Heart of the Matter

INSIDE:
- GARY GOODYEAR
- RESEARCH MEETS PARENTING
- RESILIENCE FOUND
MESSAGE
FROM THE VICE-PRESIDENT
(RESEARCH AND INTERNATIONAL)

Within these pages you will find a variety of interesting and engaging stories about the innovative research underway at the University of Manitoba. You will also notice the many features have something in common: the stories are about couples.

According to a Stanford University study, approximately 40 per cent of faculty members have partners who are also faculty. Given that we spend the majority of our days at work, it should be of no surprise that people meet their life partners here. We have chosen to highlight a few of the couples and their research life here at the U of M.

Our colleagues featured on the cover—Elissavet Kardami and Peter Cattini—are a couple who work in similar fields of research and collaborate regularly. The other featured couples work here but in diverse and sometimes complementary fields. Their research weaves its way into their relationships and families in different ways.

Please take note of our new Transformational Partnerships approach, outlined on page 17, which involves working collaboratively with industry partners. It is unique in Canada and a model that we are expecting to see great results from in the near future.

—Digvir S. Jayas, PhD, PEng, PAg, FRSC
IN Inside

Heart of the Matter
Every make and model of car has a different engine. The same can be said for our hearts. Elissavet Kardami and Peter Cattini are collaborating to learn what factors will ultimately make our hearts go further and last longer.  BY SEAN MOORE

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**HAPPENINGS**

**AGRICULTURE RISK MANAGED**

A BRIDGE BUILDING PROJECT IS UNDERWAY IN THE ASPER SCHOOL OF BUSINESS: BETWEEN BUSINESS AND AGRICULTURE. THE GUY CARPENTER PROFESSORSHIP IN AGRICULTURE RISK MANAGEMENT AND INSURANCE WAS RECENTLY ESTABLISHED WITH A GENEROUS GIFT OF $750,000 FROM GUY CARPENTER & COMPANY. Lysa Porth, an assistant professor at the Warren Centre for Actuarial Studies, has been appointed to the inaugural professorship that will stimulate sound and innovative risk management policy for producers and business.

“Professor Porth’s background and expertise in agricultural risk management will be a great addition to our university and faculty,” said Michael Benarroch, dean and CA Manitoba chair in business leadership. Porth will also be supervising graduate students in the newly created Master of Actuarial Mathematics program. The professorship will provide significant benefit to the public and the agriculture sector resulting in more stable incomes for producers, more efficient risk management and production and enhanced food security. Guy Carpenter & Company is a global leader in providing risk management and reinsurance intermediary services.

**LISTENING TO CHILDREN & YOUTH**

NURSING PROFESSOR ROBERTA WOODGATE HAS BEEN A TRAILBLAZER IN THE AREA OF CHILDREN AND YOUTH LIVING WITH CHRONIC ILLNESSES AND DISABILITIES THROUGH HER MEDICAL RESEARCH.

Before Woodgate’s research, the voices of children and youth were virtually absent from discussions related to health research. This matters because if healthcare professionals want to have an effective impact on the health of children and youth, healthcare services must be grounded within, and be responsive to, the life-situations of children and youth.

Woodgate’s already strong research program is further strengthened by being awarded a new five-year Canadian Institutes of Health Research (CIHR) Applied Research Chair in Reproductive, Child and Youth Health Services and Policy Research ($925,000). This chair will allow her to conduct innovative, high-quality applied health services and policy research. Her three priorities are: children and youth living with chronic physical and mental illness; children and youth living with disabilities and complex health needs; and promoting health and access to health care for children and youth.

She will work with health system managers, policy-makers and healthcare providers, as well as children and youth who are directly impacted by the research. Her goal is to find policies and practices that will have impact and can be implemented in the healthcare system.

Woodgate is also a scientist at the Manitoba Institute of Child Health and an investigator, Psychosocial Oncology Nursing Research Group, at St-Boniface Hospital Research. In 2010 she was awarded a Manitoba Research Chair in youth health and illness from the Manitoba Health Research Council.

(I-l): Digvir Jayas, vice-president (research and international); Roberta Woodgate (CIHR Applied Research Chair in Reproductive, Child and Youth Health Services and Policy Research); Beverly O’Connell (dean of nursing); Peter Cattini (CIHR university delegate).
Hani el-Gabalawy, an internationally-recognized leader in rheumatoid arthritis research, has been appointed the new scientific director of the CIHR Institute for Musculoskeletal Health and Arthritis—and the Institute will be making its headquarters in the Faculty of Medicine. This marks the first time the U of M will be home base for a national research institute. El-Gabalawy is a professor of medicine and immunology and holds a Rheumatology Research Chair. He has published landmark studies on synovial biology, the pathogenesis of early arthritis, and has recently established a unique First Nations cohort to study gene-environment interactions in the pre-clinical phase of arthritis. His research has been dedicated to understanding the mechanisms involved in initiating and sustaining rheumatoid arthritis and helping patients with this disorder.

Newly appointed Canada Research Chair (CRC) in Pharmacoepidemiology and Vaccine Evaluation, Salah Mahmud, an assistant professor in community health sciences, will be using epidemiological methods to find ways to reduce the risk of developing and dying from these common cancers and infections by studying the use of widely used medications like aspirin, cholesterol lowering drugs and anti-depressants in preventing major cancers, such as prostate, colon and cervical.

Cancer is now the leading cause of death in Canada and infections are still a significant cause of death and suffering. It is becoming increasingly clear that infections cause many cancers with 20 per cent of cancers worldwide now caused by preventable or treatable infections such as H. pylori, the human papillomavirus (HPV) and hepatitis B.

CRCs are research leaders or rising stars in natural sciences and engineering, health sciences, or social sciences and humanities. Research funding was renewed for existing CRCs Diana Brydon (Globalization and Cultural Studies); Warren Cariou (Narrative, Community and Indigenous Cultures); Michelle Driedger (Environment and Health Risk Communication); and Grant Hatch (Molecular Cardiolipin Metabolism). The new and renewed funding is worth a combined $4.3 million. There are currently 45 CRCs at the University of Manitoba.
National Transplant Network

Manitoba Researchers Are Part of the First National Research Program in the World that Unites and Integrates the Solid Organ Transplant, Bone Marrow Transplant and the Donation and Critical Care Research Communities.

Seven researchers from the U of M, CancerCare Manitoba, Transplant Manitoba, Manitoba Institute of Child Health and St-Boniface Hospital Research are part of the Canadian National Transplantation Research Program (CNTRP). Along with 105 researchers and 86 collaborators at 13 centres and universities in nine provinces, the Manitoba researchers will work on six national research projects to improve clinical outcomes for transplant recipients, supported by two national core platforms. The Manitoba researchers are: Peter Nickersen (U of M); Donna Wall (U of M, CancerCare Manitoba); Kristjan Paulson (U of M, CancerCare Manitoba); Darren Freed (U of M, St-Boniface Hospital, St-Boniface Hospital Research); Julie Ho (U of M); David Rush (U of M, Transplant Manitoba); Tom Blydt-Hansen (U of M, Transplant Manitoba, Manitoba Institute of Child Health).

Transforming Arctic Research

Arctic explorers and scientists celebrated the opening of the Nellie Cournoyea Arctic Research Facility located on the fifth floor of the Wallace building, home of the Clayton H. Riddell Faculty of Environment, Earth, and Resources.

Construction on the innovative $15-million facility began two years ago after distinguished alumnus Dr. Clayton H. Riddell donated $2.5 million. His visionary donation coincided with the awarding of a Canada Excellence Research Chair (CERC) in Arctic Geomicrobiology and Climate Change to Søren Rysgaard. The Province of Manitoba also contributed $3.5 million to the U of M’s CERC program.

The faculty’s home in the Wallace Building is now five storeys, as a floor was added to house the 60,000 square feet of specialized laboratories, state-of-the-art instruments, and classrooms. This space accommodates the influx of graduate students and researchers arriving to work with Rysgaard.

Nellie Cournoyea, an Officer of the Order of Canada and recipient of the National Aboriginal Achievement Award and Governor General’s Northern Medal Award, was the first female premier of a Canadian territory; she was the leader of the Northwest Territories from 1991 to 1995. Cournoyea served 16 years as Chair and Executive Officer of the Inuvialuit Regional Corporation, and currently remains a member of its executive committee.
For Kent HayGlass, Canada Research Chair in Immune Regulation, training and mentoring is a passion. The recipient of the 2012 Dr. John M. Bowman Memorial Winnipeg Rh Institute Foundation Award was honoured at the annual awards ceremony along with seven Rh Award recipients, followed by a dinner and public lecture.

The professor of immunology has led the department of immunology for a decade, served as a director of research at the Manitoba Institute for Child Health, directs the MD/PhD program at the U of M and directed a CIHR-funded multidisciplinary research training program addressing the underlying causes, mechanisms and treatments for allergic disease, the most common human immune disorder in the world.

HayGlass has made vital contributions to our understanding of immune regulation and is a leading researcher in the field. His work has a direct impact on the health and well-being of millions of people who suffer from allergies. He has devoted his career to studying cytokines, a family of about 100 small molecules that control the development, activation, direction and nature of immunity. Discoveries made by Hayglass, his trainees and colleagues have shed light on what controls how our immune system reacts, why some people develop asthma or food allergies and others do not, how an ancient arm of the immune system inherited from fruit flies affects our response, and what biomarkers could provide doctors with valuable information about their patients.

HayGlass’ public lecture titled “How Your Immune System Helps—and Harms—You” gave the packed house at the Robert B. Schultz Lecture Theatre a taste of the young science of immunology and his own career path to his current research. In his opening remarks he paid homage to John Bowman, after whom the award he received is named.

**RH AWARDS**
The Rh Awards were established in 1973 by the Winnipeg Rh Institute, now the Winnipeg Rh Institute Foundation, from funds set aside from the sale and...
production of medical formulae. These honours are given to academic staff members who are in the early stages of their careers and who display exceptional innovation, leadership and promise in their respective fields. Past winners have become internationally-known researchers, so this recognition of early success bodes well for our latest recipients. Each winner receives $12,000 toward their research program.

Typically, one award is given in each of the following areas: applied sciences, creative works, health sciences, humanities, interdisciplinary studies, natural sciences and social sciences.

**APPLIED SCIENCES**

Olanrewaju Ojo (mechanical and manufacturing engineering) does cutting-edge research involving advanced engineering materials, particularly those used in aircraft engines. He is a recognized leader in the processing of precipitation-strengthened, nickel-based super alloys that are difficult to process and join. Ojo developed a new way of processing these super alloys that avoids the plaguing problem of cracking and is considerably faster. As a result, his expertise is sought by aerospace companies in Canada and around the world.

**CREATIVE WORKS**

Elroy Friesen (choral studies) has conducted over 100 performances throughout North America, South America and Europe since joining the University of Manitoba. He is a frequent collaborator with many outstanding local and national arts organizations, from the Winnipeg Symphony Orchestra to Europe’s Latvian Radio Choir. He is known for his interpretation of baroque choral masterpieces and has established himself as an expert in Nordic contemporary choral repertoire.

**HEALTH SCIENCES**

Malcolm Doupe (community health sciences/Manitoba Centre for Health Policy) is a go-to expert when it comes to personal care homes and emergency medicine. His research findings are of particular interest to policy-makers in Manitoba, Canada and beyond. Using innovative linkages, Doupe has measured the quality of nursing home care in the province, projected future demands, developed new admission criteria and discussed alternates to institutional care. He has also brought to light the significant mental health, poverty and substance abuse challenges faced by frequent emergency room users.

**HUMANITIES**

Erik Thomson (history) is a historian of Early Modern Europe, specializing in the seventeenth century histories of France and Sweden. He studies interactions between the construction of the early modern state and the expansion of European commerce. Thomson is at the forefront of important trends in his field, opening up entirely new areas of study of great interest to historians.

**INTERDISCIPLINARY**

Stephane Durocher (computer science) tackles difficult algorithmic problems using innovative techniques to yield high-impact results. His research involves computational geometry, data structures and discrete algorithms. He founded the Computational Geometry Laboratory at the University of Manitoba, where he and his team provide solutions to real-world problems: from reducing radiation exposure during cancer treatment, to analyzing models for wireless communication, to updating models of the ocean floor with new sonar data.

**NATURAL SCIENCES**

Mohammad Jafari Jozani (statistics) has made significant contributions to the theory and application of statistics. He has become a key player in two research areas: statistical decision theory and ranked-set type sampling designs. He introduced a general class of balanced loss functions and solved several problems in restricted parameter spaces that led to significant advances in his field. He designed a nomination sampling technique which will benefit those responding to environmental and ecological problems.

**SOCIAL SCIENCES**

Sandy Hershcovis (business administration) is becoming a leading researcher in workplace aggression. Her research aims to understand why people mistreat others at work and how this affects the victim’s well-being, job attitudes and performance. She also looks at how witnesses react to workplace aggression and how organizations can encourage them to intervene when they observe bullying at work.
RESOLVE, formerly known as the Manitoba Research Centre on Family Violence and Violence Against Women, is a regional research network involving the three prairie provinces that coordinates and conducts research aimed at ending family and intimate partner violence.

RESOLVE is one of five research centres on family violence and violence against women that the federal government established in 1992, following the 1989 murder of 14 women at École Polytechnique in Montreal. The five centres have formed an alliance creating a national voice on the issue of family violence and undertaking national studies.

The centre is committed to supporting research that leads to positive results. Their work seeks to uncover the causes of violence and map out effective strategies to prevent and alleviate that violence. With offices in Alberta, Manitoba and Saskatchewan, RESOLVE creates partnerships among service agencies, government departments and universities across the Prairie provinces.

In addition to being very active on the national and international level, the RESOLVE research centres maintain an active local research agenda. Much of our local research is supported by the Prairie Action Foundation, a foundation which covers a portion of our infrastructural costs as well as provides CARE grants for local research conducted in partnership with community agencies. These care grants often provide the seed money supporting initial research that leads to larger Social Sciences and Humanities Research Council grants or grants from other foundations.

“RESOLVE, the PrairieAction Foundation and our partner universities are working together to alleviate the terrible costs of family violence to our citizens and our communities,” says Jane Ursel, director of RESOLVE and professor of sociology in the Faculty of Arts.

What all of their projects have in common is active participation of community and university based researchers and a commitment to produce results which are useful in the community as well as useful in the academic setting. Through RESOLVE, they work together and share information, to ensure that programs designed to serve urban, rural, Aboriginal and ethnic communities are based on the “best practices” of all three provinces.

The RESOLVE research centres at the Universities of Manitoba, Regina and Calgary are involved in local, regional, national and international studies. One study entitled the Justice Observatory has involved all the RESOLVE centres, other Canadian researchers and colleagues from the United States, the United Kingdom, and Australia.

An example of regional research is the current study Intimate Partner Violence in Rural and Northern Communities. This project is being conducted in Manitoba, Saskatchewan, Alberta and the Northwest Territories. One component of the study is to do GPS mapping of incidents of partner violence from RCMP data and compare that to locations of domestic violence services available to women in rural and remote communities.
The Honourable Gary Goodyear was first elected to represent Cambridge-North Dumfries in the House of Commons in 2004 and was re-elected in 2006, 2008 and 2011. On Oct. 30, 2008, he was appointed Minister of State for Science and Technology, and on Aug. 13, 2009, he was named Minister of State responsible for the Federal Economic Development Agency for Southern Ontario (FedDev Ontario) by Prime Minister Stephen Harper. He was re-appointed to both positions on May 18, 2011.
Prior to entering federal politics, he practiced chiropractic medicine and worked as an advisor to investment firms in the biomedical industry. A former public relations director and past president of the College of Chiropractic Sports Sciences in Toronto, Dr. Goodyear taught at the Canadian Memorial Chiropractic College and the University of Waterloo. He was co-designer of a three-year post-graduate sports fellowship program and co-author of Practice Guidelines. He has worked with many athletes, both amateur and professional, and served as medical services chair of the Ontario Special Olympics.

What follows is an excerpt from a conversation with Gary Goodyear:

Research means being curious, taking risks and generating knowledge for the social and economic benefit of our country. Research means using that knowledge to solve global challenges that plague the world's populations.

It is the life saving and altering results of research that is of most importance to me as the Minister of State for Science and Technology and as a chiropractor by profession. One of my goals is to ensure our country develops a deeper culture of investigative and discovery research so Canada can be a leader in finding new treatments and cures for the many diseases afflicting our aging population, finding new sources of energy and developing crops that can better withstand drought conditions to name but a few.

I have travelled around the world to attend conferences on collaborative science, and on how to address global challenges through global cooperation. I have spoken often about innovation, particularly on the importance of partnerships between governments, researchers and business to drive economic activity through science. It is the growing recognition of and support for this collaborative effort that most excites me at this time.

I firmly believe that government’s efforts to promote excellence in research are most successful when they develop partnerships with Canadian researchers and entrepreneurs. It is only through these partnerships that we can continue to attract and retain talented researchers; support excellence in science; bring discoveries and innovations to the marketplace; and build world-leading S&T infrastructure.

Our government understands that Canada’s long-term economic growth will be driven in large measure by innovations arising from scientific research and development. We are committed to this and, since 2006, we have invested more than $9 billion in new funding to support science, technology and the growth of innovative firms.

The huge potential of science and technology in the marketplace is also of importance to me as it results in new products being marketed domestically and internationally and the creation of good-quality, high-paying, long-lasting jobs and economic growth.

We need to encourage more innovation, improve the climate for new ventures to commercialize university research, and encourage industry-academic collaboration to transfer more knowledge out of our world-class universities and into the living rooms and hospitals of the world. We have taken action to support all of these goals, including the refocusing of the National Research Council (NRC).

The NRC has transformed to open its doors to the cutting-edge infrastructure, technical expertise and people that Canadian businesses need to commercialize their innovative ideas.

People of all ages benefit from research and, in many cases, those same people are helping us find productive ways of applying this research. An important part of my mandate is to ensure we invest in research and research training at post-secondary institutions through the granting councils — so that we create the next generation of world-leading researchers and innovators.

The granting councils have many programs, such as the Canada Graduate Scholarships, which support our young scholars and help prepare them for the jobs of the future.

In making strategic investments in science and technology programming, we are preparing our youth for the jobs of the future, which in turn will strengthen the economy and improve the quality of life for Canadians in the years to come.

A big part of the innovation continuum involves government support for research excellence. The Social Sciences and Humanities Research Council takes a people-centred approach to innovation, and enhances our understanding of the cultural, technological, environmental and economic drivers of progress in Canada. One example that comes to mind is SSHRC’s Connection program. It supports activities such as networking, creating research-based knowledge and offers a partnership approach to research through the Partnership Grants.

A cynic would ask, “Why does any of this matter to me?” We do not give the average Canadian credit — in today’s world, you look around you and the value of research is self-evident. From the foods we eat, the cars we drive, to staying connected with our loved ones and searching for medicines we need to cure disease — science is at the core of it all.

For Canada to prosper, we must not only participate but lead the way, and this Government is working with both ends of the innovation spectrum, our post-secondary institutions and our businesses, to make this happen.

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In the mid-1970s a newly discovered protein isolated from the pituitary gland caused excitement among researchers because it stimulated cells to divide and grow. The protein seemed to have magical properties and effects on multiple tissues and cells but little was known about the protein’s potential.
A breakthrough in understanding came in 1985 when Elissavet Kardami, then a post-doctoral fellow at the University of California, Berkeley, published a study in the journal *Proceedings of the National Academy of Science, U.S.A*. She identified what she called a “muscle-derived growth factor,” but today it’s known more specifically as “fibroblast growth factor-2” (FGF-2). This finding brought her to the attention of the University of Manitoba and in 1989, as a new assistant professor, Kardami published her highly-cited paper—“Basic fibroblast growth factor in atria and ventricles of the vertebrate heart.” In it, she reported what the protein was and, intriguingly, that the heart makes it. A few years later Kardami was first to report the ability of FGF-2 to protect heart muscle cells from the kind of injury you might see in a heart attack.

Today, science knows of 23 fibroblast growth factors, or FGFs, but FGF-2 is a remarkable member of this group. It provides services to numerous cell types and tasks including cell proliferation, differentiation, survival, adhesions, migration, limb formation, wound healing, and blood vessel formation and remodeling, to name but a few. It may even be an easy leap to imagine that some of these factors, including FGF-2, are like components of a multi-grade oil that help the heart work as a pump, non-stop, from before birth till death in an immensely demanding and possibly underappreciated career.

In a relaxed day at work the heart pumps 6,800 litres of blood. At this rate it could fill four Olympic-sized pools in a year. If need be, during bouts of exercise, the blood flow through the heart can increase six-fold. We don’t know if FGF-2 helps with this, but we do know that with every beat of the heart, FGF-2 is released into the space between cells where it can be stored and potentially offer some protection against damage if injury to the heart occurs either because of overwork, or from a heart attack. Kardami’s work opened the door to this awareness, and to
this day, the implications and applications of her study are still being explored.

Kardami is now a professor of human anatomy and cell science in the Faculty of Medicine, and principal investigator of the muscle cell biochemistry group in the Institute of Cardiovascular Sciences at the St-Boniface Hospital Research Centre. Her passion is protein biochemistry and sometimes her individual research interests are complemented by Peter Cattini’s trailblazing research program in endocrinology—the study of hormones as well as growth factors and their effects.

Cattini, a professor in, and head of, the Department of Physiology in the Faculty of Medicine, is also Kardami’s husband. When they collaborate, they have great success—they have co-authored 37 articles and shared seven grants, contributing to $9.5 million in research funding awarded to the U of M, and that does not even include millions of additional research dollars they have helped secure when they are not co-applicants. But do they work well together?

“Well, we’re in two different buildings,” Cattini says.

“We work better when we’re apart so it’s good that we each have our own domains and we managed to separate them sufficiently so we’re not in each other’s way,” adds Kardami. “We also have a great division of labour. They do the mutations and the molecular biology, and the big picture”—she laughs—“the very big picture.”

“She thinks I’m somewhat superficial,” Cattini says.

Kardami continues: “We do the protein biochemistry, the cardiovascular models, and in turn the physiology, the cell biology. And occasionally the two sides meet and we create a project. And we seem to have a good synergy. But it does require that we have separate labs, yes.”

But it wasn’t playful banter and fruitful collaborations for this pair when they first met as students 33 years ago in the Biophysics Department of King’s College, London. Cattini was a local boy from the London suburb of Wimbledon and only just beginning his PhD while Kardami, a native of Corinth, Greece was already into her program, and paying no mind to her new peer in the process.

“I was ignoring him at first to tell you the truth. Oh man, he was very popular,” she says.
Because he was cock-of-the-walk?

“Exactly! He was the favourite guy with students as well as staff. He was very charismatic.”

Fast forward a few years—past the disco era and post-doctoral placements that found them across the Bay Bridge in San Francisco from each other—to their arrival at the U of M in April 1986.

When they arrived to begin work their labs weren’t ready and they had to share a lab for three months.

“This is why we know we can’t share a lab,” Cattini says. “I’m sort of like the anal-retentive chef from Saturday Night Live. Everything needs to be in its place. It’s the same in the kitchen—I clean as I go so by the time the meal is done all the washing-up is done. Vetta is the opposite and in a small lab setting those two mind-sets are not compatible and going home in the car afterwards you couldn’t really complain about your work day.”

Because he was cock-of-the-walk?

To understand, rewind the film to 2001 when they published novel findings from a study examining mice with altered genomes that over-produced FGF-2 in the heart.

Humans can’t be transgenic like those mice but since FGF-2 is produced naturally in the heart and is released from heart muscle cells on contraction, increasing the heart rate—as happens in exercise—should boost FGF release and therefore local availability. Their preliminary studies did indeed find this to be true.

“But that is another direction,” Kardami says.

“Yes,” Cattini agrees. “It’s a logical extension of our work together but before we go forward we need to re-do some studies and repeat some things.”

Exercise is good for you. This should not be profound news to anyone. But as we learn what factors associated with exercise extol benefits, that knowledge may become important to ensure we are maximizing our natural protection from damage. Once we know what these factors are and do, we can think about optimizing their levels for any individual, hopefully through changes in behaviour, like exercise or nutrition, or treatments. Remember, these beneficial factors, like FGF-2, would be like components in your car’s engine oil, which needs to be topped up or replaced for optimal performance. The engine, like the heart, can be different from one car to the next, and be affected by what gas or air mixture is used (what we eat or breathe), what the car’s used for (what work or physical activities we do) and even where it’s driven and the climate (where we live).

“Maybe some people cannot exercise as much as they ought to for whatever reason,” Kardami says. “Perhaps they can exercise up to certain point and be supplemented with FGF the rest of the way if FGF is indeed part of the therapeutic components of exercise.”

“So yeah,” Cattini says, “we’re looking at things like this together.”

Over the years Kardami’s lab has identified and helped define the cardioprotective properties of FGF-2. With Cattini’s lab, they learned it can protect the heart from effects of some anti-cancer drugs, like doxorubicin. It’s an effective component of chemotherapy to treat certain cancers, but they learned it can protect the heart from effects of some anti-cancer drugs, like doxorubicin. It’s an effective component of chemotherapy to treat certain cancers, but it harms healthy heart cells in the process.

Part of the problem stems from evolution. Cells have developed ways to protect themselves from harm. Cancer cells are no different—they literally have pumps in them that expel toxins, including anti-cancer drugs targeting them. If the cancer in question is particularly adept at this, more drugs will be needed to overcome those pumps, and so organs such as the heart suffer more collateral damage. But in a 2013 paper in the journal Cardiovascular Research, Cattini and Kardami reported that FGF-2 shows promise in protecting the heart from doxorubicin: it appears to increase the heart’s ability to pump out the drug.

“But now for the added complication, because you know what FGF actually stands for: fibroblast growth factor,” Cattini says. “The issue here is that phrase ‘growth factor’ because if you could think of something that you would not want to do with a tumor, it would be to help it grow. So you can say ‘brilliant’, you protected the heart, yes, but the factor you’re using is a factor that could very well make this cancer grow out of control anyway. So what’s the point?”

But Kardami’s lab has helped show FGF-2 can be modified in ways that uncouple its two properties: you can remove its ability to stimulate cell division but keep its cardioprotective qualities. This “non-mitogenic FGF-2” is not found in the natural world.

A recent proof-of-principle study by Kardami and Cattini in the journal Cardiovascular Toxicology reports on this mutant form of FGF-2. They rigged a mouse heart up to a device to mimic blood flow through it and introduced the non-mitogenic FGF-2 to see if it protected the heart from short-term doxorubicin-induced injury. It did. The next phase is to see if this form of FGF-2 protects the heart from more long-term anti-cancer drug treatment while still allowing the cancer cells to be targeted for destruction.

There is much work to be done in this area before it could be applied to the public. But every day innumerable people are doing something that involves FGF-2, and Cattini and Kardami are now beginning to investigate it—exercise.

To understand, rewind the film to 2001 when they published novel findings from a study examining mice with altered genomes that over-produced FGF-2 in the heart. These hearts suffered less damage when they were given, essentially, a heart attack and allowed to recover.
Jocelyn Thorpe • women’s and gender studies

Canadian wilderness seems a self-evident entity, yet, as this volume shows in vivid historical detail, wilderness is not what it seems. In Temagami’s Tangled Wild, Jocelyn Thorpe traces how struggles over meaning, racialized and gendered identities, and land have actually made the Temagami area in Ontario into a site emblematic of wild Canadian nature, even though the Teme-Augama Anishnabai have long understood the region as their homeland rather than as a wilderness. Elloquent and accessible, this engaging history challenges readers to acknowledge the embeddedness of colonial relations in our notions of wilderness, and to reconsider our understanding of the wilderness ideal.

DISRAELI: THE ROMANCE OF POLITICS (University of Toronto Press, 2013) 
Robert O’Kell • English, film and theatre

Disraeli: The Romance of Politics examines the relation between Disraeli’s novels and his political career and illuminates both in a way not previously attempted. The central argument is that the recurring fantasy structures of Disraeli’s novels and tales bear a striking similarity to the imaginative shaping of his political career. Both endeavours express the same urgencies of his life. The novels serve Disraeli as a means of exploring and coming to terms with both public and private aspects of his identity that are problematical, while the politics becomes a form of theatre in which the tensions and ambivalences of his character, including those related to his Jewish heritage, find ever more powerful expression in the roles occasioned by ideological disputes and his struggle for power within the Conservative Party.

In analyzing the novels in the specific contexts of the crises of the political career—and vice-versa—this interdisciplinary study redefines the imaginatively autobiographical nature of the early fictions and provides radically new interpretations of the major novels, Coningsby (1844), Sybil (1845), Tancred (1847), Lothair (1870), and Endymion (1880), placing all of them in the genre of what Disraeli called “the psychological romance.” It also provides fresh analyses of the Young England movement, the discussions of the Condition of England, the Corn Law debate of 1845–46, the Irish Disestablishment crisis of 1868, and the Eastern Question in the 1870s. The latter two topics also lead to new insight into the nature of Disraeli’s imperialism and his relationship with Queen Victoria. These reassessments are all based on evidence drawn from Disraeli’s own manuscripts, letters and speeches, and from parliamentary debates, as well as the memoirs and correspondence of his contemporaries.

Ian J. Kerr • history

India has had operating railways for well over 150 years: railways that have played a central and well-documented role in the making of India in the colonial and post-colonial eras. This handbook provides a reference guide for researchers interested in almost any facet of the history, colonial and post-colonial, of these railways. The secondary literature is identified and surveyed, primary sources and their locations identified, statistical and cartographic data discussed and presented, and a massive bibliography made available. This handbook is the indispensable tool for anyone seeking to understand India’s railways and the roles they played in the making of modern India.

PLACE AND REPLACE: ESSAYS ON WESTERN CANADA (University of Manitoba Press, 2013) 
Adele Perry • history, Esyllt Jones • history, Leah Morton • graduate studies

Place and Replace is a collection of recent interdisciplinary research into Western Canada that calls attention to the multiple political, social, and cultural labors performed by the concept of “place.” The book continues a long-standing tradition of situating questions of place at the center of analyses of Western Canada’s cultures,
pasts, and politics, while making clear that place is never stable, universal, or static. The essays here confirm the interests and priorities of Western Canadian scholarship that have emerged over the past 40 years and remind us of the importance of Indigenous peoples, dispossession, and colonialism; of migration, race and ethnicity; of gender and women’s experiences; of the impact of the natural and built environment; and the impact of politics and the state.

**Management and the Gospel: Luke’s Radical Message for the First and Twenty-First Centuries**
Palgrave Macmillan, 2013
Bruno Dyck • business administration

The goals of Management and the Gospel: Luke’s Radical Message for the First and Twenty-First Centuries may appear to be simple: it describes what management theory and practice looked like in the first century, uses this as a lens to examine what the Gospel of Luke says about management, and draws out implications for today. However, the book is quite profound in finding that management is a dominant theme in the Gospel, that its message is consistently counter-cultural, and that Luke contains a four-phase ‘how to’ process model to help readers to implement change. Readers will acquire a new way to understand the Gospel as well as the moral foundations of modern management.

**Athenia Torpedoed: The U-Boat Attack that Ignited the Battle of the Atlantic**
(Naval Institute Press, 2012)
Francis M. Carroll • history

Just hours after World War II was declared, Germany struck its first blow, firing without warning on the passenger liner Athena. The British ship was loaded with Americans, Canadians, and Europeans attempting to cross the Atlantic before the outbreak of war. As the ship sank, 1,306 were rescued but 112 people were lost, including 30 Americans. This account of the disaster, based on new research, tells a dramatic story of tragedy and triumph, as historian Francis Carroll explains how the incident shaped policy in the U.S., UK, and Canada. For Britain, it was seen as a violation of international law and convoys were sent to protect shipping. In Canada, Athena’s sinking rallied support to go to war. In the United States, it exposed Germany as a serious threat and changed public opinion enough to allow the country to sell munitions and supplies to Britain and France.

**Jewish Masculinities: German Jews, Gender, and History**
(Indiana University Press, 2012)
Editors: Benjamin Maria Baader • history, Sharon Giller (Hebrew Union College), Paul Lerner (University of Southern California)

Stereotyped as delicate and feeble intellectuals, Jewish men in German-speaking lands in fact developed a rich and complex spectrum of male norms, models, and behaviours. Jewish Masculinities explores conceptions and experiences of masculinity among Jews in Germany from the 16th through the late 20th century as well as emigrants to North America, Palestine, and Israel. The volume examines the different worlds of students, businessmen, molebs, ritual slaughterers, rabbis, performers, and others, shedding new light on the challenge for Jewish men of balancing German citizenship and cultural affiliation with Jewish communal solidarity, religious practice, and identity.

**Transformations and Crisis of Liberalism in Argentina, 1930–1955**
(University of Pittsburgh Press, 2012)
Jorge A. Nállim • history

Jorge A. Nállim chronicles the decline of liberalism in Argentina during the volatile period between two military coups—the 1930 overthrow of Hipólito Yrigoyen and the deposing of Juan Perón in 1955. While historians have primarily focused on liberalism in economic or political contexts, Nállim instead documents a wide range of locations where liberalism was claimed and ultimately marginalized in the pursuit of individual agendas.

Nállim shows how concepts of liberalism were espoused by various groups who “invented traditions” to legitimize their methods of political, religious, class, intellectual, or cultural hegemony. In these deeply fractured and corrupt processes, liberalism lost political favor and alienated the public. These events also set the table for Peronism and stifled the future of progressive liberalism in Argentina.

While critics have positioned the rhetoric of liberalism during this period as one of decadence or irrelevance, Nállim instead shows it to be a vital and complex factor in the metamorphosis of modern history in Argentina and Latin America as well.

“In addition to being home to world-class teaching and research, the University of Manitoba is a driving force behind our province’s economy,” said president and vice-chancellor David Barnard. “Our innovative new model will further position us as a partner with business. We will build new bridges and create new opportunities that will benefit our university and entrepreneurs while fueling economic growth in Manitoba.”

“The goal of Transformational Partnerships is to encourage and stimulate the creation of new products and services by connecting the university’s considerable research expertise with commercial development and innovation in local companies,” said Digvir Jayas, vice-president (research and international) at the University of Manitoba. “The net result will be an increase in business productivity and overall research enterprise in the Province.”

The university is taking a fresh stance on handling intellectual property (IP) created in collaborative research efforts, allowing the company to manage and control any arising IP. This will enable companies to move products to market more quickly. The new model appreciates the need for a more flexible and nimble response to industry and will include new agreements and processes to meet those needs.

“Not unique to Manitoba is the friction that sometimes exists between industry and research institutions around the intellectual property generated by collaborative research efforts,” said Jan Lederman, executive chair of Innovate Manitoba and chair of the University of Manitoba Board of Governors. “The UM’s new approach removes that friction. The move to make the Technology Transfer and Research Services Offices more outward facing, and the implementation of new technology tools to better connect industry with research, are additional positive steps. The UM also is committed to working with Innovate Manitoba to develop additional strategies to close Manitoba’s commercialization gap.”

Sean McKay, CEO of the Composites Innovation Centre, was also a strong proponent for the new approach. “Having a model that deals with ownership and realistic cost sharing is a significant step forward,” said McKay. “We very much look forward to working closely with the university as the process matures and hopefully will be able to point to specific success stories in the near future.”

Other aspects of the new strategy include a more proactive role for the university’s Technology Transfer Office who will visit companies to identify opportunities for collaborative research and be knocking on researchers’ lab doors to get a deeper understanding of the research expertise at the university. The partnerships team will be the primary point of contact for industry to connect with expertise and, through the support of the Research Services office, will be matched with funding programs available.

To learn more about Transformational Partnerships visit umanitoba.ca/partnerships.
Decision-making is fundamental to all aspects of health care but there is much to learn about the experience of decision-making for patients. Existing research in this area draws upon a traditional understanding of decision-making which assumes that patients make clinically “rational” decisions. However, in the case of life-threatening illness such as cancer, patients do not always make decisions as expected and the reasons for this are unclear. It is this gap between what is expected and what actually occurs which continues to drive my curiosity about health decision-making.

I became aware of this gap while conducting a pilot study for my Master of Science thesis in which I interviewed young mothers with cancer about the experience of parenting with a new diagnosis. Data analysis showed that a newly diagnosed woman is faced with many decisions concerning treatment, communicating with others, her finances and daily work, the appearance and function of her body, and other aspects of daily life. She also may be challenged by a range of physical, psychological and social distresses which may impact her decision-making.

My thesis study came to focus on decision-making among young mothers with cancer. What became a great curiosity for me was the reported struggle with decision-making for this sample of women. I noted that they took individualized approaches to decisions faced and they were highly influenced by the threat of cancer on their family life and their deep desire to maintain their bonds with their children.

If decision-making was influenced by the bonds with others for this group, would this hold true for other women as well? It is known that younger and older women have different social and emotional needs in cancer but it is unknown if women of different ages have different needs surrounding their decision-making as well. To investigate this, I developed a PhD study with Dr. Roberta Woodgate which focuses on understanding the experience of decision-making for women of various ages in the context of breast cancer. Through this study I will seek to understand women’s preferences and motivations for decision-making and will investigate how women’s decisions may be influenced by personal values, relationships, appearance-related issues, and the perceived psychological and social threat of the disease.

It is my hope that by paying attention to the patient’s perspective of decision-making and by being attuned to the unique psychological and social needs of women of various ages, better supportive care may be provided to persons making decisions in the context of cancer. In time this may inform best practices for counseling patients early in the cancer journey and may lead to the development of tools and resources for decision-making which are driven by patient-reported data.

Heather is an Interdisciplinary PhD student focusing on psychosocial oncology and is supervised by Dr. Roberta Woodgate. Heather currently holds a Fredrick Banting and Charles Best Canada Graduate Scholarship Doctoral Award from the Canadian Institutes of Health Research. She was also a finalist in the inaugural University of Manitoba 3 Minute Thesis® competition, where competitors were required to distill their research into succinct and engaging presentations not exceeding three minutes in length. To see her 3MT presentation visit umanitoba.ca/3mt
Today, Lori Wilkinson is associate dean of the Faculty of Arts and professor of sociology. Her husband is John Sorensen, associate professor in chemistry. How they got together is a story of hard work, perseverance, and some luck. Lori was raised in Yorkton and had been encouraged to attend university by her peers and high school teachers. She went to the University of Saskatchewan and received her BA in 1994. She immediately pursued her master’s degree in sociology and received it in 1996. From there, she went to the University of Alberta where she was awarded her doctorate in 2001. Her current research is a longitudinal study on the health and well-being of child immigrants to Canada. She asks: “What’s it like growing up in Canada as a young immigrant?”

While Lori was pursuing her work in sociology, her pursuer was following close behind. John received his bachelor’s in 1995 and his master’s in 1998, both from Saskatchewan. He, too, went to the U of A for his doctorate, receiving his in 2003.

He had grown up in a small prairie town, and she in a small city of fifteen thousand, just down the road. When they met at a party at the University of Saskatchewan, it was almost love at first sight. But then life happened.
After getting her doctorate from the University of Alberta, Lori applied to several post-secondary institutions for jobs.

“There weren’t many jobs in my field available at the time,” she recalls, “but the University of Manitoba made an offer first. So I took it.”

And, so began another leg of their long-distance marriage. They had already endured a series of separations from one another during their master’s and doctoral studies; they had spent two years of marriage commuting between Edmonton and Saskatoon as one or the other had pursued postgraduate education. Then, when Lori was accepted at the U of M, John stayed behind in Edmonton.

And then he went to postdoctoral work at Oxford. For three years, John and Lori telecommuted and flew back and forth between Canada and England.

“That was a challenge,” John recalls. “But it was well worth it.”

Long-distance marriages are actually common in academia. In fact, one of Lori’s sociology colleagues at the U of M, Laura Funk, has been studying the phenomenon of “living apart together” couples (or LATs). Such relationships include someone who is in a romantic or intimate relationship with another person who resides elsewhere. This group includes couples who are married but for various reasons are living apart.

A report by Stats Canada released in March 2013 found that almost two million Canadians are living in LAT relationships. Of these, more than 240,000 people in Canada are in commuter marriages, with partners spending time apart but also traveling between residences—sometimes across great distances.
Fortunately, following his post-doctoral studies at Oxford, John applied for and was offered a teaching position studying the chemistry of natural products at the U of M.

“There was interest from the department and the position was open, so I took advantage of the opportunity to move to Winnipeg so I could be with my wife,” John says.

His research focuses on small biological molecules and developing a new class of antibiotics that will help fight infections.

“I had always been interested in science and nature as I was growing up in Saskatchewan,” he explains. “I wanted to know why the leaves changed colour in the fall. The why of cell biology always intrigued me.”

His appointment here ended a decade of phone calls, emails and airline travel to visit one another.

“We racked up a lot of Aeroplan points,” jokes Lori. “And this was long before Skype, so we went for long periods of time without actually seeing each other.”

Although they’re now on the same campus, it doesn’t mean they see each other during the day. Their offices are physically only several hundred feet apart, but they are in different faculties, with little direct interaction.

“There are very few instances where we have worked together on anything,” John explains. “It’s rare for us to run into one another on campus, but we do schedule lunches together regularly. It’s more of a challenge to be in the same place at the same time!”

A typical day finds Lori and John driving to work together at about 8 a.m. and back home at about 6 a.m. They tend to work Saturdays, either preparing classes or doing research. Weekend evenings usually mean labs or marking papers.

“We’re busy, and very stressed, but very close to one another,” John says. “We have the added opportunity of going to and from work together, giving us more time together than many working couples.”

When they are together, they value each moment. “Because we’re so busy, we focus on one another and our marriage,” Lori explains. “We go for walks, we like camping and hiking, and Sundays are our real ‘couple days.’”

Furthermore, they don’t tend to “talk shop” at home. “We like to keep work at work and home at home,” John says. “It’s important to do so because of how busy we can be. Maintaining that balance is very important.”

One reason why this may work so well for John and Lori is because chemistry and sociology are very different disciplines. John explains: “We can’t really discuss the fine details of one another’s work, but we do find we get insight into how each other’s faculties and fields are structured and how they function differently, and that is sometimes a basis of conversation.”

For example, John was surprised that students in sociology published single author articles, because in chemistry it is common for both graduate student and supervisor to publish. This is usually because it’s the lead researchers who are the sources of funding and whose labs are used for research, and hence get the recognition. In the social sciences, contributions from advisor-directed graduate students are welcomed more readily.

Lori explains: “We both have gained a greater understanding of how each other’s faculties work, and we get insight into what’s going on across the university, sharing administrative policy changes and differences that have implications to our own departments. That wouldn’t be possible if we didn’t have the interactions that we do.”

And in at least one case, they did end up working together on a research project. In 2009, when iClickers were becoming popular as tools to evaluate students’ learning in a subject, Lori and John teamed up to design a survey of first- and second-year chemistry students. They used iClicker technology to find out its usefulness in measuring students’ understanding of certain concepts.

“That was different,” says John. “Lori’s expertise in designing surveys allowed us to combine our fields effectively. It speaks to a need for exploring ways in which collaborative ventures could work across other disciplines.”

The best collaboration of all is their marriage, of course. No longer in a commuting or long-distance relationship, Lori and John are together, following their own research paths but sharing life with one another.

“It works,” notes Lori.

“We can’t really discuss the fine details of one another’s work, but we do find we get insight into how each other’s faculties and fields are structured and how they function differently, and that is sometimes a basis of conversation.”
All eyes are on a large cockroach, nearly the size of a cellphone, as it flaps its wings in slow motion at the front of the entomology lab.

Researcher Terry Galloway is synchronizing a strobe light flash with the insect’s wing beat frequency, nearly freezing the movement in time and giving the high school students gathered around a unique look at the cockroach in flight.

“I’m a real science nerd. I’m absolutely loving this,” says 17-year-old Jacob Wolfe, a Grade 12 student from Vincent Massey High School in Brandon, Man.

More than 160 teenagers and teachers came to the Fort Garry campus Feb. 22 for the annual Science, Engineering and Technology (SET) Day. Grade 11 and 12 students—from 24 schools in Manitoba and Northwest Ontario—took part in hands-on activities to better understand what researchers do at the U of M.

Galloway, an entomologist, described how his love of insects and his expertise in parasites has taken him to different corners of the Earth, including New Zealand where he collected fleas off penguins storming the beach of a nature reserve. “It was a blizzard of birds. It was a cool place,” he says.

Galloway is always on the lookout for new species. Researchers estimate there are between four and 79 million species not yet described. “I had no idea there were so many different kinds,” he says.

Below: Arctic science activities at Fort Whyte Centre.
says Grade 12 student Osiname (from Vincent Massey School in Brandon, Man.), who wants to be a mechanical engineer. “It was interesting to see how enthusiastic he is about what he does.”

Galloway says it’s important to show students the diversity of entomology. They heard how the science can be used to develop mathematical models to predict crop damage, study behaviour in psychology and build robotics in engineering. Homeschool mom and teacher by trade Laurette Geurts, who brought her daughter and nephew to SET Day, likened the event to “a discovery day.”

“The best way to discover is by seeing and doing, and by talking to the professors, finding out what kinds of jobs they could have,” Geurts says.

In the human nutritional sciences lab, students learned about fortified foods by making pizza. They heard how U of M researchers develop healthier foods and beverages, like iced tea fortified with vitamin D. One group used protein-rich pinto bean flour to create their pizza dough. “The different ingredients used in this pizza dough—some of them I’ve never heard of before,” says 16-year-old Cassidy Dutchak, from Ethelbert School. “I’m interested in the science of it, what each ingredient does.”

There is a lot to consider when bringing a new product to market; the taste, aroma and flavour has to appeal to the consumer, says human nutritional sciences department head James House. He wanted to instill in the students “an appreciation of converting Manitoba agriculture products into healthy, wholesome foods people want to consume.”

Some students headed to Fort Whyte Alive where they transformed into Arctic researchers investigating climate change. There, they learned about sea ice dynamics and snow physics. “We were pretending we were in the Arctic and testing the snow for mercury as well as the air,” says Kayla Cochrane, a Grade 12 student from Charles Sinclair School in Fisher River, Man. “I like to learn about science, the theories and experiments. It was really fun.”

Back on campus students dissected an animal heart and explored the effects of exercise on heart rate and sounds, and blood pressure. In the nano-systems fabrication lab, they used electromyography and electrocardiograph systems to monitor the electrical signals in their muscles.

Biochemistry student Nicole Barairo also introduced them to forensic techniques, like those used to collect fingerprints at a crime scene. “The genetic differences between people are fascinating,” says 17-year-old Nicole Dohler.
With our final year of high school just around the corner, everyone is starting to feel the pressure of deciding what we want to do with our lives. Now is a good time to start making good choices, say our teachers, now is the time to start taking things seriously. But, it’s difficult to work hard if you’re not sure what you’re working towards, if you’re missing a direction. When the opportunity to go to SET Day came up, I jumped at the chance. I wanted every possible way of getting more insight on what I want to do with my life before I have to start making choices for the years to come.

The most inspiring part of SET Day for me, was listening to the speakers. It was a chance to see what was really out there and hear firsthand how we ourselves could make a difference in someone’s life while pursuing education and careers.

I’ve always wanted to do something meaningful and beneficial to others with my life. Hearing Gordon Geisbrecht speak about how he has used his research on cold-water survival to help save peoples’ lives was exactly the kind of thing I was interested in. The extreme conditions he put himself through in dedication to his research was incredibly inspiring. The kind of commitment it takes to willingly make yourself hypothermic over 30 times is incredible. It goes to show how hard work pays off because he has been successful in changing regulations in regards to people trapped in sinking cars because of his research, regulations that will go on to save lives. His speech made me see that it is possible to work in an area that is of interest to you, while at the same time, making a positive contribution to society.

Making a difference in a few lives is one thing, making a difference on a global scale is something entirely different. Conducting research on species populations and how changing habitats affect these populations can give a lot of insight into how our planet is changing. This is the other area of education that really interests me to follow, after high school. When Emily Choy began her presentation on the research she conducted on Beluga Whales in Nunavut I was excited to hear more. She talked about her time in the Arctic, both relating directly to the research, the experiences she had with wild animals and the team she was researching with, like days with 24 hours of sunlight and baseball on the tundra. Knowing that there are opportunities to travel and see more of the world while learning and discovering important information is incredibly exciting. For me, chances like this would feel like amazing and valuable life experiences, while at the same time having a chance to make a difference in the world.

I came away from SET Day feeling a lot more confident about what my future holds. Not because I made any decisions about what I want to do after high school, but because I learned there are so many possibilities of what I can do. Having the chance to hear about real opportunities and different fields of education from students and professors made me realize that it would be hard to go in the wrong direction. For me, SET Day helped close the gap between just thinking about my future and really being able to see what I can do with my life.
RESEARCH MEETS PARENTING

BY KATIE CHALMERS-BROOKS

How a pair of professors turn their academic analysis of important issues into real-world results, and effective parenting at home.
The pressure to be thin has a way of finding you, even if you’re a young child living in an isolated village of 100 with only one channel on your TV.

Deborah McPhail grew up in Ochre River, Man. during the 1980s when Jane Fonda workouts and Weight Watchers were all the rage among the women in her family. She followed their lead, embarking on her first diet by kindergarten. “There is a lot of pressure even at five when you’re not really cognisant; you just know that kids pick on you and you know if you were smaller then they wouldn’t,” she says. “My mom and aunts and grandma were all really into weight loss and wanting to be thin and living up to a particular ideal for beauty which I realized when I went to university was actually something you could critique.”

A community health sciences assistant professor, McPhail researches the stigma of obesity. It’s an exciting time to do this, she says. “On the one hand is the pop cultural notion about obesity as a failure of the individual to eat well and exercise. As a result we have shows like The Biggest Loser and Village on a Diet. Then there is the medical and public health knowledge and research about obesity as a disease or a result of a disease.”

Scholars like McPhail are deepening this debate by challenging the notion of what’s considered a ‘normal’ weight. Their ideas are now considered more legitimate as traditional medical researchers produce studies that suggest being overweight might not be as harmful to our health as we once thought. “So there is a really interesting conversation happening,” she says.

The 35-year-old is furthering this discussion with her latest research project Reproducing Stigma? With funding from the U of M, she’s investigating whether women who are considered overweight or obese are treated differently by the medical staff they encounter on their journey of having a baby. She and colleagues from Memorial University recently began interviews with women in Winnipeg and St. John’s, N.L., documenting their experiences from pregnancy to post-delivery. McPhail is interested in hearing about their interactions with fertility doctors, obstetricians, midwives and nurses. She wants to know if the topic of weight came up, what they were told and how that made them feel. For those who’ve had bad experiences, she also wants to know what they would tell practitioners about how they could do things differently.

It’s a research area that’s been explored very little and one McPhail was inspired to pursue after reading a story in The Globe and Mail about doctors refusing invitro fertilization to women whose Body Mass Index deems them obese, citing concerns about higher risks of medical complications. While McPhail recognizes doctors’ intentions are good, she fears regulating who can reproduce and who can’t encourages a frightening discussion of eugenics. “I just got really mad,” she says.

From her anger comes her strongest academia. “Because I have a background in feminist research I just know that the best research is often done from that experience of feeling really angry and feeling like this a health equity issue and you want to do something about it.”

The topic of reproductive technology was also top of mind since she and Jocelyn Thorpe, her partner and a fellow U of M professor, were starting a family at the time. (The couple met a decade ago while doing their master’s in sociology and equity studies.) Thorpe gave birth to Willa, now four, and Leo, almost two. She says the conversation that results from having two professors in the house has since shifted from complex feminist theories to more mundane queries: ‘Did you pack lunch? Did you remember Willa’s bathing suit? Are you doing pick up or drop off?’ “We’ve entered a different stage,” Thorpe says.

It’s another childhood, Thorpe’s own, that has in subtle ways influenced the research topics she gravitates toward. Last year she released the book Temagami’s Tangled Wild: Race, Gender, and the Making of Canadian Nature (see page 15) detailing her findings about a region in northeastern Ontario that is commonly seen only as pristine Canadian wilderness yet is home to the Teme-Augama Anishnabai, who for more than a century have struggled to maintain control over their territory. “There is nothing natural about wilderness. It is in fact a colonial imposition related to Aboriginal dispossession,” says Thorpe.

“There is nothing natural about wilderness. It is in fact a colonial imposition related to Aboriginal dispossession,” says Thorpe.
The way teachers talk about obesity can have major repercussions for those students who don’t fit within society’s norms.

She first got to know the area as a 15-year-old on a canoe trip; she was taught about the local habitat but heard nothing of the Indigenous people who just one year earlier had lost their appeal to the Supreme Court. “Such knowledge might have led us to be allies in Indigenous struggles for land and recognition rather than leading us to care about a mythical uninhabited wilderness and to remain complicit in colonial relationships,” she says.

It was also here that she first witnessed the wasteland left behind by the controversial logging practice of clear cutting, something that had been happening in the area for many years but had typically been hidden from tourists. “It was completely heartbreaking…it just looked like a ravaged industrial landscape,” she says. “The trip was really important to me in terms of forming an environmental consciousness. It helped me realize how much I loved the land.”

With a PhD in environmental studies, a postdoc in history, and a job as assistant professor in gender and women’s studies (she and McPhail joined the U of M last year) Thorpe says her résumé may seem eclectic but she feels that she’s been doing the same thing the entire time: taking stories and trying to understand how they shape our lives, not unlike what her parents, both high school English teachers, encouraged her to do by reading avidly at the family cottage on Lake Simcoe north of Toronto. The stories she focuses on are the ones “that don’t get heard.” Among them: the little known past of the Mi’kmaw in Newfoundland and Labrador. It wasn’t until September 2011 that the Government of Canada recognized the Newfoundland Mi’kmaw Qalipu band, allowing its enrolled members to be considered Status Indians. For years, locals belonging to this Indigenous group would hide their heritage even from their children. Heavily discriminated against, they struggled to get work. “It’s really contentious. When they started enrollment they thought it would be less than 10,000 people. Now upwards of 100,000 people are tracing their ancestry and finding Mi’kmaw roots,” says Thorpe. “A lot of people are seeking status to know their roots and themselves.”

But critics say people are enrolling only because they’re after quick cash. “It’s a live issue in the present. It’s a good time to look at the past,” says Thorpe. With a recent grant from the Social Sciences and Humanities Research Council, she’ll dive into archival materials and oral histories to better understand past relationships between Aboriginal peoples, the non-Aboriginal community and the land, as well as the consequences today.

McPhail too has research interests in Newfoundland and Labrador, a province where the pair once lived and home to some of the country’s highest obesity rates. The most recent research on the topic shows more than 30 per cent of the population in Atlantic Canada are estimated to be obese.

McPhail wonders how obesity concerns are changing the traditional fare of a population known for its pickled, preserved, canned and deep-fried foods. So far she’s discovered locals are adding a healthier spin to their cultural mainstays like skipping the salt beef on Sunday dinner. “The reason this is a significant finding is because it’s thought that Newfoundlander has high rates of obesity because they don’t know how to eat healthy. Populations with high rates of obesity—including working-class people, racialized people, First Nations people, rural people—are often imagined as unknowledgeable, uneducated, or ‘backward’ in their eating practices. My research, and others’ research as well, is starting to show that this is not that case, that people try to eat healthy the best they can, making the best of their circumstances.”

Described by Thorpe as “quietly ambitious,” McPhail isn’t shy about challenging preconceived notions. She does this as a researcher and as a parent. Gender inequities are never far from her mind. “One thing I find really disturbing right now is the way girls are expected to be super, super feminine and everything is pink and ballet and princess,” she says. “I don’t remember that being so prevalent as a kid in the 70s and 80s. We could have short hair and not be called a boy. We could wear brown.”

McPhail and Thorpe don’t want the choices available to their daughter (or son) to be limited by gender. There are job options beyond princess and ballet dancer, they remind Willa.

And there are healthy bodies of all sizes. McPhail hopes her research into the stigma surrounding the scale will find its way into classrooms like Willa’s and Leo’s. The way teachers talk about obesity can have major repercussions for those students who don’t fit within society’s norms. “There is a lot of bullying of kids who are big, as well as of queer and racialized kids—many kids who are considered different. All the studies show, and my personal experience shows, that bullying is really traumatic,” she says. It changes how kids think about themselves and shapes them as adults.

“When we do things like implement anti-obesity programming in schools, we communicate the message that being obese is bad and being big is bad and that that kid made the wrong choice and is somehow also bad. This feeds into bullying and shaming,” McPhail says. She admits she has prepared far in advance for the day one of her kids comes home with an assigned project on obesity.

“I’ve already started this dialogue in my mind with the teacher,” she says with a chuckle.
In the spring of 1986 the daycare centre would have been filled with the cheerful chaos of little kids: the giggles and tears, the big lessons and small triumphs.

A few short weeks later the building would sit empty, the children shuttled away from their town of 45,000 to escape dangerous radiation spewing from an exploded reactor at the nearby Chernobyl Nuclear Power Station where many of their parents worked.

Twenty-seven years after the historic blast in the former Soviet Union, questions persist: Why did the government wait 36 hours to sound the alarm bell? How many more kids developed thyroid cancer as a result? How many deaths and birth defects in the years that followed can be attributed to radiation exposure?

Within this grim and abandoned place, artist and photographer David McMillan has found light, and even beauty.

An image hanging on the wall in his Winnipeg living room shows a careful composition, and an artful interplay of colour, shape and texture. Look closer and you’ll see it’s the floor of the daycare in Pripyat—a town built for the nuclear plant’s employees—showing the wear of time and neglect, and the colourful natural processes that have taken over. There are the discarded shoes of toddlers and the rich green moss that thrives in this now wild space (photo below).

The cities and villages within the 30-kilometre exclusion zone around the reactor remain ghost towns, save for the workers who maintain what’s left of the power station to keep it intact. On 15-day shifts to minimize exposure, they’re building a new cover to keep further radiation from being released.

“The exclusion zone is a remarkable and surprising place, not dead and static as one would expect but full of growth and change,” says David, who retired last year after teaching photography at the U of M for more than three decades.

Abandoned buildings left to the elements are being taken over by Mother Nature and verge on collapse. Residents were evacuated with few belongings; experts say the region won’t be back to normal for at least another century. David’s images capture these stories and others, like a basketball court transformed into a forest and the ceiling above an indoor swimming pool growing stalactites.

Since 1994, David has gone to the area 17 times, making thousands of exposures. He has shown his work worldwide, from Finland to Australia and Iceland to China. One attendee, a Russian scientist, suggested his images be less beautiful; perhaps they’d be better in grainy black and white. The man explained he lost his friend to the tragedy, having been exposed to deadly doses of radiation while testing water in the danger zone. “He thought the
photographs estheticized something that is dreadful,” David says. The Scottish native admits he doesn’t get much out of photographing the harmonious scenery and stone cottages in his homeland. In addition to Pripyat, David is drawn to places like West Virginia where industry interrupts nature. “It’s a beautiful landscape but dismal with all the factories and mining. It’s kind of a mess, the things people have done, which seems to be what I gravitate to.”

He got interested in going to the site of the Chernobyl disaster after reading the article Journey through a doomed land; Exploring Chernobyl’s still-deadly ruins in Harper’s magazine eight years after the explosion, which was caused by a mismanaged experiment to test cooling capabilities. There, David knew he would find dramatic examples of the “tension between nature and culture” he craved. “It just sounded really fascinating,” he says. “It was a July issue and I was there by October.”

The images borne from his adventures show strength and renewal, says his wife, U of M education professor Barbara McMillian. “I’m so intrigued by the resilience of the natural world even in an environment like that,” she says, noting the different plant material, fungi and wildlife David has seen in several of the abandoned buildings. “There is just so much life in something that from most people’s perspective would just be deteriorating.”

It’s no surprise Barbara picks up on that resiliency. Her professional work focuses on the Inuit in Nunavut who are trying to hold on to their traditions as the Far North becomes increasingly influenced by the South. Like the residents who lived near the Chernobyl plant, the Inuit are grappling with a deep loss not of their making. “What happened in Chernobyl is that everything was lost through human error. And in Nunavut what they’re worried about losing is not a consequence of the Inuit people themselves—it’s climate change. It’s the influx of so many people that think that Nunavut is rich in reserves of natural resources,” she says.

Increasingly, global warming is melting sea ice in the Arctic, creating more open water and easier navigation routes for industry. This new landscape will bring more jobs to the region, jobs Barbara wants to see go to locals. Her research goal is to help reverse Nunavut’s startlingly low high school graduation rate. Only 30 per cent of Nunavut students get their diploma; some drop out even before completing middle school.

How is she tackling a 70 per cent drop-out rate? By trying to get students more interested in what’s being taught in their classrooms. Barbara insists these kids need to learn about belugas and the tundra before they learn about tigers and the jungle. She’s helping to develop the science curriculum to make it more relevant to their reality. Because of a shortage of local teachers, especially at
the high school level, you’ll find mostly southerners who neither speak Inuktitut nor teach in ways that incorporate the Inuit culture. And the turnover rate is high, given most of them stay only long enough for their northern salary to pay off their student loans, says Barbara, who is an associate professor in curriculum, teaching and learning.

She recalls one high school teacher doing lessons about earth materials with rocks he brought from Nunavut. “It doesn’t make sense to me. When most of the students probably won’t leave Nunavut why wouldn’t you help them become more familiar with their place?” Doing so is not only more engaging but it encourages a sustainable way of thinking. “If you know your place well, you appreciate it better and all that’s been written on sustainability suggests that you have to really inhabit a place to care for a place, you can’t just live in it.”

As part of a research team that received a three-year Social Sciences and Humanities Research Council grant, she’ll soon return to the classrooms of the North to co-teach. In Arviat and Igloolik, she’ll also meet with elders to get their take on what did and didn’t work for them as students, and to hear their ancestral stories. Barbara will then continue to build science units rooted in these traditions and share them with current and future teachers. “I hope to see some kind of transformation in how they work with the students,” she says.

When learning about how sound travels, Nunavut kids now hear how hunters stand perfectly still atop the ice, knowing sounds are easily transmitted to the water and seals below. When Barbara taught this lesson to a Grade 3 class, a quiet boy piped up, thrilled to share his experiences hunting with his stepdad. “It was just exuberance. He was so excited to be talking and having something to say,” she recalls.

Barbara has an affinity for the Inuit culture. Relatives would travel to Alaska when she was a child and bring her back exotic toys and books. “I just thought this was so wonderful to learn about a culture different than my own.”

Barbara’s varied interests have meant a varied career path. Her first degree was in fine art followed by an honours degree in botany, a master’s in mycology, and a PhD in education. Barbara pursued the latter because she was underwhelmed by the science education her and David’s two grown sons received as children. “They may have learned science facts, but they had no idea why scientists do what they do or think the way they think.”

Illinois-born, she and David met at a wedding in Wisconsin (Barbara’s sister married David’s best friend) and they’ll celebrate their 43rd anniversary this summer. “David has always been very positive about anything that I have done, which you can probably see by the kind of person he is. He has just been so encouraging.”

Barbara has an equally authentic take on her research. “I don’t want anyone to think that I pretend to know more than they do. And coming from the South, I don’t want to be perceived as a researcher who gets something out of a study but doesn’t leave very much, if anything, for the community,” she explains.

“I’m there hoping that students will choose to finish school so they will have more options available to them as their life becomes more and more influenced by a culture their parents and grandparents didn’t live in.”

Increasingly, global warming is melting sea ice in the Arctic, creating more open water and easier navigation routes for industry.
ON THE HORIZON

2013-14

COLLABORATIVE HEALTH RESEARCH
UNIVERSITY OF MANITOBA/CIHR CAFÉ SCIENTIFIQUE

Interested in talking and learning more about different health topics and related research? Café Scientifique brings together experts with non-researchers (you, me, neighbours, friends) in a relaxed atmosphere to talk about their research and the questions it raises. Come and join the discussion!

HELPING PARENTS UNDERSTAND & HELP THE ANXIOUS CHILD OR YOUTH
With Leanne Mak, John Walker, Roberta Woodgate and Carolyn Peters
September 17, 2013 • 7:00 pm • McNally Robinson Booksellers

At any age level about one out of 10 children and youth are experiencing a problem with anxiety that causes significant distress and may interfere with the enjoyment of school, activities with friends and family. Anxiety in childhood is a risk factor for problems with anxiety and mood as an adult. Understanding the many voices of those affected by this problem—children, youth, parents—can help find better approaches to anxiety management. Innovative research using new technological tools and ‘listening’ strategies are underway to assist children, youth, and their parents.

THE BATTLE AGAINST THE FLU VIRUS
With Kevin Coombs, Joanne Embree, Gary Kobinger, Fred Aoki and Greg Hammond
October 24, 2013 • 7:00 pm • McNally Robinson Booksellers

Every year many Canadians are afflicted with the seasonal influenza (flu) resulting in economic loss, a substantial number of hospitalizations and deaths. Join our research experts for the latest on the fight against the flu, from diagnosis to prevention and the development of a better flu vaccine.

PRACTICAL SOLUTIONS FOR DEVELOPMENTAL DISABILITIES
With Joyce Douglas, Janine Montgomery, Javier Virués-Ortega, CT Yu and Angela Cornick
November 19, 2013 • 7:00 pm • McNally Robinson Booksellers

Moving research knowledge from the researcher to the hands of those who need that information can make a real difference in the lives of those who have developmental disabilities. The knowledge exchange that occurs when parents, caregivers and teachers are involved in the research process is crucial to finding practical solutions to things like difficult behavior in the classroom, determining choice-making preferences, and teacher training. Join our expert panelists to learn about their research partnership and the findings that can make a difference.

HEART FAILURE: PREVENTION, TREATMENT & TRANSPLANTATION
A Perspective from Medical Researchers of the Future, our Graduate Students
With Rushita Bagchi, Stephanie Caliguri, Matt Hanson, Chris White, Matt Zeglinski, and Ian Dixon
January 13, 2014 • 7:00 pm • McNally Robinson Booksellers

One in five Canadians may unknowingly have high blood pressure (hypertension), the leading cause of death in Canada. About one in 500 people will have a heart attack this year, with survival rates at about 50 per cent 10 years later. The last hope for people with heart failure is a heart transplant, which is limited by a critical shortage of donor organs; however, only one third of available donor hearts are transplanted. These are some of the research areas that five U of M physiology graduate students are exploring. Come meet Canada’s next generation of medical researchers and learn about strategies using functional foods that help lower blood pressure, recent advances in modern medicine that can affect heart attack survival rates, and how they’re finding better ways to preserve the donor heart and increase the number of heart transplantations as a result.

FETAL ALCOHOL SPECTRUM DISORDER AND A NEED FOR A 21ST CENTURY HUMAN RIGHTS RESPONSE
With Albert Chudley, Brenda Elias, the Fetal Alcohol Prevention Program, and Karen Busby
February 10, 2014 • 7:00 pm • McNally Robinson Booksellers

Throughout the world, fetal alcohol spectrum disorder (FASD) is the only disability of its type that is considered 100 per cent preventable. While promising prevention practices have been developed and implemented, the condition still occurs with cases often diagnosed late. Efforts are now underway to diagnose this condition early and more easily. In this Café we explore—through the lens of research—clinical care and advocacy; and the story behind why we need to address this lifelong disability medically and socially in a way that protects the rights of women, men, children, families and communities affected.
The title Distinguished Professor is conferred by the University of Manitoba on academic staff members who have demonstrated outstanding distinction in research, scholarship, creative endeavours, professional service and teaching. Up to three people may receive this honour each year, and not more than 20 professors may hold the title at one time. Distinguished Professors are appointed by the Board of Governors on the recommendation of a Distinguished Professor Selection Committee, chaired by the president and vice-chancellor.

The following academic staff members currently hold the title of Distinguished Professor:

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WELCOME TO WINNIPEG: POPULATION ONE MILLION

WEDNESDAY, SEPTEMBER 25
Join our panelists to discuss how Winnipeg will reach a population of one million, when it will happen and what it will mean for economic and community development, health and safety.

Robert B. Schultz Theatre, St. John’s College, Fort Garry Campus
Reception in Galleria – 6:30 p.m. to 7:00 p.m.
Panel Discussion – 7:00 p.m. to 8:30 p.m.

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Rick Linden – Professor, Sociology, Faculty of Arts
Jim Carr – President and CEO, Business Council of Manitoba