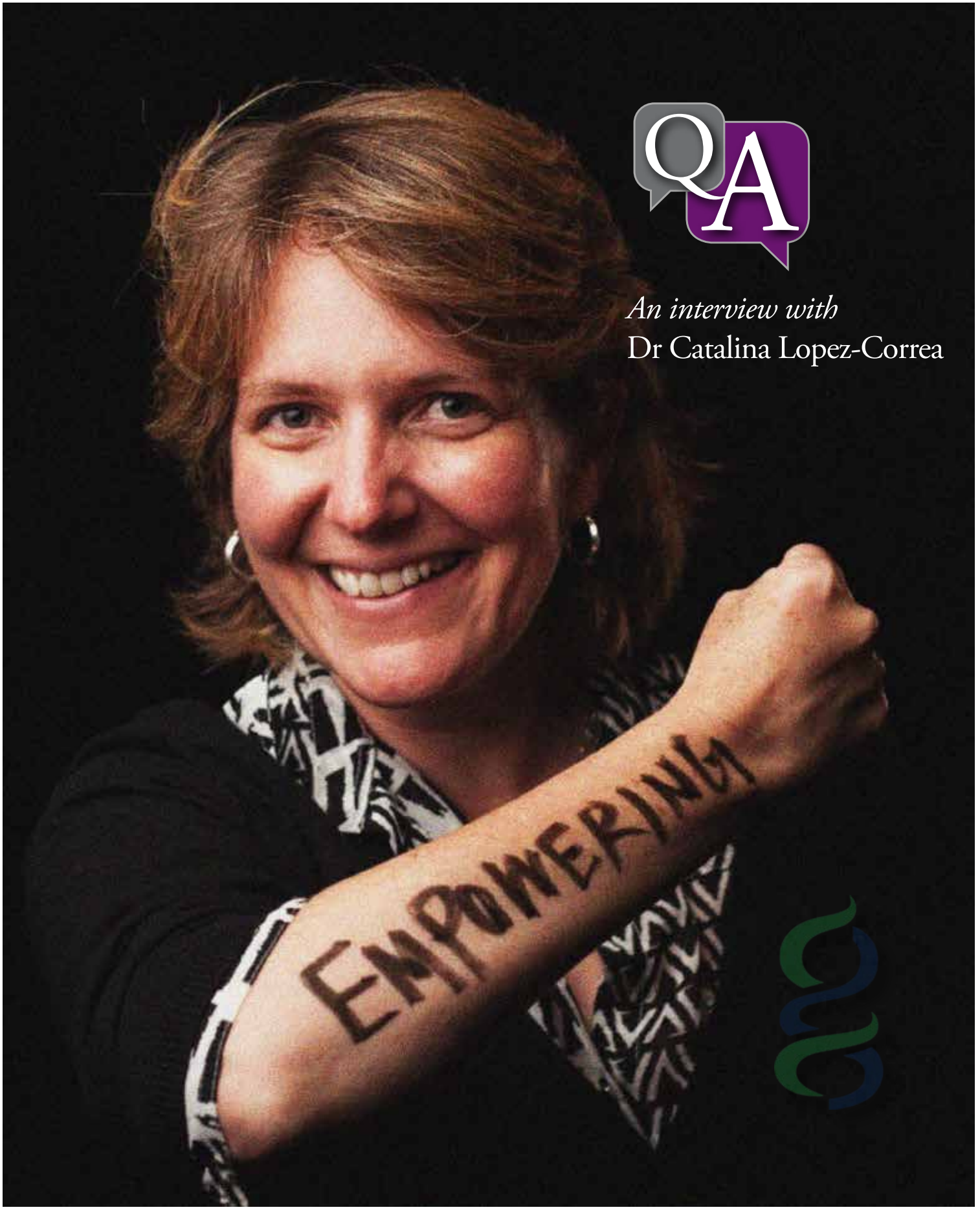

QA
An interview with
Dr Catalina Lopez-Correa
EMPOWERING

Highlighting Genome BC

Genome BC is a non-profit research organization in Vancouver, BC, that leads genomics innovation on Canada's West Coast and facilitates the integration of genomics into society. Its major investors are the Province of British Columbia and the Government of Canada through Genome Canada and Western Economic Diversification Canada. Funding for Genome BC is complemented by partnerships with national and international public and private funding organizations. In turn, Genome BC invests in research, entrepreneurship and commercialization in life sciences to address challenges in key biotechnology sectors.

We contacted Dr Lopez-Correa, Chief Scientific Officer and Vice President, Sectors, at Genome BC, to answer a few questions about Genome BC:

Q What do you see as Genome BC's unique contributions to science?

A Let's start with the critical mission at Genome BC. Our view is that genomics positively impacts life, every day. We put this view into practice by applying the power of genomics to pressing societal and economic challenges.

Genome BC invests in research, facilitates innovation and drives the responsible uptake of genomics applications through expert services and societal engagement. We are also recognized for our cross-cutting genomic expertise, community building and connections (see **Figure 1**). We also support technology platforms for genomics, proteomics, microbiome profiling, and other areas. Information can be found at our website and is depicted in **Figure 2**.

We cover several sectors where genomics has the potential to have an economic and social impact: human health, agriculture, fisheries, forestry, mining, energy and the environment. Our unique approach allows us to undertake and manage complex research and innovation, mobilize partner investment and mitigate risk in the translation and commercialization processes. We aim to apply the power of genomics to better the lives of British Columbians and all Canadians through a high performing health care system as well as thriving agrifood and natural resources sectors.

Q What are the unique benefits of setting up Genome BC in the province?

A Genome BC is part of a greater genomics enterprise. The genomics enterprise refers to Genome Canada and the six regional genome centres across the country including: Genome Atlantic, Genome Quebec, Ontario Genomics, Genome Prairie, Genome Alberta and Genome BC. Genome BC is an equal player on the Canadian federal scene. In addition to have a thriving genomics hub here in British Columbia, we are well-positioned to remain competitive nationally and highly relevant internationally.

Q What do you see as Genome BC's educational mission to the province? and beyond?

A We believe that scientific literacy is essential. Advances in science and technology are rapidly changing our lives; it is affecting everything from how people engage with new products and services, to how students identify careers and prepare for them. Increasingly, people from all walks of life require a basic understanding of the principles of science, technology, engineering and math (STEM) and how they are applied. These skills, combined with other disciplines, teach us how to think critically, solve problems, and make informed decisions.

We hope to educate and empower people to make informed decisions about their own health and better understand results. We have developed several communications and education outreach programs in aid of increasing understanding and awareness of genomics. Genome BC's Geneskool is a strong example of how science opportunities for youth can be enhanced, so that kids grow up understanding, questioning and responsibly applying, new technologies. In addition to a variety of programs, Geneskool supports teachers by providing hands-on classroom activities and workshops aligned to BC's grade 9-12 curricula, to help educate students about this complex topic in new and interesting ways.

Genome BC Geneskool also positions genetics and genomics in the larger science education ecosystem through strategic partnerships and community development contributions. We also host several public talks – GeneTalks and the Don Rix Distinguished Keynote, which are public events aimed at engaging with the general public.

Q How would you describe Genome BC's unique partnerships and initiatives?

A We have programs like GeneSolve and the Strategic Initiatives Program (SIP) that are specifically aligned with the provincial priorities (ministerial service plans). We are unique in that we have funding to run our own programs and this gives us flexibility to address regional priorities and emerging issues as well as develop international partnerships that fit with our mandate.

Q Could you expand on Genome BC's funding model? How does this model bring economic benefits to the province?

A Genome BC was founded as a regional genome centre as part of Canada's genomic enterprise and anchored by Genome Canada and its federal research funding. We are highly competitive on the national stage garnering an average of 28% of federal dollars available in national competitions.

In addition to federal funding, Genome BC proactively seeks out several potential regional, national and international partners and develops longstanding, strategic relationships. Often these partners are co-funders on the research projects that we fund.

Genome BC also receives investment from the Province of BC which enables us to address provincial priorities and emerging issues – providing solutions to some of BC's pressing challenges. This strategic alignment and agility are reflected through our research, as well as through activities in the areas of genomics and society, education, and communication – all areas where Genome BC is occupying a leadership position within the Canadian genomic enterprise.

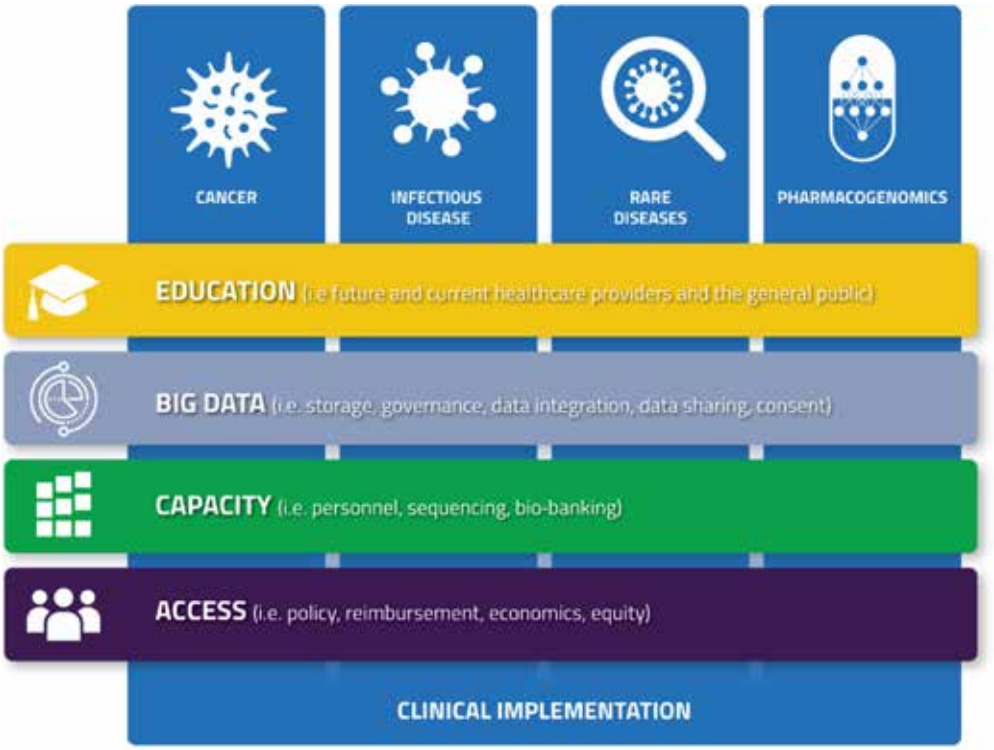


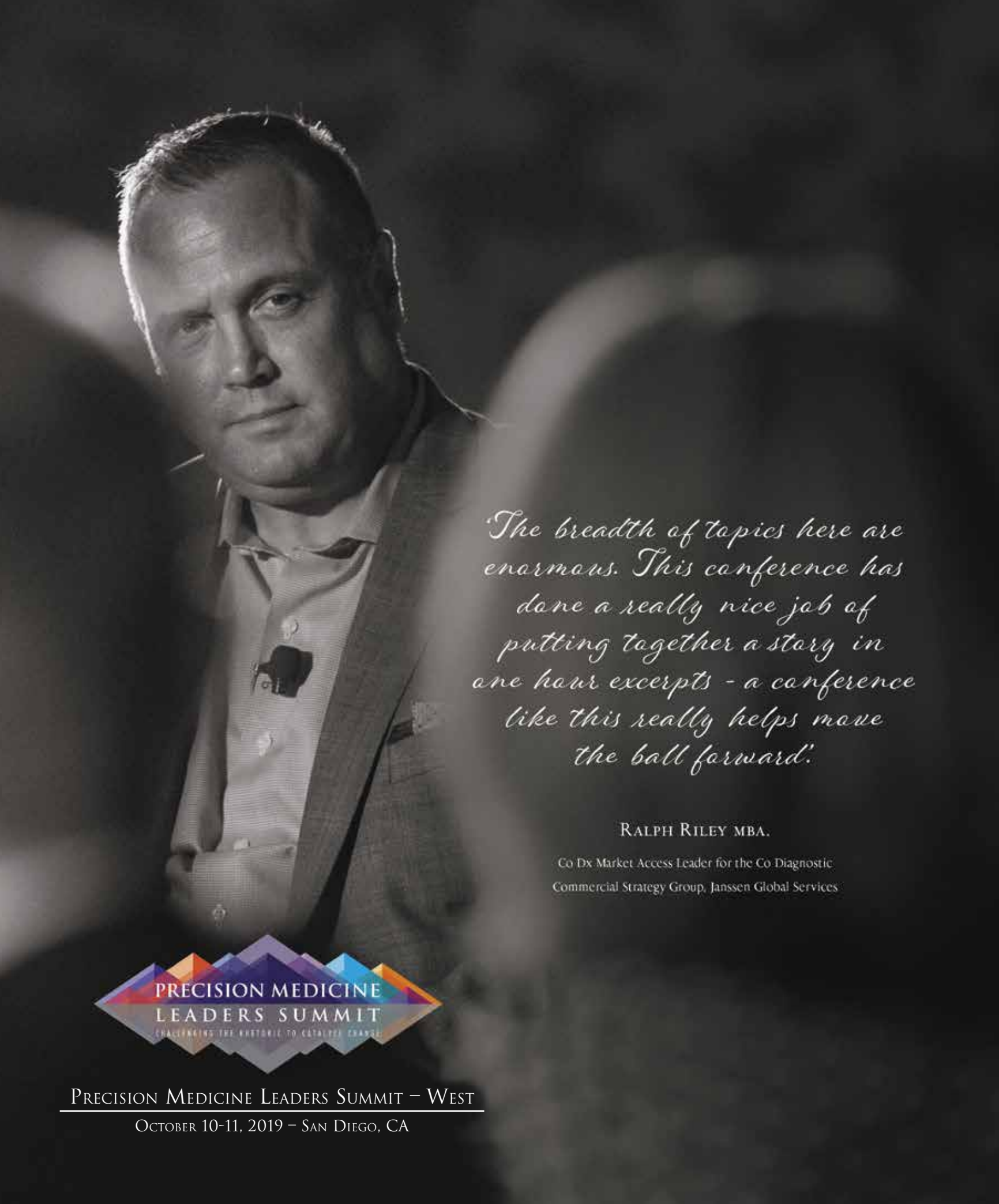
Figure 1: Cross theme coverage of clinical implementation and critical resource areas at Genome BC.

From a numbers perspective:

- BC had the highest citation rates in genomics of any province. BC's papers in genomics were cited 70% more often than the world average, and about 20% of papers were among the 10% most cited worldwide.
- Since 2000, Genome BC's strategic investments into research projects, entrepreneurship and commercialization, has contributed ~2.6B to BC's GDP, and has created and enabled over 32,000 jobs.

Q What is the nature and goal of Genome BC's strategic international collaborations?

A Our collaborations are designed to bring benefits to Canada. We look for innovations that we don't currently have here and work to integrate them into our investments. We cover areas of priority like human health, agrifoods and natural resources so that these key sectors can keep up with global trends.



Precision Medicine Leaders Summit – West

October 10-11, 2019 – San Diego, CA

We have collaborated with many European organizations. In health we developed projects in collaboration with Genomics England and we are active members of the EU ICPerMed, an initiative that supports the implementation or Personalized Medicine in Europe and around the world. We have also participated in several ERA-NET initiatives and other funding programs coordinated by the European Commission.

Q Could you provide insight on how Genome BC is exploring societal impacts of genome sciences? What are the social benefits?

A Genome BC recognizes the need for a deeper understanding of the factors influencing the public's level of acceptance of genomics technology. Responsible innovation suggests addressing societal implications as early in the research phase as possible, with the involvement of end users and stakeholders.

Through its research and societal engagement activities, Genome BC plays a key role in helping to gain the requirements for a social license to utilize genomic technology.

Implications regarding the use of genomics include the ethical, economic, environmental, legal and social concerns. (We refer to this as GE^{3}LS).

Another key driver of innovation is a clear regulatory pathway and understanding of potential economic impacts. This is addressed through the integrated GE^{3}LS research focus both at Genome Canada and Genome BC programmatic levels.

Q Finally, what do you plan for future direction of Genome BC, e.g., public health, pharmacogenomics?

A Simply put, we want to develop local expertise and match it with global impact. Climate change, water treatment and food security – these are the big, human challenges of our time and genomics has the potential to make deliberate, intentional strides in addressing them.

In health, we want to advance the clinical application of genomics. Genomics has achieved important, incremental advancements in cancer and rare diseases that have certainly benefited patients.

However, pharmacogenomics has enormous potential to transform health outcomes for Canadians. We're working to see this become a standard tool in day-to-day clinical care. ■

Figure 2: Technology platforms maintained at Genome BC to execute its mission.
See also https://www.genomebc.ca/competition/platforms-2016-gtp/

Dr Catalina Lopez-Correa is the Chief Scientific Officer and Vice President, Sectors, at Genome BC. She has 20 years of international experience in both the academic and private sectors,

Before becoming one of Canada's leading advocates for genomics research and translation, Catalina held senior research positions with pharmaceutical giant Eli Lilly and the renowned deCODE genetics lab in Iceland. From leading teams to identifying genomic biomarkers in therapeutic areas of oncology, cardio-metabolic, and neurosciences to developing screening strategies associated with disease, Catalina's leadership helped drive the discovery and development pipelines.

As part of her commitment to international development, Catalina has championed several initiatives aimed at demonstrating the impact of genomics in developing countries, including a book on Genomics in Emerging Economies and several articles. Since 2002 she has served as evaluator for large multinational projects funded by the European Commission and has been recognized with several awards nationally and internationally.

Catalina holds a Medical degree from the UPB in Colombia, a Master's Degree in Human Genetics from Paris V University in France, a PhD in Medical Sciences from the KU Leuven in Belgium, and a mini MBA from McGill University in Canada.

Awards:
Dr. Catalina Lopez-Correa's deep understanding of genomics has inspired leaders in science and industry to collaborate toward solving some of the world's greatest challenges. In 2017 she received the Canadian Senate 150th Anniversary Medal. In 2013 she was recognized by National Order of Merit Award in the Rank of Officer, appointed by the Honorable President of the Republic of Colombia. In 2012 she was recognized as one of the 100 Colombians living abroad that have been highly successful on their professional career.

For more information, visit:
https://www.genomebc.ca/