



research
for the health of every woman



> Introducing the Women's
College Research Institute

At the Women's College Research Institute, we have a vision: **to lead the world in women's health research**. It is an ambitious goal, to be sure. But it is well within our reach. We are one of a few research institutes worldwide – and the only one at a Canadian hospital – devoted to women's health. We are home to a group of international research leaders studying breast cancer, musculoskeletal health, older women's health and the impact of violence on women's lives. Our faculty is extraordinarily productive – and growing fast in size and scope. In the past year alone we have added seven new scientists, as well as a new research chair focused on breast cancer surgery. We've doubled our number of post-doctoral trainees.

Our progress is not surprising. For nearly 100 years, Women's College Hospital has been a place of breakthrough innovation. Thanks to our research, women at risk of genetic breast and ovarian cancers have effective prevention and treatment options. The warning signs of osteoporosis can be detected far earlier. Rates of cervical cancer have decreased by 50 per cent since the development of the Pap smear, a Women's College innovation. And we have demonstrated links between diabetes and breast cancer.

Today, our agenda is no less daunting. Our scientists are expanding and exporting knowledge about health conditions that have unique implications for women throughout their lives – like arthritis, depression, diabetes and heart disease. They are investigating the complexities of these conditions – because rarely does one woman experience only one condition or take only one medication. They are exploring the social, political and economic forces that influence women's health and their access to health care. And they are looking to reinvent health care for women and their families.

Nothing is more crucial. There is a growing gap between the care traditional hospitals can provide and the care women need. That means we need strategies to sustain our health-care system. As part of Women's College Hospital, Canada's first academic ambulatory centre focused on women's health, we are working to imagine and implement new approaches to care that reduce in-patient hospitalization and foster prevention and disease management. Simply, we're looking to help women and their families live healthier, more independent lives.

That means we need real-life solutions to real-life problems. So we're making Women's College a living laboratory, testing programs that reach outside hospital walls, and creating the evidence to implement our innovations in communities across Canada.

Cancer. Diabetes. Heart disease. Depression. Osteoporosis. HIV. These are just some of the conditions that are affecting women throughout their lives, often in combinations and often very differently from the way they affect men. These are also conditions that can be managed – and even prevented – without overnight hospitalization and with new approaches to care.

Women's College Hospital is delivering that care in unprecedented ways. Here at the Women's College Research Institute, we're helping make that possible.



> the research agenda:
strategic priorities

The Women's College Research Institute has been charged with a new mandate: to maintain our abiding focus on women's unique health needs, while moving care outside the hospital and into our communities. To that end, we have set out four broad research priorities:

Understand women's unique health needs at every stage of their lives. When it comes to their health, women and men are not the same. What's more, women's health needs change throughout their lives. At our research institute, we investigate conditions that affect women disproportionately or differently. We design tools and resources to make that knowledge accessible to women and their health-care providers. And we are responding to demographic shifts in the population with a revitalized focus on the challenges of aging.

Explore the complex health needs of women in the context of their lives. Improving women's health means dealing with complexity. It requires an understanding of how conditions and medications interact. It requires an exploration of the long-term consequences of these conditions. It requires programs that consider the social context of women's lives – culture, income, identity and family responsibilities – not just the medical consequences of illness. Our scientists conduct cross-disciplinary research to devise real-world responses to complex challenges.

Reinvent systems of health care using ambulatory models. What is ambulatory care and how can it transform our health system? How can we link health resources, better support front-line care providers, and address inequities in health-care delivery? Our scientists are working to reinvent our health-care system by developing and implementing innovative care programs that will be both sustainable and responsive to the needs of women and their families.

Build a research institute that supports and celebrates the world's best women's health leaders. We are already home to outstanding women's health research leaders who are changing the face of women's health research. As importantly, they are also attracting, training and nurturing the next generation of exemplary researchers and trainees. After all, the future of women's health will be built on today's best young minds. And at the Women's College Research Institute, we see our young scientists as the future of care.



> priority 1: understand

research priority 1: Understand women's unique health needs at **every stage** of their lives.

There remains a large gap between what we know about men's and women's health. Our scientists are closing that gap with research that is making headlines and changing practice across Canada and around the world.

Every day, we're learning more. More about why conditions – like depression or multiple sclerosis – affect women more frequently than men. More about how conditions – like arthritis or heart disease – affect women differently than men. More about how those conditions impact women at all the stages of their lives, and how the supports women need change across their life spans.

Now we are taking that knowledge and translating it into tools that women and their health-care providers can use to guide everyday decision making. In a world of information overload, our scientists are making the latest research useful and understandable for the people who need it most.

Needless to say, women's reproductive health remains a priority for our scientists. For example, we continue to study ways of making pregnancy safer for women – by reducing the risk of deep vein thrombosis, by managing diabetes, and by diminishing the frequency and severity of depression during and after pregnancy.

But we are also deeply focused on the conditions that affect women throughout their lives. Diabetes in young women, in mid-life, and in later years. Arthritis in young women and in old. Breast and ovarian cancers that strike before and after menopause. Mental health challenges associated with the reproductive stages of a woman's life, and with the stresses imposed by work, family and conflicting life roles. And equally critical is our research on the implications of menopause and the important health transition it represents in women's lives.

Women over 65 years of age are the fastest growing segment of the Canadian population. With age comes an increasing susceptibility to multiple, chronic conditions, so we are stepping up our emphasis on the health and well-being of mid-life and older women. What supports and resources are needed during menopause to help women maintain optimal health? What are the effects of leisure activity on bone and muscle health? How can arthritis pain be better understood and treated? How can older adults manage multiple medications more safely? Our scientists are committed to finding out.

No matter the stage of a woman's life, our work is always governed by an abiding commitment to equity. We work to create evidence that will make health care more responsive, accessible and effective.

Transforming women's health practices around the world

Reducing Breast Cancer Risk

Senior scientist Dr. Steven Narod has revolutionized how health professionals around the world understand genetic breast and ovarian cancer and the possibilities for its treatment and prevention. Fifteen years ago, he was part of the team that discovered BRCA1 and BRCA2, the mutations now recognized as the most common causes of inherited breast cancer. Since then, he has worked with international partners to amass detailed records on 10,000 at-risk women. His systematic analysis of these data has resulted in more than a dozen evidence-based approaches that reduce cancer risk. He has created a body of published work about inheritance of cancer that is unparalleled; over 25,000 other authors have used and referenced his studies in creating their own work. Now he is collaborating with his global partners to focus on a new challenge – the continuing epidemic of breast cancer in the developing world, where most women develop the disease before age 40.

A New Option for Osteoporosis Prevention

One in three women over the age of 50 will break a bone because of osteoporosis. With the aging population, osteoporosis is a growing problem (in fact, there has been a 25 per cent increase in hip fractures around the world over the past 10 years). Diet and exercise can reduce the risk, but affordable prevention drugs are also urgently needed. Dr. Sophie Jamal is conducting trials with postmenopausal women to determine whether nitrates – used for many years to treat heart disease – can enhance bone health and density. Nitrates have few side-effects – in fact, scientists noticed that women taking these heart medications often have better measures of bone health, including bone density. Dr. Jamal is now leading a trial to confirm their usefulness. If successful, nitrates will be a less costly form of osteoporosis prevention than any drug now available.

Supporting Healthy Pregnancies for HIV-positive Families

In Canada, women represent over 20 per cent of people living with HIV. Thankfully, new treatments mean that these women can look forward to near-normal life spans in reasonably good health. They can build careers, enjoy relationships and raise families. In fact, a recent study conducted by our own Dr. Mona Loutfy showed that 57 per cent of HIV-positive women in Ontario intend to get pregnant. Unfortunately, our health-care system hasn't kept pace. So Dr. Loutfy has brought together a group of experts from across Canada – obstetricians, fertility and HIV specialists, social workers and women with HIV – to develop the first national guidelines to help doctors counsel HIV-positive women (and those with HIV-positive partners) on how to protect their lives, partners and families, while getting pregnant. The guidelines are rolling out this year – and will be an important model for other countries facing the global challenge of HIV.

NOW – Supporting Patient Decisions in Arthritis Care

Arthritis is the leading cause of disability for women in many countries – including Canada. Now one of our senior scientists, Dr. Gillian Hawker, has developed a tool to help people with arthritis improve their treatment. For more than two years, Dr. Hawker has worked with experts from the University of Ottawa to design and test the world's first decision aid around hip and knee osteoarthritis. This tool helps people work with their doctor to prepare for next steps in their treatment, and is now being tested in partnership with the Canadian Arthritis Patients Alliance.

An action plan

> What We Need

- internationally relevant knowledge in key areas of women's health
- an increased focus on the challenges facing mid-life and older women
- research-to-practice tools to aid the dissemination of knowledge

> What We're Studying

- new preventive approaches for women with strong family histories of breast cancer
- improved reconstructive surgery for breast cancer and reduced painful side-effects (e.g. lymphedema)
- how women respond differently than men to antiviral medications for HIV-AIDS (with a particular focus on side-effects)
- cellular and molecular basis of multiple sclerosis and sex differences
- new treatments and supports for women with depression or anxiety during the perinatal period
- improved access to a range of contraceptive care
- improved heart health interventions for women through understanding gender differences in blood pressure and cardiovascular health
- novel preventive approaches to osteoporosis
- effects of lifetime leisure activity on bone and muscle health
- causes of arthritis pain as well as improved measures of pain
- safer medication use in older women

> What We're Creating

- scientific papers shaping the global dialogue about women's unique health needs
- information and training for health-care providers to counsel women affected by HIV who wish to become pregnant
- decision tool for care providers regarding antidepressant use in pregnancy
- training for emergency health-care providers to support disclosure and decision-making for women experiencing intimate partner violence
- training on domestic violence for front-line mental health and addictions workers
- decision tool to improve patient-physician communication about arthritis treatment
- protocols to guide sexual assault care when drugging is suspected
- tool kit to assist health-care planners to more effectively measure the impact of musculoskeletal conditions and develop appropriate services for their communities
- decision tool for women whose genetic makeup puts them at risk of breast and ovarian cancer
- screening tool for dangerous blood clots in pregnancy



> priority 2: explore

research priority 2: Explore the complex

health needs of women in the context of their lives

Women are more likely than men to live with multiple chronic conditions and to be disabled by them. They also use more medications simultaneously.

Too often, research and treatment approaches focus on one condition to the exclusion of others. At the Women's College Research Institute, we recognize that supporting women's needs requires complex programs of care that consider how multiple conditions and treatment protocols might interact. So our scientists are exploring how different conditions are linked. They're investigating the connection between diabetes and breast cancer. They've shown that even modest impairments in kidney function can reduce bone density. And they've recently demonstrated that infertility treatments may increase stroke risk.

One of our ultimate goals is to develop programs that not only help maintain good health, but also support recovery. These kinds of interventions – known as survivorship programs – support people dealing with the late and ongoing effects of cancer and chronic conditions. The concept of survivorship programs is particularly well-articulated in the breast cancer community, where a growing survivor community is demanding both knowledge and services to help them deal with the long-term impact of cancer and its treatments. While an ambulatory care facility is an ideal environment for these programs, we need to better understand the needs of women who would use them. Our scientists and clinicians are working together to develop both the program and the knowledge that underpins it.

Whatever the type of care women need, it must always take place within the context of their lives. Poverty, violence and discrimination affect both women's health and their access to care. So do competing family responsibilities. Our scientists integrate studies of these factors into research, education and program development. Much of our capacity to work within the lens of the broader determinants of health is owing to the fact that we are one of just a few hospital-based research institutes with substantial input from social scientists. We remain committed to community-based research because it is a vital window into the complexity of women's lives.

Transforming women's lives

Managing Multiple Conditions

Twenty per cent of older women regularly take more than 10 medications. While individual drugs are rigorously tested before approval, combinations of drugs may not be. Women's College Research Institute is home to one of Canada's largest health services research teams that is exploring how medications interact in real-world circumstances. The team is led by our vice-president research Dr. Paula Rochon and adjunct scientist Dr. Geoffrey Anderson. It focuses on medication use by older adults living in the community and deals specifically with interactions between drugs used to treat chronic conditions – such as heart disease, diabetes, dementia and kidney disease. The team has found, for instance, that drugs used to manage older adults with dementia can increase the risk of Parkinson's and worsen other chronic conditions like diabetes.

Preventing Diabetes

Research by Dr. Lorraine Lipscombe has shown that rates of Type 2 diabetes are soaring drastically, with the biggest rise occurring in younger women. What's more, up to half of women with gestational diabetes will develop Type 2 diabetes within 10 years of pregnancy. So Dr. Lipscombe is exploring how best to develop a prevention and health-promotion program that recognizes the needs of new mothers. A particular focus is women who have lower incomes and who lack social support. That's because Dr. Lipscombe recently released research showing that poverty has a marked effect on the success of ongoing diabetes care. She found that, since 1995, there has been a widening gap in mortality between the poorest and wealthiest groups of adult Ontarians with diabetes aged 30 to 64, a group not eligible for the comprehensive drug and diabetes monitoring provided for seniors.

Linking Kidney Disease and Bone Health

People living with chronic kidney disease are at tremendous risk for bone fracture. In fact, just over half of people on dialysis will have one. Scientist Dr. Sophie Jamal is exploring the links between osteoporosis and kidney disease, and has helped develop treatment strategies to protect bone health for those with severe kidney disease. In a recent paper published in one of the field's most influential journals (*American Journal of Kidney Diseases*), Dr. Jamal demonstrated that even people with mild kidney impairments are at substantial risk of bone loss.

NOW – Improving our Responses to Women's Needs

Health professionals are often the first point of contact for abused women. But to be effective, health-care workers need to know what to do, what to say and how to help. So scientist Dr. Robin Mason created a web-based training curriculum for health professionals across Ontario. Modelled on video games, users can practice their responses and see how women are most likely to respond. The program is customized for emergency health teams, family doctors, obstetricians and gynecologists. Participants receive credits from their professional organizations.

An action plan

> What We Need

- a better understanding of how health conditions and treatments interact
- improved responses to the long-term consequences of living with illness
- research that considers the social context of women's health care

> What We're Studying

- links between pregnancy complications and the long-term risk of cardiovascular disease
- connections between depression and women's access to cancer screening
- links between diabetes and breast cancer
- increased cancer risk facing immunosuppressed organ transplant patients
- effects of drug therapies on older women with multiple chronic conditions
- risks of obesity and abnormal fat storage and associated cardiac risks in women living with HIV
- efficacy of self-management programs for chronic conditions in improving long-term health outcomes
- social and economic barriers to diabetes prevention and management
- social and psychological factors that shape women's choices around the use of antidepressants during and after pregnancy
- influence of determinants of health on access to arthritis treatment
- culturally specific risk factors of chronic conditions (diabetes, osteoporosis) for immigrant women
- role of stressful life factors on women's heart health
- impact of past experiences of trauma that may affect women during the prenatal, delivery and postnatal period (focus on aboriginal women, refugee women and survivors of childhood abuse)

> What We're Creating

- publications in high-impact journals that share our understanding of women's complex health needs with scientists and health-care providers
- new research program focusing on cancer survivorship and the long-term outcomes of cancer treatment
- intervention programs for young mothers with gestational diabetes
- web-based support groups addressing the mental health needs of women living with chronic conditions like diabetes, HIV and gynecological cancer
- bone protection strategies for people with kidney disease
- new approaches to diabetes education that address the mental health needs of women with Type 2 diabetes
- screening tool for dangerous blood clots in pregnancy



> priority 3: reinvent

research priority 3: Reinvent systems of care through innovative ambulatory care models

There is a new health reality out there and our current health-care system is straining to meet growing needs. It's time for a new approach to care.

The fact is, chronic conditions are increasing at unprecedented rates. Almost 80 per cent of Ontarians over age 45 have at least one chronic condition. And while the aging population is definitely having an impact, chronic conditions are not restricted to older adults. Arthritis, cancer, asthma, depression, migraine and diabetes are affecting younger people at increasing rates.

What's more, women are far more likely to have chronic conditions and more likely to have multiple conditions than men. That's often because they're living longer. And older women are almost twice as likely as men to live alone, sometimes struggling to maintain their independence in the face of chronic conditions.

Yet our health-care system is still designed to deal with acute problems. Problems that are short, urgent and potentially curable.

No doubt traditional hospital care is still needed. But it is clearly not the best way to address many of the challenges associated with an aging population in a sustainable way. That's why Women's College Hospital's new mandate is so essential, and so timely.

As Canada's only academic ambulatory centre dedicated to women's health, Women's College helps women live healthier and more independently with the conditions that affect them throughout their lives. It is a potentially cost-effective approach that enables people to prevent disease and manage their conditions while living in the community, rather than segregated in controlled hospital environments.

The benefits of ambulatory care cannot be underestimated. Ambulatory care reaches into our communities and focuses on prevention, healthy living and survivorship – as much as it does on medical and surgical interventions. It adapts to the needs of marginalized communities and those who don't have equal access to care. It integrates the breadth of health resources currently available – hospitals, community agencies, family health-care centres, home care providers and long-term care facilities. It is accessible and interactive. It responds to how women lead their lives and recognizes that, when it comes to their health, men and women are not the same.

Our scientists are developing evidence-based research that pinpoints the qualities of successful ambulatory programs so that they can be implemented in other centres, and so that there are new measures of ambulatory care performance. They are also working closely with their clinical colleagues to generate ideas that focus on improvements to programs and service delivery. Most importantly, they are working to reinvent our health-care system so that it responds to people's real needs and realities.

Transforming the health-care system

Designing New Models of Care – The Virtual Ward

Twenty percent of patients released from hospital are readmitted within three months. They are not ill enough to justify the costs of in-patient care, but not well enough to manage at home in the current system. This stressful and expensive cycle of readmission affects older women most – both directly and as caregivers to ill spouses. That is one reason why Women’s College Hospital has partnered with the Toronto Central Community Care Access Centre and Toronto in-patient hospitals to test a new approach. Our Clinical Decisions Unit, led by Dr. Wee Shian Chan, is now home to a virtual ward. At-risk patients just released from in-patient hospitals are admitted “virtually” at Women’s College Hospital. The virtual ward team, including medical, nursing, pharmacy and social work expertise, meets daily to monitor and guide patient care, to prompt appropriate treatment changes and to co-ordinate follow up with community providers and the patient’s family doctor. The first of its kind, this program is designed to aid transitions back to the community and to prevent unnecessary hospitalizations. Dr. Irfan Dhalla and executive director Dr. Andreas Laupacis from the Li Ka Shing Knowledge Institute are collaborating with our vice-president research Dr. Paula Rochon and physician-in-chief Gillian Hawker to evaluate this novel ambulatory care approach and develop evidence to facilitate its implementation and use in other centres.

Improving Referrals to Arthritis Care

Arthritis care takes place almost entirely in the community. People are cared for by their family doctors and then referred to a specialist for further treatment. That is often where the bottlenecks begin. Thousands of such referrals are made in Canada each year, but there is no way for the system to sort through and prioritize the most urgent cases. Dr. Gillian Hawker has been working with Dr. Tom Noseworthy of the Western Canada wait-time group to create a tool for rheumatology referrals. This standardized summary contains eight criteria questions to be answered by the family doctor. The questions produce a Priority Referral Score for each patient. This score quickly identifies the most urgent cases and provides a standardized summary of each patient for the specialist to use at the first visit. This simple but elegant solution is being tested at Women’s College this year and could eventually reshape this system of ambulatory care across the country.

Providing Expert Osteoporosis Care – Remotely

Fifteen years ago, Women’s College Hospital established Canada’s first Multidisciplinary Osteoporosis Program, a groundbreaking initiative for women with osteoporosis or at high risk of it. One-stop care is provided by interprofessional teams – physicians, occupational therapists, physical therapists, dietitians, pharmacists and clinical nurse specialists – based on individual needs. But what about those patients who can’t come to us? Adjunct scientist Dr. Susan Jaglal evaluated the use of Telehealth video conferencing as a means of extending the program to patients outside Toronto. In the study, patients in Timmins and Orillia had consultations with team members via Telehealth following referrals by their local doctor. The study showed that the program benefits patients and that the consultations can be modified for Telehealth delivery. Now funded by the Ministry of Health and Long-Term Care, Telehealth is offering specialist care in more than a dozen community hospitals across central and northern Ontario.

NOW – Evaluating Ambulatory Care Programs

For more than 10 years, the Women Recovering from Abuse Program (WRAP) has been offering intensive group therapy to women with histories of childhood trauma. It is now undergoing rigorous evaluation. Dr. Catherine Classen is working with Dr. Robert Muller of York University as well as program clinicians to assess the program’s outcomes and to identify what kind of women might benefit most from it. With this information, Dr. Classen is spearheading the development of a treatment manual to help clinicians elsewhere establish programs modelled on WRAP.

An action plan

> What We Need

- research that develops and evaluates potential models of ambulatory care for further dissemination
- improved public reporting of health-care quality and measures of ambulatory care quality
- evidence to support more integrated and equitable care delivery

> What We're Studying

- new intermediate form of care – the virtual ward – in partnership with acute-care hospitals and home-care providers
- efficacy of the Women Recovering from Abuse Program
- client satisfaction with sexual assault and domestic violence services
- application of single-step surgical approaches to breast reconstruction surgery to improve outcomes and shorten recovery time
- appropriate measures of health-care quality in partnership with provincial agencies
- patterns of emergency department use to understand unmet community health needs, particularly among vulnerable older adults
- inequities in access to fertility services for HIV-positive families

> What We're Creating

- peer-reviewed papers that will allow others to assess and implement our models
- evidence-based guidelines for bone mineral density testing of mid-life women in Ontario's Osteoporosis Strategy
- national pregnancy planning guidelines for HIV-positive women and their families
- strategies for improved delivery of contraceptive care in primary care settings
- systemic cost-benefit analysis for more equitable and accessible provision of total joint replacement surgeries
- contributions to the POWER Study (Project for an Ontario Women's Health Evidence-Based Report), a comprehensive provincial report on women's health to guide policy change
- integrated sexual health and cancer screening services to better serve marginalized women



Senior Distinguished Mentor Dr. Gillian Hawker with some of the outstanding scientists and trainees she has mentored. From left to right: Dr. Lorraine Lipscombe, scientist; Dr. Esther Waugh, PhD in Clinical Epidemiology, 2009; Dr. Hawker; Dr. Jacqueline Hochman, scientist; Dr. Mona Loutfy, scientist; Dr. Taryn Becker, scientist-in-training.

> priority 4: build

research priority 4: **build** a research institute that **supports** and **celebrates** the world's best women's health **leaders**

Scientists choose the Women's College Research Institute because they have the opportunity to transform the health and reshape the health care of every woman.

Many have. A great number of our scientists have been recognized by their peers in the scientific community for their groundbreaking work. Dr. Steven Narod holds a Tier 1 Canada Research Chair which acknowledges him as a world leader in his field. Dr. Gillian Hawker is a recipient of the Arthritis Society's Distinguished Senior Research Investigator award for her contributions to arthritis study and her mentorship of others. Dr. Mona Loutfy holds an Ontario Ministry of Research and Innovation Early Researcher Award for promising work on the side-effects of antiviral medications experienced by women living with HIV. Dr. Lorraine Lipscombe holds a Clinician Scientist Award from the Canadian Diabetes Association. In fact, over 90 per cent of our full-time faculty have held a peer-reviewed salary support award such as those awarded by the Canadian Institutes of Health Research.

We are proud to be adding to our senior faculty, with support of visionary allies from our community.

In March 2010, Dr. John Semple was awarded the Canadian Breast Cancer Foundation – Ontario Region Chair in Surgical Breast Cancer Research. Today most women survive a breast cancer diagnosis but their quality of life after treatment often depends on what happens during treatment. That is why the Canadian Breast Cancer Foundation – Ontario Region chose to establish a new kind of research chair at Women's College – one focused on improving the techniques used in breast cancer surgery. Women's College Hospital has always been home to surgical innovation, and after an international search, the best candidate was found right here in our own chief of surgery. The chair will allow Dr. Semple to dedicate more time to research and help him build a research team at Women's College focused on these important issues.

Another international search is underway for an outstanding scientist and advocate in women's mental health. The Shirley Brown Chair in Women's Mental Health Research was created by a dynamic community-based campaign. The future chair will be a leader in our research community fostering collaborations with scientists at the Women's College Research Institute, the Centre for Addiction and Mental Health and the University of Toronto.

While each of our scientists is changing the face of women's health research, they are also doing so much more than that. Our faculty are also attracting, training and nurturing the next generation of exemplary researchers and trainees. Since January 2009, eight remarkable new individuals have joined our faculty – including the award-winning young scientists described on the next page. We're proud that two-thirds of our core faculty are scientists in the first 10 years of their careers. And we continue to create more young scientists by fostering student opportunities – from our undergraduate summer student program, to our support of the Collaborative Graduate Program in Women's Health at the University of Toronto, to the supervision of master's and doctoral students by our scientists.

There is no doubt. The future of women's health will be built on today's best young minds. And at the Women's College Research Institute, we see our young scientists as the future of knowledge.

Transforming the future of women's health research

When it comes to women's health, things are changing. In the past year alone, a comprehensive report from the World Health Organization named women's health as an urgent priority. Women's health became a focus of Canada's policy debate. And Ontario has launched a new provincial health agency dedicated to women's health.

At Women's College Hospital, we're responding to women's health needs by recruiting dynamic young scientists who are in the process of building exceptional research careers. Here are just a few:

Dr. An-Wen Chan is a Rhodes Scholar and dermatologist trained in Mohs surgery at the Mayo Clinic. His work has changed how clinical trials are reported across the globe. He has served as a scientist with the World Health Organization and as an advisor to the Canadian Institutes of Health Research. Here at the Women's College Research Institute Dr. Chan is exploring ways to better design, conduct and report clinical trials. He chairs the international SPIRIT Initiative (Standard Protocol Items for Randomized Trials) to establish evidence-based guidance for the content of trial protocols.

Dr. Andrea Gruneir completed her PhD in epidemiology at Brown University. Her rigorous evaluations of health-care outcomes for long-term care residents taken to emergency rooms are targeting a major inefficiency in our health-care system – one that leads to considerable stress and trauma for vulnerable older women. Her work has already caught the attention of Ontario's Ministry of Health and Long-Term Care which recently awarded her a five-year career scientist award. Her expertise in research methods is integral to the best in health services research.

Dr. Jacqueline Hochman, a physician with a master's in clinical epidemiology, recently completed her tenure as a women's health fellow at the department of medicine at Women's College Hospital. Her work on arthritis pain has been deemed so promising by the Canadian Rheumatology Association that she was recently accepted into the exclusive Future Leaders in Rheumatology Program – an initiative designed to help young leaders in arthritis research, education and advocacy build relationships with national and international experts.

Dr. Joanne Kotsopoulos completed her PhD in nutrition sciences with the guidance of Dr. Steven Narod. As a graduate student, she was first author on more than a dozen research papers, a publication record that led to a post-doctoral posting at Harvard Medical School. Awarded the Cancer Care Ontario Chair in Population Studies, she has returned to Canada and Women's College Research Institute. Her work will look at using dietary and lifestyle changes to prevent cancer for women with a strong family history of the condition.

NOW – Addressing vital areas of women's health

Cardiovascular disease is the leading cause of death for Canadian women – more common than the next six causes of death combined. According to the World Health Organization, it is also the leading cause of death for women over 60 years of age. High blood pressure is the most significant risk factor for post-menopausal women. That is why we have recruited Dr. Paula Harvey, a cardiovascular clinician scientist who specializes in how women's bodies regulate blood pressure and maintain the health of blood vessels. Her work focuses on prevention: stopping heart disease before it happens.

Our senior scientists



> **Paula Rochon, MD, MPH, FRCPC**

Vice-President Research, Women's College Hospital

An internationally-recognized researcher and geriatrician, Dr. Rochon is vice-president research at Women's College Hospital and a full professor in the departments of medicine and health policy management and evaluation at the University of Toronto. Her work focuses on optimal prescribing practices for older adults, particularly women and those living with multiple chronic conditions. She also studies prescribing patterns for vulnerable long-term care populations. Dr. Rochon chairs the Gender Issues Committee for the University of Toronto's department of medicine and is a former recipient of the Ontario Premier's Excellence Award.



> **Catherine Classen, PhD**

Respected clinical psychologist and associate professor in the department of psychiatry at the University of Toronto, Dr. Classen looks to improve psychotherapeutic interventions for women who have experienced trauma or other major life stressors. She is also interested in developing web-based interventions for women who cope with major life stressors. She is author of *Treating Women Molested in Childhood and Group Therapy for Cancer Patients* and is on the editorial board of leading trauma journals. Dr. Classen recently served as president of the International Society for the Study of Trauma and Dissociation.



> **Gillian Hawker, MD, FRCPC**

A leading international authority on osteoporosis and osteoarthritis, Dr. Hawker has recently completed groundbreaking research examining the pain-depression link in osteoarthritis. She is physician-in-chief of Women's College Hospital, a full professor in the departments of medicine and health policy management and evaluation at the University of Toronto, a distinguished senior research investigator of the Arthritis Society and F.M. Hill Chair in Academic Women's Medicine. Dr. Hawker serves on numerous national and international committees, including the board of the Osteoarthritis Research Society International.

Our senior scientists



> **Steven Narod, MD, FRCPC**

Dr. Narod is the Canada Research Chair in Breast Cancer and a professor in the department of medicine and in the Dalla Lana School of Public Health at the University of Toronto. He received the 2009 Anthony Miller Award for Excellence in Research and has published over 400 peer-reviewed works on cancer risk factors and epidemiology. Dr. Narod was part of the team that discovered BRCA1 and BRCA2, and he now studies the underlying causes of inherited breast and ovarian cancer. He translates this knowledge into preventive strategies for at-risk families throughout the world.



> **John Semple, MD, FRCSC, MSc**

A world-renowned plastic surgeon, Dr. Semple has helped establish Women's College Hospital as one of Canada's leading centres for breast reconstruction. Dr. Semple was awarded the prestigious Canadian Breast Cancer Foundation – Ontario Region Chair in Surgical Breast Cancer Research in March 2010. He is a professor in the department of surgery at the University of Toronto. His research focuses on ambulatory surgeries, particularly breast restoration and prevention of long-term treatment side-effects such as lymphedema.

Our scientists



An-Wen Chan, MD, DPhil, FRCPC

A Rhodes Scholar with a PhD in clinical epidemiology from Oxford, Dr. Chan completed a dermatology fellowship at the Mayo Clinic and is trained in Mohs surgery. He is an internationally recognized expert in clinical trial quality and also studies high-risk skin cancers. He is building partnerships with organ transplant centres across Toronto to find ways to

reduce skin cancer risk for immunosuppressed patients. He chairs the international SPIRIT Initiative (Standard Protocol Items for Randomized Trials) and is an active member of the Bias Methods Group of the Cochrane Collaboration.



Wee Shian Chan, MSc, MD, FRCPC

Head of the division of internal medicine at Women's College Hospital, Dr. Chan researches medical complications in pregnancy and looks for ways to identify at-risk women and prevent dangerous blood clots. Dr. Chan is medical director of the Clinical Decisions Unit of Women's College, a unique unit that delivers care and evaluates strategies to support

severely ill patients without in-patient admission.



Janice Du Mont, EdD

A recognized applied psychologist, Dr. Janice Du Mont specializes in understanding and addressing sexual assault. Her international review of medico-legal responses to sexual violence has been published by the World Health Organization. In conjunction with the Ontario Networks of Sexual Assault/Domestic Violence Treatment Centres, she is currently evaluating improved

supports for women who suspect they were drugged prior to an assault.



Shannon Dunn, PhD

A molecular scientist with a doctorate in kinesiology, Dr. Shannon Dunn completed her post-doctoral work at Stanford and is jointly appointed to our institute and the University Health Network. Dr. Dunn is investigating why women develop multiple sclerosis more frequently than men and the underlying molecular immune mechanisms that lead to this condition.



Sheila Dunn, MD, MSc

Research director of the Family Practice Health Centre and an associate professor in the department of family and community medicine at the University of Toronto, Dr. Dunn conducts clinical research in contraception and medical abortion and explores access to and delivery of sexual-health services. She is currently evaluating how follow up cervical cancer

testing might be offered in community clinic settings when abnormal Pap results are found.



Sophie Grigoriadis, MD, PhD, FRCPC

Academic leader of the Reproductive Life Stages Program at Women's College Hospital, Dr. Grigoriadis investigates mood disorders across a woman's life span, especially in relation to the presentation and treatment of those disorders. Her recent work has explored factors associated with postpartum depression as well as its symptoms. She has also co-authored guidelines

for the treatment of depression, along with her colleagues at the Canadian Network for Mood and Anxiety Treatments. Dr. Grigoriadis holds a Canadian Institutes of Health Research New Investigator Award.

Our scientists



Andrea Gruneir, PhD

An outstanding young epidemiologist who completed her doctorate at Brown University, Dr. Andrea Gruneir has been awarded both an Ontario Research Coalition Early Researcher Award and a five-year Career Scientist Award from the Ministry of Health and Long-Term Care. She explores the health needs of vulnerable older adults, primarily women, who reside

in Ontario's long-term care facilities.



Paula Harvey, BMBS, PhD, FRACP

Director of our Cardiovascular Research Program, Dr. Harvey explores gender differences in the regulation of blood pressure and the health of blood vessels within the body. She also tests new drug and non-drug therapies for prevention and treatment of hypertension in women.



Sophie Jamal, MD, PhD

Co-director of the Toronto Centre for the Canadian Multicentre Osteoporosis Study and an associate professor in the department of medicine at the University of Toronto, Dr. Jamal holds a New Investigator Award from the Canadian Institutes of Health Research. She studies novel treatments for osteoporosis and the management of bone disease in

patients with complex medical conditions such as chronic kidney disease.



Mona Gupta, PhD

Program and academic leader of the Mental Health and Medicine/General Psychiatry Program at Women's College Hospital, Dr. Gupta's research focuses on ethical issues related to psychiatry. She also studies the provision of mental health care to women living with chronic conditions such as diabetes.



Jacqueline Hochman, MD, MSc

A rheumatologist in the department of medicine at the University of Toronto, Dr. Hochman studies the contribution of neuropathic mechanisms to pain in osteoarthritis. Although arthritis pain is usually attributed to joint damage, Dr. Hochman's work posits that some of the pain experienced by people with osteoarthritis is due to a sensitization of the nerves

which may cause neuropathic-type pain. Effective therapies for neuropathic pain already exist and may prove beneficial for some people with arthritis.



Joanne Kotsopoulos, PhD

Following post-doctoral studies at Harvard Medical School, Dr. Kotsopoulos came to the institute as the Cancer Care Ontario Chair in Population Studies. She evaluates the role of dietary and lifestyle factors in the etiology of breast and ovarian cancer, as well as their interactions with genetic factors.

Our scientists



Lorraine Lipscombe, MD, MSc, FRCPC

A leading voice in the prevention and treatment of Type 2 diabetes in women, Dr. Lipscombe holds a Clinician Scientist Award from the Canadian Diabetes Association. She is exploring the socio-cultural barriers to adequate care and prevention, as well as the links between diabetes and other health conditions such as

breast cancer and hip fractures.



Robin Mason, PhD

A community psychologist, Dr. Mason studies approaches to improving health-care professionals' training on domestic violence and abuse. She also uses participatory action research to develop culturally appropriate violence prevention strategies and studies how past trauma may affect women during pregnancy and postpartum. Dr. Mason was appointed to the

province's Domestic Violence Advisory Council and has also served on two expert advisory panels for the Ontario Women's Directorate, as part of the government's Domestic Violence Action Plan.



Mona Loutfy, MD, FRCPC, MPH

Director of our Women and HIV Research Program, Dr. Loutfy holds an Early Researcher Award from the Ontario Ministry of Research and Innovation as well as a New Investigator Award from the Canadian Institutes of Health Research. Her community-based work was recognized with an Educational Excellence for Community Health Care Award. Dr. Loutfy explores

the clinical management of HIV infection in women, including the gender-specific effects of antiretroviral therapies, and pregnancy planning.

Guiding Principles of the Women's College Research Institute

Excellence – research conducted with scientific rigour

Collaboration – research that is conducted with partners across Toronto, Canada, and the world

Equity – research that responds to diverse women's health concerns

Integrity – research that meets the highest ethical standard

Innovation – research that responds to gaps in health care

Communication – research that is shared in a timely and meaningful way

Social Responsibility – research with a global perspective that values social justice





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