CELEBRATING EXCELLENCE

Oncology Exchange regularly reports the scientific discoveries and innovative practices that contribute to improving cancer care in Canada. However, we rarely have an opportunity to look closely at the people responsible for these advances. This new section has been added to the journal to correct this oversight. It provides an opportunity to introduce readers to talented and dedicated clinicians and researchers who have not only made their mark on oncology, but also help make Canada an international powerhouse for discovery and excellence in cancer care.

In this issue, we feature profiles of four people who have contributed to oncology practice in different ways.

Dr. Bartha Knoppers
bioethicist

Building a solid ethical foundation for advances in genomics

Dr. Fiona Schulte
pediatric psychosocial oncologist

Helping children and their families cope with cancer and survivorship

Dr. Tom Hudson
genome scientist

Driving gene-based discovery right through to new therapies

Dr. Jean Maroun
medical oncologist and cancer treatment researcher

Combining discovery, clinical care and continuing education

Dr. Bartha Knoppers

Building a solid ethical foundation for advances in genomics

Bartha Maria Knoppers, PhD, is a Professor of Comparative Medical Law and Director of the Centre of Genomics and Policy of the Faculty of Medicine at McGill University. Throughout her career, she has worked to produce a better understanding of ethical and legal issues in the areas of reproductive genetics, pediatrics, biobanks, privacy and personalized medicine, and to support the development of national and international policies that will guide the conduct of industry, health professionals, researchers and government. On September 28, 2018, *Oncology Exchange* spoke with Dr. Knoppers to find out how these efforts are evolving, what they have accomplished and what challenges she sees for the future.

Recognized for her outstanding contributions in science, ethics and law, Dr. Knoppers is a Fellow of the American Association for the Advancement of Science (AAAS), the Hastings Center (bioethics), the Canadian Academy Health Sciences (CAHS), and the Royal Society of Canada (2016), among others. She was awarded the "Great Montrealer" prize by the Board of Trade of Metropolitan Montreal in 2014 and was named a Commander of the Order of Montreal in 2016. She holds the Canada Research Chair in Law and Med since 2001.

In 2002, Dr. Knoppers was made an Officer of the Order of Canada, in recognition of her role as a "world authority on the ethical aspects of genetics, genomics and biotechnology." In 2012, she was named an Officer of the National Order of Quebec, in recognition of her pioneering role in establishing Québec's biomedical research infrastructure. "Professor Knoppers is a world leader in the fight for the social appropriation of genetics and genomics, and we are delighted that she has been recognized for her exceptional work," stated Marc LePage, President and CEO of Génome Québec at the time.

ETHICAL UNDERPINNINGS OF GENOMIC ADVANCES

Ensuring that genomic advances align with population health goals and respect fundamental rights requires global collaborative efforts. Dr. Knoppers has played a critical role in these efforts since the earliest days of the Human Genome Project. Between 1993 and 1997, she was a member of the United Nations Educational, Scientific and Cultural Organization (UNESCO) International Bioethics Committee, which drafted the Universal Declaration on the Human Genome and Human Rights. She also Chaired the International Ethics Committee of the Human Genome Project (HUGO), from 1996 to 2004.

FROM MAPPING TO DATASETS

The first complete sequencing of the human genome marked the beginning of the next set of challenges at both the national and international scale: how to assemble a broad dataset of genomic information that would help identify the genes involved in different diseases. At an international level, this led to Dr. Knoppers co-founding the Public Population Project in Genomics (P3G) in 2007. That same year, she also cofounded the CARTaGENE project with Dr. Claude Laberge to create Quebec's first biobank. Both projects arose from the need she described to us as to "prospectively harmonize and make interoperable — that's different from standardizing — emerging population longitudinal biobank studies as much as possible: the questions asked, the measures taken, the consents..." In the longitudinal population studies required to assess resistance to, risk and progression of disease, statistical significance requires being able to combine data from different countries. "If you need 10,000 women age 42 with breast cancer, you won't get

them unless you're able to combine data across different biobanks around the world," says Dr. Knoppers. "The goal (with P3G) was to get national biobanking population studies off on the same railroad track, even though the cars would be different. And it's been successful."

So successful, in fact, that in 2019, P3G will close in its original configuration. The different population cohorts made up by these harmonized biobanks in different countries are largely harmonized and being used by clinician researchers as control groups to compare against people with a specific disease, as well as in studies examining the characteristics and progression of a particular disease. "What we've done with P3G now," says Dr. Knoppers, "is transformed it into the Policy Partnerships Project for Genomic Governance, now P3G2. It will be more focused on governance and broadened out from biobanks to also include new technologies and infrastructure, such as the international Human Cell Atlas."

Also in 2007, Dr. Knoppers founded CARTaGENE, the largest biobank in Quebec, with 43,000 participants representative of the diversity of the province's population. CARTaGENE had a unique approach to recruiting participants, explains Dr. Knoppers: "It randomly selected through the RAMQ [Quebec's administrative healthcare database] individuals between the ages of 40 and 69 who would represent modern heterogeneous Quebec, with its many ethnic communities. Participants are not patients, but citizens who said 'you can have my data, you can have my blood samples and measurements to create a reference population database.' And that's what makes it so useful." Data collected include physical measures, a health questionnaire, genealogy, food frequency and residential and occupational questionnaires, along with blood and urine samples. Followup is done annually using a web-based portal, and all projects have local ethics and CARTaGENE access approvals.

> "My guiding mission is the human right to benefit from science and its advances."

Indeed, researchers can apply to access the CARTaGENE database by submitting a project proposal, which is then evaluated by an independent scientific committee. More than 40 projects are currently underway, including a number in oncology exploring associations between colorectal cancer risk and occupational exposure to endocrine-disrupting chemicals, the impact of genetic variations on the development of breast cancer, and occupational physical activity and lung cancer risk. "They [participants] constitute a well-described population when you're looking for a control group. That can save a lot of time as researchers just have to add on their particular test [e.g. imaging] and they already have 10 years of longitudinal data going back on those participants."

"CARTaGENE is now part of a Canadian effort that combines 5 Canadian cohorts — BC, Alberta, Altantic, Ontario and Quebec — into one accessible national effort called The Canadian Partnership for Tomorrow Project," says Dr. Knoppers. "Each of the provincial biobanks is a stand-alone with its own governance, and then there's a national database where they have shared questionnaires and shared data. CARTaGENE was the first biobank in Canada. And of all the populations in the world, Quebec had the highest collaboration rate of any population biobank in the world."

Find out more: https://www.cartagene.qc.ca/en/researchers/projects-and-publications

KEY CHALLENGES: CONSENT, LEARNING AND INTELLECTUAL PROPERTY

The very progress in creating research infrastructure to benefit from genomics challenges some of the traditional approaches to medical research. The requirement of informed consent needs to be adapted to populational biobanking and longitudinal studies. Among the tools P3G developed were consent tools that

allowed for use of data in future unspecified projects approved by an ethics committee. "This was so different from the usual gene this or drug that or disease this. And it made a lot of ethics committees and legal people uncomfortable, because consent was supposed to be specific and explicit. It took some time, but it has now become the norm for this kind of study, in terms of consent."

> "The next big challenge is getting clinicians to see that the more they share information — between themselves, with researchers and with their patients — the better the healthcare system will be for everyone."

"This broad consent is extending outside of the longitudinal cohorts," says Dr. Knoppers, as is evident in cancer research. "For example, one project about 10 years ago involved a cohort of women with breast cancer, and the researcher later wanted to use their data and samples to see if they had ovarian cancer, which now we know go hand in hand. Ethics committees said no: the consent form only says breast cancer. So the researcher had to go back and get another specific consent from participants. Today, the use of formulations such as x [type of] cancer and related conditions or for further unspecified research is much more common. If the participant agrees to that and thinks there's sufficient governance and oversight, then they can agree to a broad consent."

One challenge that currently preoccupies Dr. Knoppers is how to accelerate the integration of knowledge gained through genomics and research into patient care. The idea is to work toward a "learning health system" where there is a continual feedback loop that enables future patients with the same condition to benefit from what was found before, and where medical care outcomes and "all records and any research project outcomes would serve as quality data to better allocate resources, do more targeted care, more personalized care."

Another key challenge she sees regards intellectual property. "My guiding mission is the human right to benefit from science and its advances," she states. "The current recognition attribution system works against that, as it operates through questions like 'How many patents do you have? How many publications as first author do you have? All of that hinders data sharing." It also disregards the fact that so much research is now accomplished in teams and the crucial contribution of infrastructure science. "All those bioinformaticians are real scientists, as are the epidemiologists working on longitudinal cohorts and it takes them 10 years, that's infrastructure science, it all supports discovery science."

GLOBAL COLLABORATION

The Global Alliance for Genomics and Health (GA4GH), of which Dr. Knoppers is a founding member (2013), aims to accelerate progress in human health by developing a medical information commons. She co-chairs its Regulatory and Ethics Working Group, where she led the writing of the Framework for Responsible Sharing of Genomic and Health-Related Data, a guidance document that has now been translated into 13 languages and underlies all work at GA4GH. The key principle in this work is the human right to benefit from science and data sharing (see report from Dr. Knoppers' talk at the ICPHC in the Landmarks section of this issue). She sees enormous promise in facilitating the collection and sharing of data, broadening out consent, harmonizing clinical trials and privacy codes of conduct, and encouraging the growing citizen desire to participate in this research.

In 2015–2016, Dr. Knoppers was a member of the Drafting Group for the Organisation for Economic Co-operation and Development (OECD) recommendations on Health Data Governance. In Canada, she leads the Can-SHARE program, which includes a cloud-based data library that researchers will be able to use to map new patterns in the human genome and create therapies for genetic diseases. The first step is to harmonize standards in privacy and research consent.

Dr. Knoppers continues to conduct international comparative analysis of laws, policies and guidelines, and to participate in the creation of an international consortium on policymaking. In collaboration with Dr. Larry Lynd in the Faculty of Pharmaceutical Sciences, University of British Columbia, she undertook collaborative translational research with the objective of helping to inform the development of drug coverage decision-making models relating to government funding of drug therapy for rare diseases. Her publications in the past 2 years focus on requirements for building a medical information commons, matching consent to purpose in research, genetic discrimination, Canadian policy on human gene editing, ethics and Big Data, sharing clinical and genomic data on cancer, open-access clinical trial data, and CRISPR germline editing.

ONCOLOGY AT THE FOREFRONT

Dr. Knoppers considers that oncology has generally been at the forefront of advances in medicine — a prototype domain. "The first [specialty dealing with a] common complex condition that had the vision of how to modernize research and medicine was oncology." In accelerating the integration of genomics into improved health and care, she considers that "the next big challenge is getting clinicians to see that the more they share information — between themselves, with researchers and with their patients — the better the healthcare system will be for everyone. It's a win-win from a therapeutic point of view, from a scientific point of view, and from a sustainability of the healthcare system point of view. So if cancer can lead the way, great."

Dr. Fiona Schulte, pediatric psychosocial oncologist

Helping children and their families cope with cancer and survivorship

Dr. Fiona Schulte is dedicating her research, teaching and care efforts to understanding and addressing the psychosocial impact of cancer on children and their families. Her research seeks to enhance the experience of young patients and improve the late psychosocial effects seen in childhood cancer survivors.

Pediatric psychosocial oncology is an emerging field that considers the broader family context of young cancer patients, as well as the lasting impacts of cancer treatment and survivorship. Dr. Schulte is presently an Assistant Professor of Psychosocial Oncology in the Department of Oncology at the Cummings School of Medicine, University of Calgary, and a registered psychologist in the Hematology, Oncology and Transplant Program at the Alberta Children's Hospital, where she provides psychological treatment to patients and their families. Schulte completed a Masters in Clinical Psychology at York University in 2004, and a doctorate in Social and Behavioural Health Science at the University of Toronto in 2009. She began working at the Alberta Children's Hospital as a postdoctoral fellow in 2010.

This year, her work has earned her 2 young investigator awards, from the International Society of Pediatric Oncology and the International Psycho-Oncology Society. She has also been recognized for her importance in "bringing attention to Calgary as a place where important post-cancer research happens." She was included in Avenue Magazine's 2017 Top 40 Under 40, which noted: "Schulte is an internationally recognized expert on the psychological and social effects of surviving childhood cancer, whose work has changed the international guidelines for long-term followup for pediatric cancer patients."

In 2017, she was elected vice-president of the Canadian Association of Psychosocial Oncology. Internationally, she works with the Children's Oncology Group to update followup guidelines, primarily in neurocognition and psycho-oncology, for pediatric cancer survivors, as well as the International Guideline Harmonization Group.

IMPACT EXTENDS TO FAMILY AND FRIENDS

Dr. Schulte recognizes that a cancer diagnosis has profound effects not only on the child or adolescent, but also on parents, siblings and friends. The well-being of all parties becomes interdependent. She has been involved in trialling an intervention focused on how siblings cope when their brother or sister is diagnosed with cancer. She has also studied the effects of parental distress and psychosocial family risk on the quality of life of pediatric cancer survivors.

> "The journey is not over when the treatment ends. In fact, for many this may just be the beginning."

Her work has helped dispel the myth that after cancer treatment, life returns to normal for children and their families. "The journey is not over when the treatment ends," says Schulte. "In fact, for many, this may just be the beginning." The first step to improvement is in recognizing that there is a problem. The main focus of her work to date has been in the investigation of social competence difficulties for survivors who have been treated with therapies directed to the brain. Part of her work has explored testing an intervention focused on improving social skills for survivors of pediatric brain tumour. Her work with survivors of pediatric brain tumour is what led her to play a role in guideline development.

IMPACTFUL RESEARCH

Her active research projects explore a multifactorial, multi-informant examination of social competence in survivors of pediatric brain tumour. Future work hopes to apply this methodology to a population of survivors of pediatric leukemia, as well as children who have been diagnosed with sickle cell disease. She has also launched a new program of research exploring the prevalence, patterns and predictors of pain in survivors of pediatric leukemia, as well as among adolescent and young adult survivors of transplant for the treatment of sickle cell disease. Dr. Schulte is also looking at models to improve followup care for adult survivors of childhood cancers and implement screening for distress in pediatric oncology programs.

Dr. Schulte has been supported in her research by the Alex's Lemonade Stand Foundation, the Megan's Walk Foundation, the Alberta Children's Hospital Foundation, the Alberta Children's Hospital Research Institute and the Arnie Charbonneau Cancer Research Institute. She has published in peer-reviewed journals including Cancer, Pediatric Blood & Cancer, the Journal of Pediatric Psychology, and Psycho-Oncology. At the University of Calgary, she supervises master's and doctoral students in fields ranging from psychology and pediatric psychology to community health science, medicine and nursing.

Schulte's research, teaching and mentoring is helping to assure that the capacities in the system can provide comprehensive followup care for the increasing number of survivors of childhood cancers. "With the number of survivors growing exponentially, we have a responsibility to understand the toxicities of the treatments that are required to achieve cure, to develop evidence-based interventions to improve outcomes, and ultimately, to improve the quality of life of pediatric cancer survivors." She also has a strong commitment to training volunteers, parents and caregivers on psychological aspects of pediatric cancers, by providing educational programs at the University of Calgary.

Dr. Tom Hudson, genome scientist

Driving gene-based discovery into better treatments

In Canada and as a global leader in genome science, Dr. Tom Hudson has brought together multidisciplinary research teams to identify genetic variations, link them with diseases, and translate these discoveries into treatments that improve patient outcomes. In October 2018, *Oncology Exchange* had an opportunity to speak with Dr. Hudson about this trajectory, from discovery right through to the testing and registration of new therapies.

Dr. Tom Hudson has been an important driver of Canadian genomic research in oncology, creating research infrastructure and helping to attract and retain some of the brightest cancer researchers in the country. He is a Fellow of the Royal Society of Canada and was made an Officer of the Order of Canada in 2014. He recently joined AbbVie as Vice President, Head of Oncology Discovery and Early Development.

MAPPING THE HUMAN GENOME

Dr. Hudson trained in medicine at the Université de Montréal and specialized in immunology and internal medicine at McGill University. As a postdoctoral fellow between 1991 and 1996 at the Massachusetts Institute for Technology, he led the team that built the first physical map of the human genome at the Whitehead Institute/Center for Genome Research. "The goal was always to create that first genome map, which would allow us to understand what genes do and relations between genes and diseases," said Dr. Hudson. "It was a 10-year project, and I got involved at the beginning and led a group that mapped the human genome. At the time, we had to bring a lot of new technologies and informatics into biology labs to create the tools to build maps of human genomes and then sequence the genome."

Canada was not very involved in the Human Genome Project, and Dr. Hudson was eager to return to Montreal and start applying the technologies and new ideas from the project. He established and directed the McGill University and Génome Québec Innovation Centre, where he led the Canadian portion of the International Haplotype Map Consortium, a multi-country effort to identify genetic variations that impact health and disease. Here, Dr. Hudson developed and applied robotic systems and DNA chip-based methodologies for genome research, notably to characterize breast and ovarian cancer. He remained a member of the Board of Directors of Génome Québec until 2016.

> "The possibility of conquering cancer has motivated me from the beginning of my career, and it is what keeps me going each day."

FROM DISCOVERY TO THE CLINIC

In 2006, Dr. Hudson was able to move further from gene discovery linked to disease, to even more applied research with his appointment as President and Scientific Director of the Ontario Institute for Cancer Research. This institute had opened in 2005 to focus on translational research in cancer prevention, detection, diagnosis and treatment.

"We were a unique institute in Canada, but even in the world, in trying to bring academic innovation to patients as quickly as possible," Dr. Hudson said. "Many of the scientists in Ontario were pioneers in different fields, like John Dick (Princess Margaret Cancer Centre) in cancer cells, and John Bell (The Ottawa Hospital Cancer Centre) in new immunotherapy approaches. I was fortunate to participate as a scientist in the program, not just as an institute leader."

Here, Dr. Hudson and his team started about 20 companies and were also very involved in clinical trials, including some of the first precision medicine trials in cancer. In 2007, Dr. Hudson was also appointed Professor in the Departments of Molecular Genetics and Medical Biophysics at the University of Toronto.

GLOBAL EFFORTS

Dr. Hudson and fellow Canadian, Dr. Bartha Knoppers, founded the Public Population Project in Genomics (P3G). Dr. Hudson was also instrumental in the 2007 creation of the International Cancer Genome Consortium, which coordinates research projects that contribute to identifying genomic changes in cancer. He led the consortium for the first 8 years, internationally studying more than 84 cancer types.

Dr. Hudson is a member of the Executive Steering Committee of the Global Alliance to Enable the Responsible Sharing of Genomic and Clinical Data, launched in June 2013, and is a coauthor of the white paper produced by the Alliance that details the purpose and benefits of establishing an international framework to allow genetic and clinical data to be collected, managed and shared in an effective, responsible, interpretive manner. In 2016, he assumed the role of Chair of the Steering Committee of the Global Alliance for Genomics and Health (GA4GH), a global community of researchers and organizations working together to create interoperable tools and approaches to enable genomic and clinical data sharing (see: www.genomicsandhealth.org).

> "My main focus is to better understand cancer biology and to bring together different specialties that contribute to that understanding."

DRUG DEVELOPMENT

Dr. Hudson is now Vice President, Head of Oncology Discovery and Early Development at AbbVie. The company is known for bringing to patients immunology and virology treatments, with an increasing focus on oncology. AbbVie has made oncology a key growth driver for the company, with significant investments over the past several years.

"There have been a lot of developments in genomics and immunology to find new therapies," said Hudson. "Our program right now within AbbVie is capitalizing on all these technologies, but also bringing what I lacked before, which were the skills of a pharma company in developing the drug, conducting the safety trials and things that we don't generally do in academic labs." AbbVie went from having no drugs in oncology 3 years ago to having 3 now approved, and 15 new drugs in human clinical trials. "I've participated in not just bringing the groups together but accelerating the ability to bring some of these new ideas to clinical trials," said Dr. Hudson.

APPROVAL, TESTING AND ACCESS: A NEW ENVIRONMENT EMERGING

"The regulatory environment has improved the path to accelerate the approval of drugs which are showing benefit. We know there's an expectation for better drugs, safer drugs, longer response time, and we've designed our early clinical studies to be able to answer that quickly," he says. "Small studies showing big benefits for patients in terms of response rates and survival times provide a path

to larger registration studies. And larger trials include patients from many different countries to ensure that we're registered with regulatory agencies, another step that helps accelerate access."

Regulators and pharma also hold pre-meetings to discuss patient selection and companion diagnostics, leading to dialogue and a more supportive environment. Dr. Hudson believes the discovery of good drugs for some types of cancer has helped to improve the regulatory environment. "What's a little more complicated is figuring out how to identify patients who respond best to a drug. The advantage for the payer and patient is that we're trying to bring these drugs only to those patients who will respond. It requires an extra test. I was involved in Ontario in making guidelines for some of the new tests, but provincial Ministries have only recently started to act to evaluate tests and make sure labs are able to meet the standards the tests require."

He thinks the whole world, not just Canada, is still trying to adapt to do this well. "It's a major change for how medicine and labs and healthcare generally functions. It's a process that requires learning among all players," he says.

COLLABORATION IN INDUSTRY

Tests are a major challenge at the moment and require new approaches from regulators and companies. "With different labs producing different tests, we don't exactly know whether our drug is acting better than another, because we're not doing the same tests," said Dr. Hudson. "This has been recognized as a problem by many groups, including patients, doctors, regulatory agencies and companies."

That recognition prompted the creation of the Partnership for Accelerating Cancer Therapies, part of the Cancer Moonshot program, involving 12 or 13 pharma companies and the National Institutes of Health, the National Cancer Institute, the U.S. Food and Drug Administration, and others in the U.S. "We put resources together and built teams to create standardized tests in immuno-oncology," said Dr. Hudson. "Everyone sees that we have to start working together on developing common tests and standards, and using those tests in our clinical studies so we can see true benefit. It's a challenge we can all tackle together."

IMPLICATIONS FOR ONCOLOGISTS

Dr. Hudson considers the clinical oncology community to be more aware of the importance of these new tests and new drugs than other medical communities and attributes that to the introduction of trastuzumab to target HER2-positive breast cancer, and later, to KRAS mutation testing in colon cancer. He underlines the importance of physician education, welcoming the fact that Canadian cancer conferences are "trying to get not just discovery scientists, but also the clinical oncologists there in the same room. The programs in medical school are getting much more sophisticated in getting future physicians up to speed with what's coming, but there needs to be continuous education."

Dr. Jean Maroun, medical oncologist and cancer treatment researcher

Combining discovery, clinical care and continuing medical education

Dr. Jean Maroun, MD, FRCPC, FRCP (London), has been editor-in-chief of *Oncology Exchange* since 2001. His contribution to continuing medical education in oncology through the journal and through the Canadian Oncology Societies spans the advent of online forums and has disseminated best practices and research findings to oncology professionals across Canada. His promotion of a multidisciplinary team approach to cancer care, his mentoring of the next generation of clinicians, and his research into the treatment of gastrointestinal (GI) cancers have contributed to strengthening capacity, raising the standard of care, and improving patient outcomes far beyond his home institution.

MEDICAL ONCOLOGY

Dr. Maroun was The Ottawa Hospital's first medical oncologist. A native of Cairo, Egypt, he had graduated from St. Joseph's University in Beirut, Lebanon, and completed his training in Internal Medicine at the Derbyshire Royal Infirmary, Derby, UK. Arriving in Canada, Dr. Maroun specialized in Medical Oncology at the University of Ottawa and in the Department of Developmental Therapeutics at the M.D. Anderson Cancer Center, Houston, Texas. In 1995, he was named Professor of Medicine at the University of Ottawa. He would serve as Chair of the university's Department of Oncology and Head of Medical Oncology at the Ottawa Regional Cancer Centre and The Ottawa Hospital.

More recently, Dr. Maroun was also a member of the St. Laurent Medical Centre Cancer Assessment Team in Ottawa, where family physicians and medical and radiation oncologists collaborate to provide diagnosis of suspected cancers, followup of previously diagnosed cancers and postdischarge support.

Following his retirement from The Ottawa Hospital in 2014, after 36 years of practice, the Jean Maroun Resident Research Scholarship was created, recognizing Dr. Maroun as The Ottawa Hospital's first medical oncologist and honouring his dedication to optimal patient care. The award is presented annually to a resident whose research results have the potential to change medical oncology practice.

CLINICAL RESEARCH AND GUIDELINE DEVELOPMENT

Dr. Maroun was a leader in the management of gastrointestinal (GI) malignancies and was involved in clinical research into drug development and drug combinations in the treatment of colorectal cancer. His clinical and basic research focus was on thymidylate synthase inhibitors and predictors for targeted therapy. Looking back, he says: "The most exciting advances over my career in GI cancer were the development of new effective drugs and their combinations that have led to better control and cure."

Dr. Maroun was lead investigator in numerous clinical trials, published extensively in peer-reviewed journals and was involved provincially and nationally in numerous academic, research and clinical care committees, notably the annual Eastern Canadian Colorectal Cancer Consensus Conference. He is the former Chair of the Ontario Provincial Gastro-Intestinal Practice Guidelines Committee.

KNOWLEDGE DISSEMINATION

The Canadian Oncology Societies (COS) was founded in 1976 to assemble the various specialty societies involved in oncology practice (see more on its history below). As Chair of the COS for almost two decades, Dr. Maroun contributed to the development and cohesion of COS member societies and promoted the establishment of the Canadian Association of General Practitioners in Oncology (CAGPO). He also held the position of Chairman of the Canadian Association of Medical Oncologists, and cross-pollinated the efforts of the two groups, notably with the institution of the annual Cosbie Lectures, held in cooperation with the Canadian Cancer Trials Group and Cancer Care Ontario. "We have made real progress over the past few decades," Dr. Maroun considers, "in promoting multidisciplinary approaches to the management of cancer." Under his guidance, for almost two decades, COS pioneered online, bilingual, multidisciplinary oncology education in Canada, disseminating dozens of training programmes featuring leading Canadian and international oncology professionals.

> "The most exciting advances over my career in GI cancer were the development of new effective drugs and their combinations that have led to better control and cure."

As editor-in-chief of *Oncology Exchange*, Dr. Maroun guided the evolution of this unique peer-to-peer journal, assuring its mission to disseminate research and novel practices, discuss challenging topics, and provide a forum for exchange and learning among professions contributing to cancer care. Reports from major conferences always include commentary on the implications of study findings for practitioners in Canada. As well, a priority for Dr. Maroun was to ensure that students, residents and fellows in oncology, as well as in oncology nursing and psychosocial oncology, are engaged in publishing research and providing meeting coverage. The combined efforts of Dr. Maroun and Psychosocial Oncology Editor Dr. Barry Bultz have succeeded in broadening the scope of oncology coverage to highlight the value all professionals bring to patient care. "Educational forums like the EC3 consensus conferences, COS webinars and *Oncology Exchange* have facilitated the spread of advances in cancer care beyond teaching centres to smaller and remote centres across Canada," concludes Dr. Maroun, "and brought oncologists and other providers together to learn from each other."

ABOUT THE CANADIAN ONCOLOGY SOCIETIES

The COS was founded through the efforts of Dr. Carl Reise, a surgical oncologist from Winnipeg who, in 1974, took the initiative to the Canadian Cancer Society. It received the support of the Royal College and the National Cancer Institute of Canada in 1975, and an agreement was reached to form the COS. The first annual meeting was held on January 26, 1977, in Toronto, with 66 founding members in attendance. Dr. Reise was the founding President and Dr. Anthony Miller of Toronto, the first Secretary-Treasurer.

Over its 42-year history, the mandate of the COS evolved, particularly with regard to the development of several emerging oncological specialty associations, such as the Canadian Association of Medical Oncologists and the Canadian Society of Surgical Oncologists. With the various discipline-related mandates of the oncologic subspecialities, the COS became a federation of oncologic societies with a common voice in Oncology. Chairmanship of COS was always accorded to a leading Canadian oncology professional. Dr. Anthony Fields and Janice Stewart, RN, preceded Dr. Maroun in this role.

Membership eventually included the Canadian Association of Medical Oncologists

(CAMO), the Canadian Hematology Society (CHS), the Canadian Society of Surgical Oncology (CSSO), the Society of Gynecologic Oncologists of Canada (GOC), the Canadian Association of Nursing in Oncology (CANO) and the Canadian Uro-Oncology Group (CUOG). In 2002, under the leadership of Dr. Jean Maroun and supported by Charles Pitts, COS was instrumental in the creation of the Canadian Association of General Practitioners in Oncology (CAGPO).

> “We have made real progress over the past few decades in promoting multidisciplinary approaches to the management of cancer.”

Through COS, Dr. Maroun led the development of some of Canada’s first online, bilingual, interactive oncology seminars. Funded by unrestricted, arm’s-length support from major pharmaceutical companies, the seminars covered most tumour sites, as well as topics such as patient depression and cancer prevention. Often developed in cooperation with the leaders of the Canadian Association of Medical Oncology, the educational forum featured leading Canadian and international figures in cancer research and treatment, and Health Canada representatives. The society also introduced member societies to the benefits of a web presence and to webcasting, with Chuck Pitts playing a vital role in organizing webinars that have expanded COS’s important role in education and knowledge dissemination.

CONTRIBUTORS TO COS WEBINARS

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