across studies to identify genetic determinants of COVID-19 susceptibility and severity. The COVID-19 Host Genetics Initiative provides a platform to share the results from meta-analytical activities to benefit the broader scientific community.

MAKING OUR MARK

COMMUNICATIONS

During the 2020-2021 fiscal year, CanPath completed the rollout of the new brand and worked to raise awareness of the CanPath platform amongst the research community. CanPath attended several virtual conferences as an exhibitor, and members of the CanPath team across Canada presented 45 abstracts and presentations at Canadian and international conferences.

The inaugural issue of the quarterly research newsletter, CanPath News, was released in June 2020 and the number of subscriptions continues to rise. A CanPath presence was established on LinkedIn and the following continues to grow, in addition to the number of followers on Twitter and Facebook.

The launch of CanPath's COVID-19 Initiatives generated substantial media coverage, including online, print, TV and radio outlets such as CTV News, Global News, CBC Radio, and The Globe & Mail. This coverage helped raise the CanPath profile within the research community, study participants and the general public.

WEBINAR SERIES

The CanPath webinar series was expanded to five well-attended webinars highlighting CanPath data and its potential research applications in order to encourage researchers to submit access requests.

June 24, 2020: How Population Cohorts Can Support COVID-19 Research

Presented by: Dr. Philip Awadalla
Panelists: Rebecca Christensen, Dr. Michael Schull, Dr. Arjumand Siddiqi
Moderator: Dr. John McLaughlin

Sept. 30, 2020: Exploration of the role of occupational exposures in cancer etiology among participants in the CanPath Study

Presented by: Dr. Vikki Ho

Nov. 25, 2020: Exploring senescence-associated biomarkers of biological age in the CARTaGENE study

Presented by: Dr. Francis Rodier, Dr. Sophie Marcoux

Dec. 9, 2020: CanPath COVID-19 Questionnaire Results: A Preliminary Analysis

Presented by: Dr. Victoria Kirsh
Partner: Canadian Public Health Assocation

Jan. 27, 2021: Research Spotlight: How 3 trainees are using CanPath data and biosamples

Presented by: Dr. Trevor Dummer, Molly Sweeney Magee, Jacob Nearing, Kalli Hood

Average attendance: 120 attendees

84% of attendees rated satisfaction with the webinars as 8/10 or higher

STRATEGIC PROJECTS

STRATEGIC DEVELOPMENT PROJECTS

During the 2019-2020 fiscal year, three interdisciplinary teams were selected to lead innovative projects that aimed to enhance the processes and sustainability of the pan-Canadian population health research platform. These projects began in the fall of 2019, however project completion was delayed due to the COVID-19 pandemic.

Each principal investigator led an interdisciplinary team of researchers to conduct collaborative projects that enhance CanPath's data platform and can be distributed across the regional cohorts.

Project 1: "A Virtual Tumour Tissue Bank to Enhance CanPath as a Resource for Innovative Cancer Research" led by Dr. Parveen Bhatti, Scientific Director of the BC Generations Project

The aim of this project was to establish and test a virtual tissue bank for obtaining access to tumour samples collected from cancer cases diagnosed in the BC Generations Project (BCGP). Through the BC Cancer Registry, the team identified copies of pathology reports for incident solid cancer cases diagnosed among BCGP participants. From the pathology reports, information was abstracted into an access database including the name of the pathology lab, report date, sample source (i.e. biopsy or excision), report number and best sample (i.e. block IDs containing tumour specimen). From among the successfully abstracted pathology reports, a total of 200 breast, colorectal, bladder and pancreatic cancer cases were selected and an attempt was made to retrieve formalin-fixed, paraffin-embedded (FFPE) blocks from laboratories around BC. Access to tumour samples was sought at the health authority level.

As of 2019, 1,547 incident cases of solid cancer were diagnosed in BCGP. A pathology report was identified for 856 (54%) of these cases. The team successfully obtained approval to access tumour samples from all seven health authorities to which they applied. By March 2021, 122 (61%) of the requested tumour samples had been received. The two health authorities from which the largest number of samples was requested required more time to fulfill the requests. Visual inspection of the 122 samples did not reveal any concerns about specimen quality.

STRATEGIC DEVELOPMENT PROJECTS

Pending receipt of the remaining requested samples and development of an electronic record data extraction platform, a comprehensive, virtual tumour biorepository to support novel epidemiologic and clinical research within BCGP can be successfully established. The ability of other CanPath cohorts to establish similar systems will depend on specific regulations and requirements within the individual provinces that the cohorts are based.

Project 2: "Development of an online sample and data access management system customizable by all CanPath regional cohorts and the National Coordinating Centre" led by Dr. Philippe Broët, Co-Scientific Director of CARTaGENE

This project's main goal was to develop, implement and promote an online access management system for all CanPath regional cohorts and the National Coordinating Centre (NCC). The aim was to enhance the OBiBa Software Suite to fit the needs of all cohorts. The access system used by CARTaGENE (CaG) and CanPath is mainly based on three OBiBa softwares: Agate (login), Mica (data access management), and Opal (aggregated data).

The new system includes automatic notifications and reminders that will greatly help the Data Access Officer's work. It also enables easy tracking of metrics — such as number of access requests, amendments and time spans —and allows researchers to post comments, enhancing online collaboration.

The project was completed in December 2020 after successfully launching the new system at CaG. The system is also currently being implemented at CanPath for the national Access Office and is expected to launch in Spring 2021. Implementation of the new system at the Ontario Health Study was put on hold as all resources were redirected to the COVID-19 initiatives.

Project 3: "Occupational Health: Job Title Cleaning by Algorithm" led by Dr. Ellen Sweeney, Director of Strategic Research Initiatives at Atlantic PATH

The residential and occupational health data held by the regional cohorts provide critical exposure elements. However, to

STRATEGIC DEVELOPMENT PROJECTS

date, the occupational data have been underutilized by researchers because it requires cleaning to remove identifiable information, as well as coding to standard classification systems for comparison to national and international reports and literature. Currently, cleaning and coding is a manual process, requiring a significant investment of staff time and funds. Utilizing the funds awarded by CanPath, the team tested the Automated Coding Algorithm for the Canadian National Occupation Classification (ACA-NOC) on two regional CanPath cohorts (Atlantic PATH and Alberta's Tomorrow Project (ATP).)

Specific objectives included server upgrades at Atlantic PATH to increase computational capacity; utilizing an iterative and interactive process of applying the ACA-NOC algorithm to the job title data from Atlantic PATH (n=47,000) and ATP (n=64,000), while further refining the algorithm to improve efficacy; returning the coded data and enriching the Atlantic PATH and ATP's research platforms; and promoting the data via knowledge translation efforts and outreach work.

Building on the work of Drs. Baker and Adisesh, the team applied the ACA-NOC algorithm to both the Atlantic PATH and ATP datasets in order to code the job title data and determine the accuracy of the algorithm. The algorithm was further refined based on each round of analysis,

increasing its efficiency and the quantity of accurately coded data.

The project fulfilled the original deliverables, as well as additional deliverables including gold standard datasets for both Atlantic PATH and ATP and subsets of data on specific occupations. Additionally, new machine learning efforts have shown that significant performance speed implications and self-coding options for participants can be anticipated in future work.

This project clearly demonstrated the ability to refine the ACA-NOC algorithm resulting in an improvement in its efficiency and efficacy and an increase in overall matches in subsequent versions.

Ultimately, this work will harmonize and expand the utility of the occupational data, while further enriching the CanPath data platform.

REGIONAL COHORTS

BC GENERATIONS PROJECT

The BC Generations Project (BCGP) successfully maintained operations during the precautionary COVID-19 lockdowns despite the challenges of staff working off-site. The temporarily closed call centre has been re-opened and continues to provide participant support. Recently added to the team, staff member Jaclyn Parks takes on the role of Data Access Manager to assess and coordinate access and ancillary study applications.

BCGP finalized a couple of studies this past year, most notably the CanPath Strategic Development Project examining the feasibility of creating a virtual tumour tissue bank for incident cancer cases diagnosed among BCGP participants. Results of the project suggest that a virtual tumour tissue biorepository is a promising approach for providing investigators access to highly annotated tumour specimens that would support innovative research.

Also completed in the fall was the COVID-19 Questionnaire, which we are pleased to report had a 69% response rate from participants. This led to the subsequent project, the COVID-19 Antibody Study, which includes the collection of a questionnaire and dried blood spot samples and is currently in the field.

Plans for next year involve initiating collection of a second set of blood and urine samples from a set of participants at higher risk of cancer to support studies of early cancer detection. We will also be collecting stool samples from this group to support gut microbiome research. The ultimate goal is to expand this project to include the entire cohort.

BC GENERATIONS PROJECT
Your time today builds a healthier tomorrow.

ALBERTA'S TOMORROW PROJECT

In 2020, Alberta's Tomorrow Project (ATP) developed a Participant Advisory Committee of 30 ATP participants who met four times to provide diverse perspectives, insights and strategy into the areas of participant engagement, project design, communication materials, and specifically this year, provincial and national COVID-19 projects. A manuscript for publication describing how the PAC came to be is in development.

Improving customer and participant experience is a priority for ATP. Over the last year, both the researcher and participant portals have been enhanced to streamline and automate processes for both researchers and participants.

In summer 2020, ATP successfully recruited 19,000 participants to complete the CanPath COVID-19 Questionnaire. In addition, Alberta Health commissioned ATP as one of four targeted provincial serological studies to test people throughout the province. The study launched in September and involved inviting 4,000 participants to visit one of four study centres in the Calgary, Edmonton, Red Deer, and Lethbridge areas to have their blood drawn. The blood samples, in addition to detailed questionnaire data, are collected for a period of one year, once every four months, to test for COVID-19 antibodies to estimate the number of Albertans who have been exposed to COVID-19 and to capture important health information and changes in behaviours and lifestyle during the pandemic. This study is enhancing ATP's data and sample repositories, raising our profile, and supporting the Alberta government's public health response to the COVID-19 pandemic while contributing toward CanPath's national COVID-19 serological surveillance efforts.

SASKATCHEWAN PATH

In September 2020, the Canadian Partnership Against Cancer approved the Saskatchewan Cancer Agency (SCA), under Scientific Director Riaz Alvi, for the development of a Saskatchewan cohort. The inclusion of a Saskatchewan cohort allows CanPath to include participants from all ten Canadian provinces.

During the development phase, Saskatchewan will focus on developing the processes required to implement a research ready platform to enable participant recruitment, including the processes required for biosample collection, processing and storage, the required information technology infrastructure, communications planning, and regulatory approvals. The development phase will also include the initiation of a pilot.

This fiscal year focused on stakeholder engagement with partners in the health sector and research community, as well as team development, welcoming Suzanne Dallorto as Operations Lead, Jing Zhang as Biosample Coordinator and Adesina Popoola as IT Business Analyst.

The SCA remains committed to attaining the resources required to ensure the development of a successful cohort in the province of Saskatchewan. The ongoing support and guidance of regional cohorts and the National Coordinating Centre has benefited the planning completed to date.

THE MANITOBA TOMORROW PROJECT

During the 2020-2021 fiscal year, the Manitoba Tomorrow Project (MTP) recruited 1,800 participants, for a current total of just over 3,100.

MTP expanded the size of its blind recruitment mailout in collaboration with Manitoba Health, utilizing health administrative data and records, and increasing its reach to three mailouts of 10,000 each (from 5,000). This year MTP plans to increase the mailout size again to three to four mailouts of 20,000 each.

MTP is retaining a professional marketing and advertising firm to increase its efficacy and reach in Manitoba, particularly as it is relying on virtual events and e-communications again in the 2021-2022 fiscal year. Preliminary discussions have taken place in order to initiate the communications strategy.

The project has renewed its advertising plans with CORUS entertainment (TV and radio spots) and sent the inaugural "MTP News" e-newsletter to participants in June 2020. MTP is also extending its partnership with the CancerCare Manitoba Foundation, collaborating on a province-wide community engagement event during the summer of 2021. Though the pandemic continues to limit the opportunity for in-person events, the MTP will benefit from an increased virtual presence through this partnership.

The MTP COVID-19 Questionnaire was distributed to over 1,100 participants and received 1,070 responses. MTP is awaiting ethics approval, expected in Spring 2021, to participate in the CanPath COVID-19 Antibody Study.

CancerCare Manitoba
ActionCancerManitoba
THE MANITOBA TOMORROW PROJECT

ONTARIO HEALTH STUDY

The Ontario Health Study (OHS) COVID-19 Questionnaire launched in Spring 2020. By the time it closed in November, over 42,000 OHS participants had taken part. The seroprevalence study launched in February 2021, to collect additional questionnaire responses and measure COVID-19 antibodies in dried blood spot samples. The OHS IT platform at the Ontario Institute for Cancer Research (OICR) was leveraged to host these questionnaires for the OHS and three CanPath cohorts.

Data from the COVID-19 Questionnaire are now available to researchers, and data from the OHS Follow-up Questionnaire were transferred to the Institute for Clinical Evaluative Sciences (ICES) to facilitate data analyses requiring linkage to administrative data.

The Study team encouraged researchers to access OHS data via three email blasts, six poster presentations, and three seminar presentations, all done online. The OHS appeared in online, print or television media 16 times during the year.

The OHS secured a new home for its biorepository. The transfer of six freezers containing the blood, urine and other biospecimen samples of more than 41,000 participants was completed by spring 2021. The Study launched a long-term initiative to sequence the whole genomes of those participants, with whole genome sequencing providing additional information that will complement the existing genotyping data of more than 9,600 participants.

Twelve research teams submitted requests to access OHS data and/or biospecimens this year; nine have been approved and the remainder are pending. Research topics included COVID-19, colorectal and breast cancers, the effect of air pollution on cancer and autoimmune disease, and a cohort profile of the OHS.

CARTAGENE

During the 2020-21 fiscal year, CARTaGENE was one of the first Canadian cohorts to recontact its participants (June 2020) to collect data on COVID-19. Joining efforts on a national level with CanPath and following federal funding, a second phase of the study was developed to collect data and samples for a study on serology, which was launched at the end of March 2021.

In parallel, CARTaGENE carried out a study on radon exposure in partnership with Health Canada on a sub-cohort, over a period of three months. A second collaboration was initiated with the National Biomonitoring Program of Health Canada with a feasibility study, which could lead to a longitudinal survey in measuring temporal trends of chemical exposures within the CARTaGENE cohort.

CARTaGENE also collaborated with the Institut National de Santé Publique (INSPQ) in order to explore zoonotic cases within its cohort and CARTaGENE's potential to support INSPQ in better understanding the problem of zoonosis in Quebec. The outcome was positive, resulting in a request for access to data and samples from INSPQ and a future collaboration is expected.

CARTaGENE also pursued the enhancement of its database by completing the genotyping of its entire cohort thanks to provincial funding from Genome Quebec. In addition, CARTaGENE has successfully obtained a grant from Genome Canada and Genome Quebec to sequence the whole genome of 2,300 participants. These highly anticipated new datasets will allow for significant progress in the field of genetic research.

There are currently 81 ongoing research projects using CARTaGENE data. 18 additional scientific papers were published during 2020-21.

ATLANTIC PATH

Atlantic PATH had a productive year with the team working from home to respect public health guidelines related to COVID-19. The study successfully implemented the COVID-19 Questionnaire to approximately 13,000 participants and launched the COVID-19 Antibody Study, including a questionnaire and dried blood spot cards.

We are very pleased to announce that Dr. Robin Urquhart has been named the new Scientific Director of Atlantic PATH. Dr. Urquhart holds the Canadian Cancer Society Endowed Chair in Population Cancer Research in the Department of Community Health and Epidemiology at Dalhousie University and is the Nova Scotia Lead for the Terry Fox Research Institute Marathon of Hope Cancer Centres Network. "I'm thrilled and excited to take on this role," says Dr. Urquhart. "Because of my involvement with Atlantic-wide initiatives around cancer research, I see this as a great opportunity to bring people and resources together and build our leadership and capacity in the region."

Atlantic PATH was fortunate to be involved in several successful funding applications this past year. Drs. Jong Sung Kim, Raza Ibidi, Gabriela Ilie and Ellen Sweeney received funding from Nova Scotia Health to expand their research program on arsenic exposure and cancer in Atlantic Canada. Atlantic PATH colleague and collaborator, Dr. Graham Dellaire, received Canada Foundation for Innovation funding to support research on the risk of cancer associated with arsenic and radon exposure. We are also involved with the Canadian Environmental Exposures in Cancer Network led by Dr. Dellaire.

Continuing the study's representation in advising trainees, we were members of committees for two Research-In-Medicine students (Dalhousie University and Dalhousie Medicine New Brunswick) and three graduate students at Dalhousie University.

The in-house team continues to foster collaborations and actively contribute to research. Atlantic PATH had 11 new publications this year, with one forthcoming and six currently under review, as well as 18 new and ongoing approved access requests.

CanPath

Canadian Partnership
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