The Silence of Solitary Confinement

INSIDE:

- PREMIER GREG SELINGER
- A MATERIAL WORLD
- LET EVERYONE BE HEARD
Some would say that achieving greatness is a lofty goal, one that is not easily realized. I believe that nothing worth achieving comes easily and am personally challenged by problems labeled ‘insurmountable’ and ‘impossible.’ This is not unique: it is a quality that researchers around the world embrace and exploit on a daily basis. It defines us.

That challenging spirit is something I see all around me in my colleagues at the University of Manitoba. We have defined ourselves, in our award-winning marketing campaign, as visionaries, trailblazers, collaborators, and challengers.

Researchers in all disciplines ask many questions, some of them difficult to pose, with answers that are often unexpected and sometimes unpopular. That doesn’t stop us from seeking new knowledge and new ways of overcoming the challenges, but rather gives us the opportunity to explore innovative strategies.

One such innovator is textile scientist Wen Zhong. She is seeking answers to the difficult problem of wound care for the elderly and those with diabetes. Law professor Debra Parkes is a challenger. The subject of our cover feature in this issue is the research she does to shed light on the often dark subject of the conditions in women’s prisons in Canada. Disability studies professor Deborah Stienstra is a collaborator who works with a team of researchers identifying the issues for disabled people near the end of their lives.

Step into the research life of the innovators, collaborators, challengers and visionaries at the University of Manitoba.

—Digvir S. Jayas, PhD, PEng, PAg, FRSC
THE SILENCE OF SOLITARY CONFINEMENT

Law professor Debra Parkes opens the books on misuse of solitary confinement, seeks greater oversight of imprisonment.
IT MAY SEEM A BIT IDIOSYNCRATIC FOR A CANADIAN UNIVERSITY TO BUILD A SPECIAL EXPERIMENTAL FACILITY FOR MAKING ICE (and hockey is not involved), but this research laboratory may be the key to helping scientists better understand climate change.

The Sea-ice Environmental Research Facility (SERF) at the U of M marked its grand opening on Feb. 8. The $1.38 million facility is the first of its kind in Canada and boasts a large, outdoor, saltwater pond equipped with a suite of state-of-the-art analytical instruments. Researchers will watch and monitor the formation of sea ice on the water for comparison with what occurs in the high Arctic.

By “growing” sea ice under controlled conditions, scientists will better understand how sea ice forms and melts on polar oceans, and gain insight into the processes that regulate the exchange of molecules between the ocean and atmosphere.

The main feature of the SERF facility is an outdoor pool: 60 feet long, 30 feet wide and 8 feet deep. It is equipped with a movable roof to control snow cover, and various sensors and instruments to allow real-time monitoring.

The SERF is funded by the Canada Foundation for Innovation, the Manitoba Research and Innovation Fund, and the university. The project is led by Feiyue Wang, Tim Papakyriakou, David Barber (Canada Research Chair in Arctic System Science) and Søren Rysgaard (Canada Excellence Research Chair in Arctic Geomicrobiology and Climate Change) of the Centre for Earth Observation Science in the Clayton H. Riddell Faculty of Environment, Earth, and Resources.

SSHRC also provided funding for two exciting Partnership Development projects: the exploration of long-standing human rights issues facing people who live in Vancouver’s Downtown Eastside co-led by Jeffrey Masuda (environment and geography) and Sonia Bookman (sociology); and a project that will provide a better understanding of how the physical expression of emotion—called affect—shapes how we interpret things led by Arlene Young (English, film and theatre) with Brenda Austin-Smith (film studies) and Jason Leboe-McGowan (psychology).

SSHRC Partnership Grants and Partnership Development Grants support research partnerships among the academic, private, public and not-for-profit sectors.
EXPERIENCE RESEARCH

THANKS TO A NEW INITIATIVE, DOZENS OF UNDERGRADUATE STUDENTS STAYED ON CAMPUS THIS SUMMER TO EXPERIENCE LIFE IN RESEARCH LABS.

The Office of the Vice-President (Research and International) provided 80 undergraduate students with awards worth $6,000 each over a four-month period. This is the first time in Canada that such an award has been made available to undergraduate students across all disciplines, at a post-secondary institution.

The University of Manitoba Undergraduate Research Awards were awarded in the spring and went to qualified, full-time undergraduate students in all areas of study. In order to be eligible, students were required to have a minimum GPA of 3.0, complete an application form outlining their research plans for the summer and explain how the research scholarship fit with their long-term career aspirations.

They were required to interview two researchers, write a summary of what each is doing, and then indicate which of them they wished to have a summer placement with and why. Award recipients will present the results of their work at the annual U of M undergraduate research poster competition on November 1, 2012.

AGRICULTURE CONTRIBUTES ABOUT 10 PER CENT OF THE GLOBAL GREENHOUSE GAS EMISSIONS THAT CAUSE CLIMATE WARMING. These gases also result in losses of energy from animals and loss of nitrogen from soil; so their reduction has both environmental and economic benefits. Soil science professor Brian Amiro and his team are on a quest to find the answers to enhance our understanding of how these gases are transferred and the best ways to mitigate them.

Amiro’s team received nearly $3 million from the Agricultural Greenhouse Gases Program (AGGP), will focus their research in three priority areas: converting crops from perennial to annual grasslands, adopting long-term crop rotations of 10 years, and allowing cattle to graze during the winter rather than keeping them in a confined area.

“This project will help the agriculture industry improve its environmental performance while benefiting our economy and ensuring Canadian farmers stay competitive in the global marketplace,” said the Honourable Vic Toews, Minister of Public Safety and Regional Minister for Manitoba, who announced the investment on campus in December.

Results of this research will lead to the development of new beneficial management practices. Farmers who take up these new practices will save on feed costs because two to 12 per cent of the energy of feed consumed by livestock is lost as a greenhouse gas.

AGGP is a $27-million initiative focused on developing on-farm greenhouse gas mitigation technologies. The program provides funding Canada-wide for researchers aiming to provide real solutions for farmers.

REAL SOLUTIONS FOR FARMERS

SPONOR ALERT!

CHECK OUT THE WINTER ISSUE OF RESEARCHLIFE FOR FEATURE STORIES ON THREE UNDERGRADUATE RESEARCH AWARD RECIPIENTS AND THEIR RESEARCH MENTORS, AS WELL AS THEMED CONTENT HIGHLIGHTING UNDERGRADUATE RESEARCH AT THE U OF M.
KUDOS

OFF THE CHARTS

Pediatricians measure infant growth on a percentile chart. By that measure, pediatric researcher Terry Klassen’s recent achievements would place him off the charts.

Klassen is a pediatric emergency physician, a clinician scientist and one of Canada’s top pediatric researchers. He is also director of research for the Manitoba Institute of Child Health, a University of Manitoba research partner. In addition, he is associate dean (academic) in the Faculty of Medicine, and a professor and director of research in the Department of Pediatrics and Child Health.

In 2011, Klassen and his colleagues received the Top Achievements in Health Research Award from the Canadian Institutes of Health Research (CIHR) and the Canadian Medical Association Journal in recognition of their work in improving health outcomes of acutely ill and injured children visiting pediatric emergency departments across Canada.

This distinction acknowledges the big impact made by Klassen and his colleagues at Pediatric Emergency Research of Canada in making key advances in three common childhood ailments: croup, bronchiolitis, and mild head injuries. Their most comprehensive achievement has influenced how croup is treated worldwide.

To add to Klassen’s many roles, the Honourable Leona Aglukkaq, Minister of Health, announced on June 4, 2012, his appointment to the Governing Council of CIHR for a three-year term. CIHR is the Government of Canada’s health research investment agency, with a mission to create new scientific knowledge and to enable its translation into improved health, more effective health services and products, and a strengthened Canadian healthcare system. Composed of 13 institutes, CIHR provides leadership and support to more than 14,000 health researchers and trainees across Canada.

TRENDSETTER & TRAILBLAZER

Professor Wanda Wuttunee (native studies), the first Aboriginal woman in Canada to earn her MBA in 1988, was named one of Canada’s Most Powerful Women: Top 100 by the Women’s Executive Network (WXN).

“Dr. Wuttunee is a true trailblazer who has made a real difference in the lives of the young women she has served as a mentor,” said David Barnard, president and vice-chancellor of the University of Manitoba. “Her vision helped us elevate our Native Studies program, which will have a long-lasting impact on current and future students.”

Wuttunee is an internationally recognized leader in the field of Aboriginal economic development. Her work focuses on community development perspectives and, in particular, women’s contributions. She examines the strengths of the community and the gifts that Aboriginal people bring to the business table.

Wuttunee, who is director of the Department of Aboriginal Business Education Partners, also holds a law degree and a Bachelor of Commerce degree from the University of Calgary, and completed an interdisciplinary PhD in 2001 at the University of Manitoba. She was recognized in 2009 with a Women of Distinction award from the YM-YWCA in the Education and Training category for her outstanding achievements. She is Cree and a member of the Red Pheasant Cree Nation, Saskatchewan.

ENGINEERING BY DESIGN

The University of Manitoba has launched a new approach to educating engineers of today, one that meets the ever-changing demands of the technologically driven world.

Douglas Ruth has been awarded a Chair in Design Engineering ($1 million over five years) by the Natural Sciences and Engineering Research Council of Canada (NSERC). The newly appointed associate dean (design education) is a graduate of the Faculty of Engineering, holding a B.Sc. in mechanical engineering, and also served as its dean for 11 years.

“Dr. Ruth’s strong record of experience will truly take University of Manitoba’s unique program to the next level,” said Suzanne Fortier, NSERC president. “His vision to create unique courses that expose students to new developments and to broaden collaboration with industrial partners will create new research and training opportunities for students in this exciting field.”

Ruth will be working toward four main objectives: discovery-based learning in all preliminary year engineering science courses, mechanisms to expand design offerings throughout the curriculum, an inter-departmental capstone project, and the establishment of the Centre for Professional Practice and Engineering Education.

This new centre will address the need for engineers to acquire professional expertise in areas such as law and contracts, economics and project management, and communications and marketing. The goal of the NSERC Chairs in Design Engineering program is to expand the level and quality of design engineering education in Canada.
Rh Award recipients celebrated for ‘GLOBAL IMPACT’

On April 12, President and Vice-Chancellor David Barnard officially congratulated the 2011 recipients of the annual Rh awards. Their groundbreaking discoveries, he said, were an example of the “great people at the University of Manitoba who do incredible things with a global impact.”

The Rh Award recipients in all seven categories (see page 7) were present on stage, along with Jan Oleszkiewicz, the distinguished professor of civil engineering who received the Dr. John M. Bowman Memorial Winnipeg Rh Institute Foundation Award for outstanding research by a senior university faculty member.

Environmental engineer Jan Oleszkiewicz thanked his teachers for showing him “the beauty in waste treatment.” His remarks were somewhat tongue-in-cheek, but Oleszkiewicz is passionate about his work.

The world-renowned expert in environmental engineering has developed groundbreaking technologies and research that have changed the way wastewater treatment plants are designed around the globe, including here in Winnipeg.

He started his lecture, entitled “Cleaning up the Mess: Managing Waste,” with a story. Since his childhood in Poland, he said, when he struck a deal with his father to move cow manure into the garden — for a fee, on the condition he wouldn’t be seen by his friends — he understood the potential value in waste.

In Manitoba, it’s well-known that improper dispersement of phosphorous causes problems with large inland bodies of water (lakes become bogs); less known is that phosphorous is necessary to life, and we are losing it irretrievably in displacing it carelessly.

Rather, suggested Oleszkiewicz, we must make use of both aerobic (oxygen-dependent) and more typical anaerobic processes in order to capture and utilize the useful elements and energy generated by these processes — rather than simply throwing them “away,” or sending what remains to landfills or allowing the resulting sludge to run off. In other words, the waste we generate is not simply waste; we need to recycle and reuse rather than seeing it as waste.

It seems we have workable systems, but mostly not ones that are efficient enough: they are too large, and they don’t recycle as efficiently as they could.

Most traditional waste-treatment systems remove only carbon; there is no effort at nitrogen or phosphorous removal. The gasses generated by this type of waste treatment should be used for energy, which, as he pointed out, is considered the “holy grail of waste management.”

New technologies such as Biological Nutrient Removal (BNR) plants, in which naturally-occurring microbes are used to remove nitrogen and phosphorus from waste water to become by-products that can be re-used as fertilizer, improves things, says Oleszkiewicz, but most are over-designed and are too large for the populations they are meant to serve.

Oleszkiewicz has worked extensively with James Barnard, the father of the BNR system, to improve efficiencies. Oleszkiewicz specializes in bio-solids and biological wastewater treatment with emphasis on their inter-relationship.

Oleszkiewicz has developed processes for the oxygen-free or anaerobic digestion of waste and sludge, providing problem-solving technology that has since been implemented across Canada. He was first to show the feasibility of removing nitrogen from wastewater in conditions close to freezing.

He has also discovered: new methods involving nitrogen removal which will lead to smaller reactor sizes; a combination of processes that transform waste-water solids into high-quality bio-solids for use in agriculture; and an application that protects membrane bioreactors while removing phosphorus from the effluent.

He reviews engineering projects or infrastructure master plans for cities and companies on multiple continents, and serves as scientific advisor for numerous international engineering companies.

Closer to home, his expertise prompted The Lake Winnipeg Stewardship Board and Environment Canada to award him with a series of grants aimed at reducing the phosphorus load to Lake Winnipeg.

The Canadian Society for Civil Engineers awarded Oleszkiewicz the Albert E. Berry Medal, the highest Canadian recognition for a wastewater treatment scientist and engineer. He is only the second Canadian to receive the Water Environment Federation’s prestigious Gordon M. Fair Medal for Excellence in Engineering Education.

A distinguished professor in the department of civil engineering, Oleszkiewicz joined the U of M nearly three decades ago.
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 to support his or her 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**

Jun Cai (electrical and computer engineering) has made major contributions in radio resource management, an important area of wireless communications. His research aims to optimize wireless network performance by overcoming challenges inherent in wireless systems and channels. Cai operates a laboratory that is capable of emulating a comprehensive telecommunication system consisting of both wired and wireless networks, allowing him to evaluate newly proposed network management methods and algorithms.

**CREATIVE WORKS**

Neil McArthur (philosophy) is a promising filmmaker whose work has been screened at Canada’s premiere film festivals. His filmography includes two award-winning documentaries about the Alberta oil sands development and its impact on nearby Aboriginal communities. Having completed his PhD in philosophy before delving into film, McArthur integrates his philosophical interests with his artistic pursuits.

**HEALTH SCIENCES**

Robert Schroth (pediatrics and child health, preventive dental science) is committed to improving the oral health of children in Manitoba. His research was the first to identify the link between tooth decay in kids and the prenatal nutrition of their mothers. He is currently investigating the relationship between vitamin D deficiency and oral health in young children.

**HUMANITIES**

Christopher Frank (history) is an historian of modern Britain whose research focuses on the social, legal and labour history of the nineteenth century. He has contributed to our understanding of class relations, legal development and politics of this tumultuous period of England’s early industrial capitalist movement. His research has contributed greatly to the history of labour law and criminal law during this era in England.

**INTERDISCIPLINARY STUDIES**

Song Liu (textile sciences) is developing a new generation of multi-functional textile materials for medical uses. These textiles can be used for vascular grafts and wound dressings to facilitate healing and prevent infection. This groundbreaking technology also means dressings would need to be changed less frequently, reducing pain for patients and costs for hospitals. Liu has three patents pending; his expertise is sought after by healthcare facilities and multinational companies.

**NATURAL SCIENCES**

Michael Gericke (physics and astronomy) is an emerging leader in experimental nuclear and particle physics. He develops new techniques and highly sophisticated experiments to predict and describe the basic building blocks of matter and their interactions. His research looks for new physics, seeking to explain some of the observed phenomena which cannot be accounted for under the currently accepted standard model. Experiments of this type drive the development or enhancement of technologies, including faster electronics.

**SOCIAL SCIENCES**

Jessica Cameron (psychology) is interested in how personality influences relationships and how relationships, in turn, influence personality. She focuses on understanding what factors affect the initiation of new interpersonal relationships and the processes that sustain or undermine ongoing ones. Her current research investigates the effects of—and ways to measure—insecurity in relationships. Her innovative work has appeared in the top academic journals in her field, including the *Journal of Personality and Social Psychology*. 
The Manitoba Institute for Materials (MIM) was established by the University of Manitoba in November 2009, under the direction of Michael Freund, Canada Research Chair in Conducting Polymers and Electronic Materials. MIM facilitates and enhances basic and applied materials science research at the University of Manitoba and in the prairie region. The institute provides mechanisms to explicitly foster networking and collaboration between researchers with different backgrounds and from diverse disciplines, as well as to maintain, build and enhance the research capabilities of the region’s large number of materials scientists.

MIM serves to stimulate the research and training environment within the university by organizing a regular seminar series and by bringing in visiting scientists for discussions, seminars, and longer term stays. The institute also provides a platform for leveraging grant applications of its members for equipment and personnel to enhance the research in the region.

Multidisciplinary research teams (nearly 50 members in total) hold faculty appointments across the Faculties of Agricultural and Food Sciences; Clayton H. Riddell Faculty of Environment, Earth, and Resources; Engineering; Human Ecology; and Science. The teams trained approximately 60 MSc and 50 PhD students as well as 20 postdoctoral scholars over the past three years.

Research areas range from electronic materials to spin glasses, nanostructures to polymers and soft biomaterials, complex structured metamaterials to superalloys, composite material systems and intelligent sensing to high-performance computing materials research, magnetic materials to photonic and phononic microsystems, and from MEMS and NEMS to minerals.

“The focus areas are dynamic and are evolving with the rapidly moving fields of materials science and engineering,” says Freund.

MIM membership is extremely productive, averaging over 150 publications and approximately $4.5 million in funding per year. They have attracted and maintained over $30 million worth of world-class research infrastructure in areas including microscopy, spectroscopy and diffraction.

The institute organizes the annual Manitoba Materials Conference, an event that highlights undergraduate and graduate student, postdoctoral fellows and other academic research in fields related to materials science and technology.

This year some of the research highlighted at the conference included high-performance computing, complex natural systems and high-temperature aerospace materials. Representatives from related partners and industry participated as presenters at the conference: Vector Corosion Technologies, National Microbiology Lab, Composite Innovation Centre and Manitoba Hydro. The conference was supported by NSERC Prairies Regional Office, EnviroTREC, the U of M Graduate Student Association, and Manitoba Hydro.

To learn more about the Manitoba Institute for Materials visit <<materials.umanitoba.ca>>
Greg Selinger became Manitoba’s 21st Premier on Oct. 19, 2009, and led the NDP to a fourth straight majority two years later. He was first elected in 1999 as Member of the Legislative Assembly for St. Boniface and is now serving those constituents for a fourth term. He was Manitoba’s Minister of Finance from 1999 to 2009. Fluently bilingual, Premier Selinger has held responsibility for Francophone Affairs since he was first elected to the Legislature.
To me, research means a systematic investigation of a particular subject that results in knowledge we can use to address real-life problems and issues. In a society as complex and scientifically advanced as today’s Manitoba, research is an absolutely essential tool for governments to make policy choices that will benefit society and deliver value for the taxpayer.

I have always been a curious person, always wanted to understand our world and how we interact with it and with each other. During my time as an elected official, I have always made a point of reading the best available research and policy analysis on a given issue. I like to ask “what are the facts in play here, what does the research tell us?”

Our young people benefit in countless ways from research. In Manitoba there is a strong connection, for example, from research to our Healthy Child program, where we look at what we do with children and families and whether a given initiative actually helps them thrive. Research gives us that vital insight into outcomes, which drive future policy decisions.

For the youngest learners, research has shown that technology can assist kids who don’t learn as well with traditional methods, and especially those who live in remote areas, while adults are going to need an ever greater degree of advanced knowledge and skills to succeed in the job market. Research is also important to reach the dreamer in all young people; thanks to a recent grant to the U of M’s Professor Haskel Greenfield, a young Master’s student from, let’s say Virden, can work on a first-rate archaeological dig in Israel, which is just marvelous.

As a government, we take a multi-faceted approach; beyond providing reliable long-term support to post-secondary institutions, we have the Manitoba Innovation Council, which is a group of academic and business leaders who keep our government informed on the latest trends in research and knowledge transfer.

We prefer to take a partnership role in promising initiatives; the Province of Manitoba invested $1 million to work with Mitsubishi and Winnipeg’s own New Flyer to develop a transit bus that is entirely electrically-powered. The economic and environmental benefits could be enormous for Manitoba and for the world. Our government is firmly committed to research, which is why the federal government’s recent decisions, like the move to close the Experimental Lakes Area, are so disappointing. That’s a great loss for Manitoba, and for Canada.

Research is the basic building block for making our province a better place to live; think of how much our rural producers benefit from innovations in cultivation and husbandry. All Canadians benefit, of course, from breakthroughs in healthcare, all of which start with basic science. But research is also more than technology and economics; research can make our social fabric stronger and more equitable; another U of M Professor, John Loxley, is leading a team that was also awarded a highly-prestigious multi-year grant. They are studying the challenges of inner-city and Aboriginal poverty.

Better healthcare, better food, better education, better access to services, safer roads, cleaner water, just about everything you do evolves through the application of knowledge. Post-secondary institutions have a key role to play in our knowledge economy. The challenge is building the bridges from those generating knowledge to those who need to use it.
Law professor Debra Parkes is standing behind her desk, reaching her arms out to her sides to gauge the width of her third-floor office. She scans the bones of the room before determining: “You could probably fit three of those cells in here.”

In an instant, she’s made real the reality of inmates living in solitary confinement in Canadian jails, those who spend 23 hours of their day alone inside a room with the square footage of a walk-in closet. “Part of my research is shedding some light, opening a small window on this part of society that we tend to forget about,” Parkes says. “And then requiring that we ask some hard questions of ourselves in terms of what we’re doing; is it working? And if not, what can we do differently?”

From her office with the wall-to-wall window, the one that frames the trees by the river just right, she is looking at why—and how often—offenders who are already removed from the outside world are further isolated once behind bars. With research funding from the Social Sciences and Humanities Research Council of Canada, Parkes filed an access to information request to acquire data from Manitoba Justice on solitary confinement at two provincial jails. Her request was denied; government officials insisted they don’t have those records readily available. One appeal and a service fee later, she had in her hands information on 134 female prisoners who were put in solitary confinement for one year, 2009, at the now defunct Portage Correctional Centre.

Parkes uncovered something surprising. The segregation cells were not always being used for their intended purpose—as a form of discipline or to protect inmates from each other or themselves—but instead became a way of handling a burgeoning prison population. “In some cases, contrary to the law, prisoners were placed in segregation for overflow, for overcrowding,” says Parkes, who is still analyzing the data and will publish her findings in a book to be released next year. “What I’m finding is...
that there is no meaningful oversight and accountability of the use of segregation."

The duration of the prisoners' stay in the cramped, basement cells at the century-old Portage la Prairie jail—described by one leading expert as among the worst she'd ever seen—ranged from one to 121 days. Parkes says her goal is to get an accurate read on what's happening behind prison walls, highlighting the human rights dimensions and potential avenues for greater oversight and accountability. "My research is not about accusing people of doing something wrong. It’s much more a systemic question. Do we have the appropriate checks and balances in place when we’re utilizing the utmost, heavy-handed tools available to us?"

Solitary confinement is intended to be used in “exceptional” circumstances but Parkes says it's being “normalized.” This misuse is particularly bothersome, she says, given that much research has shown that segregating prisoners can have deep psychological consequences.

Parkes also questions using solitary confinement for one of its common uses: to protect mentally ill inmates. "For someone who is having a serious mental health episode, segregation is the worst place they can be. They need to be getting psychiatric help," she says. Sometimes prisoners are transferred to an outside facility but often they are put in solitary confinement for the short or long term, Parkes notes.

Manitoba—like most Canadian provinces and territories—has an ombudsman office, which operates at arm’s length from government to hear complaints. Parkes obtained their records for 2009 to compare with the prison's files. The ombudsman's office does not focus exclusively on imprisonment; its mandate is "administrative fairness" in a number of areas.

This fall Parkes is headed to the United Kingdom to research an alternate model. In addition to having a prison ombudsman, the British have a chief inspector of prisons who goes into facilities—both announced and unannounced—as opposed to relying on complaints to come in. "Because sometimes complaints don’t come in and there is a need to address issues proactively," Parkes says. Issues often only become public knowledge when the media grabs hold. One such Canadian case, from the early 1990s, provided the catalyst for Parkes' research in subsequent years. CBC television news program The Fifth Estate played disturb-

134 female prisoners were put in solitary confinement in 2009, at the now defunct Portage Correctional Centre.
More than 70 per cent of prisoners in Manitoba are Aboriginal; that’s one of the highest rates in Canada.

Prisons and it better equips offenders for their eventual release. If a prison is overcrowded, full of tension and a place where staff don’t feel safe, problems cultivate.

The number of inmates in Manitoba prisons and across the country has multiplied since the introduction of mandatory sentences. Several legislative bills have gone through parliament that require judges to sentence offenders to a minimum number of years in prison for a variety of crimes, including ones involving drugs, firearms and the sexual exploitation of children. The number of crimes requiring mandatory sentences has jumped from nine in 1987, to well over 60. New laws also limit a judge’s ability to hand out conditional sentences (time served in the community).

Politicians and public opinion appear to have a tough-on-crime attitude yet research for decades has shown this approach doesn’t actually deter. This frustrates Parkes, “Unfortunately what’s going on right now is we have laws that aren’t evidence-based.” She would rather see less imprisonment and more focus on community-based sanctions and crime’s root causes including poor mental health, lack of education and poverty.

She also wants to reverse the over-representation of Aboriginal people in Manitoba’s criminal justice system. More than 70 per cent of prisoners in the prairie province are Aboriginal; that’s one of the highest rates in Canada. To address the imbalance country-wide, the Supreme Court, in a 1999 decision called R. v. Gladue, stated judges must pay closer attention to individual circumstances of Aboriginal offenders, and consider options other than incarceration. One alternative is restorative justice which has offenders repairing the harm they’ve done instead of undergoing punishment.

But since the Gladue decision, the number of Aboriginal people incarcerated in Manitoba has gone up, not down. Parkes says lawyers and judges aren’t being provided with the practical information they need to apply Gladue’s principles.

With funding from the U of M’s Social Justice and Human Rights Research Project, she and colleague David Milward are working with two law students to develop a handbook that will launch this summer, a user-friendly guide with frequently asked questions and key precedents for anyone working in the courts.

Research must have real-life impact. “We’re not trying to be so-called ivory tower experts who sit here and criticize what the criminal justice system is doing,” she says. “This (handbook) is one of the most direct ways our research is being taken up in the community.”

Parkes teaches her students to make their own dent too. Recently she and her class of law students hosted a thirtieth birthday party for the Canadian Charter of Rights and Freedoms. The event featured posters created by the law students on various unresolved Charter issues – from access to abortion to mandatory sentencing laws and the right to water on First Nations reserves.

Attached to the professor’s bulletin board above her desk—since coming to the U of M from New York 11 years ago—is a post card with the phrase: Those who have been required to memorize the world as it is will never create the world as it might be.

“Good teaching is not about simply memorizing and learning what we’ve done before. It’s really about asking questions about what world we might have. In terms of the law, it’s about asking what role does the law have in perpetuating or addressing problems?” Parkes says. “Education can be about reinforcing the status quo but good education doesn’t do that. It’s about expanding our way of thinking.”
CRITICAL ISSUES IN PEACE AND CONFLICT STUDIES: THEORY, PRACTICE, AND PEDAOGY
(Lexington Books, 2012)
Edited by Thomas Matyók (University of North Carolina Greensboro), Jessica Senehi and Sean Byrne • graduate studies and Mauro Centre for Peace and Justice

Peace and Conflict Studies (PCS) includes scholars and practitioners throughout the world working in peace studies, conflict analysis and resolution, conflict management, appropriate dispute resolution, and peace and justice studies. They come to the PCS field with a diversity of ideas, approaches, disciplinary roots, and topic areas, which speaks to the complexity, breadth, and depth needed to apply and take account of conflict dynamics and the goal of peace. Yet, a number of key concerns and dilemmas continue to challenge the field. Critical Issues in Peace and Conflict Studies: Theory, Practice, and Pedagogy, edited by Thomas Matyók, Jessica Senehi, and Sean Byrne, is a collection of essays that explores a number of these issues, providing a means by which academics, students, and practitioners can develop various methods to confront the complexity of contemporary conflicts.

Critical Issues in Peace and Conflict Studies discusses the emerging field of PCS, and suggests a framework for the future development of the field and the education of its practitioners and academics. The book has a wide audience targeting students at the undergraduate, graduate, and post-graduate levels. It also extends to those working in and leading community conflict resolution efforts as well as humanitarian aid workers.

RADICALIZED POLICING: ABORIGINAL PEOPLE’S ENCOUNTERS WITH POLICE
(Fernwood Publishing, 2012)
Elizabeth Comack • sociology

Policing is a controversial subject, generating considerable debate. One issue of concern has been “racial profiling” by police, that is, the alleged practice of targeting individuals and groups on the basis of “race.” Racialized Policing argues that the debate has been limited by its individualized frame. As well, the concentration on police relations with people of colour means that Aboriginal people’s encounters with police receive far less scrutiny. Going beyond the interpersonal level and broadening our gaze to explore how race and racism play out in institutional practices and systemic processes, this book exposes the ways in which policing is racialized.

Situating the police in their role as “reproducers of order,” Elizabeth Comack draws on the historical record and contemporary cases of Aboriginal-police relations—the shooting of J.J. Harper by a Winnipeg police officer in 1988, the “Starlight Tours” in Saskatoon, and the shooting of Matthew Dumas by a Winnipeg police officer in 2005 — as well as interviews conducted with Aboriginal people in Winnipeg’s inner-city communities to explore how race and racism play out in institutional practices and systemic processes. This book exposes the ways in which policing is racialized.

BIODCENTRISM AND MODERNISM
(Ashgate, 2011)
Edited by Oliver A.I. Botar • art history, and Isabel Wünsche (Jacobs University Bremen)

Examining the complex intersections between art and scientific approaches to the natural world, Biocentrism and Modernism reveals another side to the development of Modernism. While many historians have framed this movement as being mechanistic and “against” nature, the essays in this collection illuminate the role that nature-centric ideologies played in late-nineteenth to mid-twentieth-century Modernism.

The essays in Biocentrism and Modernism contend that it is no accident that Modernism arose at the same time as the field of modern biology. From nineteenth-century discoveries, to the emergence of the current environmentalist movement during the 1960s, artists, architects, and urban planners have responded to currents in the scientific world. Sections of the volume treat both philosophic world-views and their applications in theory, historiography, and urban design. This
collection also features specific case studies of individual artists, including Raymond Duchamp-Villon, Paul Klee, Wassily Kandinsky, and Jackson Pollock.

**MANDITOWAPOW ABORIGINAL WRITINGS FROM THE LAND OF WATER**
(Portage & Main Press, 2012)
Edited by Nugaanwewidam James Sinclair and Warren Cariou • English, film and theatre

This unique anthology of Aboriginal writings from Manitoba takes readers back through the millennia and forward to the present day. Manitowapow is a rich collection of stories, poetry, nonfiction, and speeches, that features: Historical writings, from important figures; vibrant literary works by eminent Aboriginal writers; nonfiction and political writings from contemporary Aboriginal leaders; local storytellers and keepers of knowledge from far-reaching Manitoba communities; new, vibrant voices that express the modern Aboriginal experiences; Anishinaabe, Cree, Dene, Inuit, Métis, and Sioux writers from Manitoba.

Manitowapow, is the first book in the Debwe Series. Created in the spirit of the Anishinaabe concept debwe (to speak the truth), The Debwe Series is a collection of exceptional Aboriginal writings from across Canada.

**ABOUT CANADA: DISABILITY RIGHTS**
(Fernwood Publishing, 2012)
Deborah Stienstra • Disability Studies

Through a close examination of employment, education, transportation, telecommunications and health care, About Canada: Disability Rights explores the landscape of disability rights in Canada and finds that, while important advances have been made, Canadians with disabilities still experience significant barriers in obtaining their human rights.

Using the stories and voices of people with disabilities, Deborah Stienstra argues that disability is not about “faulty” bodies that need to be fixed, but about the institutional, cultural and attitudinal reactions to certain kinds of bodies, and that neoliberal ideas of independence and individualism are at the heart of the continuing discrimination against “disabled” people. Stienstra contends that achieving disability rights is possible, but not through efforts to “fix” certain kinds of bodies. Rather it can be achieved through universal design, disability supports, social and economic supports and belonging—in short, through foundational social transformation of Canadian society.

**FUNCTIONAL FOODS AND CARDIOVASCULAR DISEASE**
(Taylor & Francis, 2012)
Mohamed H. Moghadasian and N.A. Michael Eskin • human nutritional sciences

Cardiovascular disease remains the number one killer in North America and around the world. The staggering medical costs involved in treating patients suffering from this disease demand an alternative approach to prevent or minimize its development. In Functional Foods and Cardiovascular Disease, international researchers reveal essential up-to-date information on the role that functional foods and nutraceuticals play in preventing the development of heart disease.

Highlighting the physiological benefits of a host of functional foods, the book examines:

- The pathogenesis of coronary artery disease
- Genetic methods for enhancing bioactives in foods and new techniques for extracting bioactive components for developing functional foods
- Clinical and experimental evidence of the cardiovascular benefits of fish oils and plant oils, particularly flaxseed oil
- The importance of folic acid in homocysteine metabolism and its impact on cardiovascular disease
- Clinical and experimental evidence for the cardiovascular benefits of plant sterols

- The beneficial effects of wine, garlic products, eggs, fiber, cocoa and chocolate, and coffee and tea on cardiovascular health

While there have been great improvements in treating coronary heart disease through surgery and medications, prevention through diet and exercise should remain an essential priority in maintaining the health of the aging population. Nutritionists, food scientists, and those working in the health industry will find that this book enhances their understanding of the potential role of functional foods in combating cardiovascular disease before more aggressive treatment is needed.

**CROSSTALK: CANADIAN AND GLOBAL IMAGINARIES IN DIALOGUE**
(Wilfied Laurier University Press, 2011)
Edited by Diana Brydon • English, film, and theatre, and Marta Dvořák (Université Sorbonne Nouvelle)

What are the fictions that shape Canadian engagements with the global? What frictions emerge from these encounters? In negotiating aesthetic and political approaches to Canadian cultural production within contexts of global circulation, this collection argues for the value of attending to narratorial, lyric, and theatrical conventions in dialogue with questions of epistemological and social justice. Using the twinned framing devices of crosstalk and cross-sighting, the contributing authors attend to how the interplay of the verbal and the visual maps public spheres of creative engagement today.

Individual chapters present a range of methodological approaches to understanding national culture and creative labour in global contexts. Through their collective enactment of methodological crosstalk, they demonstrate the productivity of scholarly debate across differences of outlook, culture, and training. In highlighting convergences and disagreements, the book sharpens our understanding of how literary and critical conventions and theories operate within and across cultures.
The risky world of entrepreneurship

Researcher investigates business behaviour

BY KATIE CHALMERS-BROOKS

HOW DO INVESTORS DECIDE WHICH BUSINESS IDEAS TO GET INVOLVED WITH? ASPER SCHOOL OF BUSINESS RESEARCHER ZHENYU WU IS TRYING TO FIGURE THIS OUT BY ANALYZING HOW INVESTORS — AND ENTREPRENEURS — TAKE RISKS.

A recently appointed Canada Research Chair in Entrepreneurship and Innovation, Wu hopes to provide budding business owners with valuable insight on how to increase their chances of securing money. “Entrepreneurs and innovation are engines of economic growth. That’s what people have realized, especially during this economic recession and ongoing financial crisis,” says Wu.

He’ll receive $500,000 over the next five years to explore what motivates investors to take substantial risks before seeing any positive cash flow, and how their decision is affected by the risk-taking behaviour of entrepreneurs looking for support.

The Canada Foundation for Innovation and Province of Manitoba provided an additional $236,000 to create a Behavioural Lab for Entrepreneurship Research within Drake Centre, where Wu and his team can interview investors and entrepreneurs from Manitoba and across Canada. The lab will be equipped with audio, visual and computer equipment for teleconferencing, and have an area where additional researchers can observe and analyze.

He says they will be looking at two types of investors: “business angels” who invest very early on and take the highest risks, offering their advice and resources to take the product further, and “venture capitalists” who wait to see some sort of promising sign before coming on board.

They’ll gather information during these interviews in order to design a survey about risk-taking behaviours that would then be sent to more than 10,000 investors and entrepreneurs. “That would be very valuable data for researchers in this field,” says Wu, who arrived at the U of M last July from the University of Saskatchewan.

He has also investigated what signals entrepreneurs are sending to potential lenders during discussions with financial institutions. Wu’s research showed that some signals can increase the odds of securing investment. For example, if entrepreneurs say they are prepared to use their personal credit card to pay for their business expenses, they are indicating they are willing to risk a personal loss.

He has also identified “a subtle gender effect” that occurs when women borrow money for business purposes. He found that lenders charge female sole proprietorships a higher interest rate — on average 73 basis points — than men.

“There was debate in the literature regarding how or whether female entrepreneurs were treated differently but no conclusion. This is one more piece of evidence,” Wu says.

These findings are set to be published this May in the prestigious journal Entrepreneurship Theory and Practice.

His earlier research examined how family involvement plays a role in a business’s success. When family members are owners or managers, entrepreneurs gain “social capital” and have an advantage.

Wu’s role as Canada Research Chair also includes hosting conferences and workshops in this field, bringing to the U of M successful investors from around the world and other leading researchers.
When we hear the word, “navigator”, we might think of someone at the helm of a ship, a guide or a perhaps a pilot. Patient navigation however, is an approach aimed at assisting patients and their families through the complexities of the healthcare system. All diseases, chronic or acute, pose challenges for patients and their families as they face life altering circumstances. In particular, a diagnosis of cancer is laden with emotional turbulence, numerous appointments, a barrage of harsh treatments, and a plethora of treatment side effects. Patients often find they are at the mercy of our healthcare system as they wait for their pathology results, appointments to be scheduled, and supportive care needs to be addressed. It can be very difficult for patients to know who to call, where to go for information and what questions to ask their doctors. With this in mind, patients and their families often self navigate their way through a terribly complex labyrinth of oncology care.

It has been said, “No person with cancer should have to spend more time fighting their way through the cancer care system, than fighting the disease” – Harold P Freeman.

In 2005, I attended the World Conference on Breast Cancer where I learned about patient navigation. The essence of patient navigation assisted me in calibrating my research compass toward an arena of profound passion—the domain of breast cancer. Notwithstanding the numerous complexities associated with other cancers, my familial connection to breast cancer has been the impetus behind my research.

I entered the Master of Nursing Evidence Based Nursing Practice Program in 2007 (Chair Award held by Distinguished Professor Lesley Degner) under the direct supervision of Prof. Thomas Hack. My research focused on the patients’ perspectives regarding the role of the oncology patient navigator.

The guiding questions for my study included: How could a patient navigator assist you throughout your cancer treatment trajectory? How often should a patient navigator contact you? Is it important to have one dedicated person as your patient navigator? The patients’ answers to these questions provided the pertinent foundational framework for my doctoral studies.

My doctoral research pilot project will examine the efficacy of an oncology nurse navigator support intervention for rural and urban women diagnosed with breast cancer. I am hoping this research will provide guidance and direction toward the development of patient navigation approaches both locally and nationally.

“The wind and waves are always on the side of the ablest navigators” – Edward Gibbon

Allison Pedersen has been supported by the Psychosocial Oncology Research Training program funded by Canadian Institutes of Health Research and the Canadian Cancer Society Research Institute; Murphy Scholarship in Graduate Research in Oncology Nursing; Nancie J. Mauro Graduate Scholarship in Oncology Research; Sheu L. Lee Family Scholarship in Oncology Research.
A MATERIAL WORLD

Researcher Wen Zhong is leading the Department of Textile Sciences’ efforts to create new medical applications based on nanotechnology.

Short of a decade ago, the University of Manitoba’s Department of Textile Sciences in the Faculty of Human Ecology saw that its curriculum and research direction needed rejuvenating. Much of the department’s focus had been on the “soft” science of textiles, such as the social and cultural aspects of fashion and clothing and the history of costumes.
After some soul searching about how it could be more relevant to Manitobans, industry, the university and to funding agencies, the department decided its future lied in healthcare. To help fulfill its new mandate it hired Wen Zhong, a Chinese-born textile researcher who was conducting post-doctoral research at the University of California.

Zhong had spent her academic career, including nine years during which she earned a B.E. and PhD in fibre and textile engineering from the Shanghai-based China Textile University (known now as Donghua University), and three years of postdoctoral research in the University of California, exploring how hemp and other fibrous materials absorb, repel and transport fluids and aerosols.

This led her into research projects involving the development of better protective masks with higher filtering capabilities and breath-ability; and separately, the development of stronger lighter-weight composite materials used in manufacturing.

Today, with Zhong as spearhead, the Department of Textile Sciences is one of only two university departments in Canada to develop strong research platforms for the advancement of medical technologies through the textile sciences. The other is the University of Alberta, which is developing new fire-retardant and protective clothing and equipment for use in heavy industry such as Alberta's large oil and gas sector.

The U of M's textile sciences department is exploring the “science of small”—nanotechnology. It's combining nanofibres with drugs to create medical products like bandaging that can prevent and help accelerate healing of skin ulcers. In another project, nanoparticles are synthesized to act as tiny transport vehicles that precision-guide chemotherapy drugs to targeted tumour cells in the body.

In yet another vein of research, the department is developing drug-laced nanofibres that, when grafted onto damaged tissues and organs, act as bio-scaffolding on which tissue and organs can grow.

Zhong’s interest in textile engineering can be traced back to an adolescent fascination with fashion and magic—namely invisible cloaks.

**IT'S HARD TO EXPLAIN**

Lena Horne, former head of textile sciences, noted that people typically associate textiles with clothing manufacturing. “When in fact, clothing is a very small portion of the end use of textiles,” she said.

Textiles include any products made from fibrous materials. In addition to clothing and garments, textile products range from plastics to airplane and car parts. Horne had a key role in developing the department’s new focus on medical applications and in hiring Zhong.

“When [Zhong] came for an interview, we were very impressed with her because explaining her work is not an easy thing to do,” said Horne. “It’s important when you’re teaching students to make the subjects interesting and to be able to explain things very clearly to them.”

**SMALLER AND SMARTER**

The burgeoning field of nanotechnology concerns the creation of materials and structures at the molecular level. A single nanometre is 1/1 billionth of a metre.

To develop “smarter” bandaging, Zhong is using both synthetic and natural polymer materials to create fibres that are less than 1,000 nanometers in size, or less than 1/100th the size of fibres used to create many household linens. Polymers are molecular structures held together by chemical bonds. They are the building blocks for the nanofibres that Zhong creates. The smaller the nanofibre, the softer and more absorbent it tends to be—this rule similarly governs the idea that higher thread-count linens are superior to those with lower thread-count.

Using diameter as a control for comfort and absorption, Zhong is developing drug-encapsulated bandaging that can absorb detritus like pus and blood, while simultaneously delivering anti-bacterial drugs and growth factors.

The nanofibre sheaf that makes up the bandaging essentially serves as a drug reservoir for time-released drugs. The bandaging could drastically improve the lives of many, including chronic-care, bedridden patients who are prone to ulcers. “Pressure ulcers are very difficult to heal, so the best strategy is to prevent them,” said Zhong. “There is a tremendous need to develop materials that do this.”

There is also a need for better bandaging and healing tools for diabetics who are afflicted by foot ulcers and for burn victims.

**PUTTING A SPIN ON NEW DISCOVERIES**

To reduce fibrous materials to the nanolevel, textile sciences researchers employ an electro-spinning apparatus. Traditional fibre spinning that creates larger polymers used in household products involves either melting or dissolving fibres in a spinning process during which they are stretched.

Building on those processes, a high voltage electric field is placed between the spinneret (the exit point of the fibrous thread) and the fibre-collecting device. This electric field encourages the fibres to split into smaller fibres and to continue stretching until their diameter reaches the nano-level.

Other mechanisms can further manipulate the end-product, such as metal plating that collects the fibres in a randomly-oriented mat. The random pattern of the mat can make bandaging “isotropic”—it can absorb and secrete fluid in all directions equally. A rotating mandrel can also be employed to collect nanofibres in a tubular fashion, creating form-fitting wraps for damaged organs and tissues like blood vessels.
Indeed, in addition to developing new bandaging for exterior wounds, Zhong and her team are creating drug-laced nanofibre materials that act as a scaffolding for re-growth when applied to internal tissues and organs. This nanofibre scaffolding could also potentially be used to culture and grow tissue and organs in the lab. The basic recipe for the drug cocktail interlaced into the scaffolding includes proteins such as growth factors and stem cells.

Zhong is researching how to provide the appropriate “cues” that inspire stem cells to evolve into skin cells, bone cells or cells that form different organs. The scaffolding is being developed to biodegrade at the same rate at which a tissue or organ grows. This causes the scaffolding to all but disintegrate by the time the tissue or organ has fully healed or developed.

**A NEW VEHICLE FOR DRUG DELIVERY**

In much of their research, Zhong and textile sciences researchers are addressing the challenge of delivering drugs accurately to the parts of the body that need them. Drug-laced bandaging allows for topical, local drug delivery. When drugs are administered orally or by injection, they tend to disperse throughout the body, resulting in unnecessary side effects to healthy body parts and inefficient doses to the target body part.

Zhong is developing nanoparticles that act as a protective shell and a vehicle for anti-cancer drugs as they travel through the body to their tumorous destination. The nanoparticles, which are created from non-toxic, biodegradable synthetic compounds, can be made to react to the low pH values of cancerous growths. When a nanoparticle comes across a tumour during its travels through the body, the tumour’s pH value triggers the nanoparticle to release its payload.

Providing even further accuracy, nanoparticles can be equipped with certain compounds that cause them to gravitate towards specific tissue or organs. For example, nanoparticles can include lactose, which reacts to heptocytes located on the liver.
Zhong’s and the department’s research milestones have involved “fundamental” discoveries. They have many more years of research ahead of them before any technologies or products are commercialized or, say, spun out to the private sector for further development.

“They [industry] is keen to see what kind of products we can produce,” said Zhong. “I don’t want to rush into that until we can get very satisfactory results from animal models.”

The department’s nanoparticle drug-delivery system has received promising in-vitro results (that is, results from lab studies). They are also collaborating with researchers in China to test the efficacy of drug-loaded nanofibre mats.

“For this kind of research you need a lot of people working together,” says Jun Chen, a post-doc who has been working with Zhong on the development of nanofibres and nanoparticles for anti-cancer therapies.

Indeed, inter-departmental collaboration is an important aspect of Zhong’s work. She is an associate professor in the Faculty of Human Ecology with a cross appointment to the Department of Medical Microbiology in the Faculty of Medicine. She also collaborates with researchers in the university’s Department of Biochemistry and Medical Genetics.

Interestingly, Zhong’s major research collaborator is her husband, Malcolm Xing, a member of the U of M’s Faculty of Engineering, Faculty of Medicine and of the Manitoba Institute of Child Health.

HELPING HANDS

In April 2011, Zhong was recognized for her research by the Winnipeg Rh Institute Rh Award recognizing her exceptional innovation, leadership and promise in her area of research. She was a U of M research affiliate with the Riverview Health Centre, where she investigated ways to reduce the formation of pressure ulcers, or bed sores, in patient-residences at the health centre.

She also receives a $25,000 NSERC Discovery Grant for her research beginning in 2007, and her funding was renewed by NSERC in 2011 for another five-year term. NSERC has also provided Zhong with a one-time $141,000 grant for purchasing lab tools and other equipment.

The Canada Foundation for Innovation and Province of Manitoba Research and Innovation Fund awarded her $200,000 towards infrastructure purchases as well. Provincial agencies are also supporting Zhong’s research: the Manitoba Health Research Council is providing her with a $100,000 annual operating grant over a three-year period and she has received $25,000 in funding from the Manitoba Medical Service Foundation.

MORE TO DO

Zhong, who is currently on maternity leave after the birth of her second son, lives with husband Xing and their family in Winnipeg. Her short-term goal is to publish reports about the department’s research progress in leading peer-reviewed journals in material sciences, for the wider scientific community to critique.

Horne noted: “Zhong has done a lot of exploratory work which has formed a very solid foundation for more ambitious research.”
SET Day 2012 offered by the University of Manitoba to high school students really inspired me. I appreciated all the lectures presented by the different professors. There was Food Forecast: Will we all have Green Hair? by James House and Me and My Genome by Geoff Hicks. However, I was particularly interested in the Asper School of Business’s presentation. This was the first time that the Asper School of Business has been asked to give a presentation at SET Day, and I found this talk personally interesting because, in the future, I plan to study in this field.

Fang Wan presented A Reverie on the Future: Consumers and Their Brands, explaining how advertisements reach people through technology. Wan talked about branding and the difference between brand reality and culture brands. To explain this she showed us a few commercials and what I learned was that, in the future, people will be more attracted to culture brands because they are organic, personal, community-minded and offer a meaning to people’s lives. There was a Harley-Davidson commercial that showed the lifestyle of bikers in the American Badlands and did not talk about the actual motorcycle or even its brand. I thought this was a great example of culture-branding because it does not sell you the bike and yet you still want to buy the bike. This really excited my imagination about the different possible career choices in marketing and technology.

Earlier in the day, the Faculty of Kinesiology and Recreation Management offered me a hands-on approach. I liked the various tests that I was able to experience. The tests studied human response time, accuracy, focus and memory. For example, I learned that where I focus my attention when I am trying to balance myself affects how long I stay in balance. Another interesting test was to trace a picture of a star while looking at its reflection in a mirror. I attempted to do this quickly and precisely.

By doing various tests, I discovered Fitts’ Law, which permits researchers to predict the time it takes a person to move to a target area depending on the distance from the person and the size of the target. Using advanced technology such as probes, a touch-screen computer, motion-sensor cameras and a second computer programmed to compile the data, I was able to measure speed, distance, movement and precision of my movements. This experiment helped me to better comprehend Fitts’ Law and its application. Using technology to test our abilities and to document our results helps researchers to accumulate data on a typical population, creating a base line from which to predict outcomes.

Overall, SET Day offered me multiple career opportunity ideas. I truly enjoyed my day because I am a hands-on learner. I could see myself exploring other career fields now that I have glimpsed into the kind of research that is done by the different departments at the University of Manitoba.
A group of high school students are standing over a mock crime scene in the basement of the Wallace building. They’re trying to figure out who killed geochemistry professor Andrey Bekker based on the physical evidence left behind: shell casings from the gun in question and mud from the culprit’s shoes.

Before the morning is over, the aspiring forensic investigators will have collected and analyzed samples to determine which of the four suspects pulled the trigger. They’ll scrutinize the tiniest particles under a microscope and with X-ray technology. The exercise shows them what geologists can do, which is not unlike the granular-level guesswork fictional investigators employ on popular TV shows CSI, NCIS, and Bones.

“I like how it’s very precise work and the attention to detail,” sixteen-year-old Madison Chapel says while chopping up coarse bits of rock. “It’s pretty cool.”

She’s among the roughly 150 students from Winnipeg and greater Manitoba who took part in Science, engineering, and Technology (SET) Day Feb. 24 on the Fort Garry campus. The sixth annual event showed Grade 11 and 12 students what researchers do at the U of M.

“It’s a good opportunity to open up young people’s minds to science,” says Kristie Lester, lab coordinator for anatomy and physiology who led ‘Hearts and Rec.’ “And it’s good for them to see how a university lab is run, using equipment they may not have access to in their high school.”

She had participants dissect sheep hearts, and taught them how to simulate the effects of exercise on their own heart rate, blood pressure and electrocardiogram results.

It was the first time Indira Mendoza, a Grade 10 student from Kildonan East Collegiate, held a heart in her hands. “It’s really amazing,” says Mendoza, who wants to be a doctor.

In the Engineering building, Prof. Cyrus Shafai taught participants how to build an amplifier that measures the voltage generated from their arm muscle. Students arm-wrestled each other while hooked up to electrodes.

“I figured this would be a fun lab for them,” says Shafai.

Westwood Collegiate math teacher Art Penning says the researchers made science “really relevant.”

“And they showed a real connection to the kids,” he says.
Deborah Stienstra pushes for inclusion. As a Royal Bank Research Chair from 2000 to 2003, she worked with the World Bank in 14 developing countries to determine accessibility and inclusion in projects the international lender was funding. Some of these projects were in areas hit by natural disasters that left residents disabled yet Stienstra discovered that buildings were going up that weren’t accessible to wheelchairs. “We learned of some horrific examples,” she says.
Deborah Stienstra loves turning lights off in public places. The disability studies professor regularly throws able-bodied people—be they students in a classroom or Ottawa policymakers at a workshop—into the dark. She then directs them to write her a story without seeing the pen or paper. ‘Do you need some help?’ she’ll ask.

“I do this regularly. I do this almost everywhere I go,” Stienstra says.
She wants to flip a switch inside and help them see. It’s a given that we have things like light but it’s not so for other types of support, including really basic ones required by people with disabilities. How come?
“As people who don’t yet have disabilities—and all of us could at any time—we don’t understand the things we take for granted.”

Stienstra provides a unique perspective as both a leading researcher in this field and a woman who knows disability in its rawest and most triumphant form. For years, her husband and fellow researcher Patrick Kellerman lived with multiple sclerosis. He couldn’t walk, had severe fatigue and was legally blind. He adapted, reciting his master’s thesis on international finance completely by memory. And before his death in 2004 at age 45, he had written and recorded a series of children’s stories for his kids, then 10 and 4, to listen to after he was gone. Stienstra calls Kellerman a “really high-quality human being.”

In her life with him, every day offered a new lesson.
“I learned the depth of humanity. I learned how complex and challenging life can be and how you can meet those challenges with grace and courage and humour. I learned that people with disabilities are pioneers and innovators. I’ve learned that they are teachers. They teach us how to understand the complexity and richness of humanity,” say Stienstra. “It’s changed how I do my research. It isn’t just about those people out there. It gives me a level of understanding that many people don’t get.”

Stienstra co-led, with Canada Research Chair in Palliative Care Harvey Chochinov, a team of investigators tasked with identifying key issues that disabled people face when nearing the end of their lives. They named their group the Vulnerable Persons and End of Life New Emerging Team (VP-NeT). Last March, they wrapped up seven years of research, made possible by $1.4-million in funding from the Canadian Institutes for Health Research. The project revealed significant gaps in understanding the challenges facing disabled people nearing death.
For one, they realized people were dying without ever being offered palliative care. They didn’t benefit from the comfort and support—both emotional and physical—that happens through medical visits in the home, in a hospice or on a specialized ward in a hospital. “That makes you raise
some questions. What’s happening here?” Stienstra says.

The research showed that service providers aren’t always recognizing that their patients are nearing the end. There’s muddiness, likely because their journey is typically longer and more unpredictable than it is for someone with say, cancer, explains Stienstra.

And when people with disabilities were offered palliative care, they were more likely to be put in hospitals instead of being allowed to stay in their home with help from their existing homecare workers. Once in a long-term care facility, they encountered staff who didn’t know how to tend to their specialized needs. One patient with MS was told that, despite his objections, he had to take a bath. He insisted he couldn’t be immersed in hot water since a rise in body temperature worsens MS symptoms; he warned them his limbs would turn to Jell-o. They didn’t listen and the man almost drowned. “Those are some of the gaps that happen,” Stienstra says.

She and Chochinov go across Canada sharing their findings with people who work in the medical field—from hospice volunteers to social workers and doctors—in addition to community activists, academics and policymakers. The team tailors the message to their audience, which could mean publishing their findings in academic journals or producing subtitled videos to post to YouTube. They learned early on about assumptions people make about people with disabilities. They themselves included the words ‘vulnerable persons’ in their study name, choosing the term since they figured it was one that health researchers and their funders seemed to understand. The people they were working with set them straight.

“Right from the beginning, we were taught that vulnerability does not equal disability,” says Stienstra.

They realized that who society deems vulnerable—loosely defined as at risk of harm—affects how these individuals are treated. The more a group is made to feel this way or marginalized (not part of mainstream society) the less access they had to healthcare services.

The key to turning this around is to educate healthcare providers about how powerful they are, more specifically: how powerful their beliefs are. What we believe comes out in how we behave, which words we use, how we make people feel. Chochinov encourages them to look inward, at what assumptions they might have about the patients they come into contact with on a daily basis, whether as their surgeon or the worker dropping off a food tray.

“I’ve said to groups of healthcare providers: what happens between your ears has profound importance,” Chochinov said in the video Including: Good Palliative Care for All.

The most troubling—and universal—assumption people make? That it is better to be dead than disabled. Jim Derksen, who uses a wheelchair and is the study’s disability liaison, says in the same video: “The fact is, as a disabled person, we very quickly learn that we are somewhat devalued in society. Our lives are thought of as less happy, less good, less worthwhile. So there may be decisions made that our life is not as important to us in terms of extending it and end-of-life decisions may be made based on assumptions that are really not true.”

A big part of this research project is sharing peoples’ stories. Stienstra says during presentations she’ll scan the audience and see looks of ‘I never thought of it that way’ when she recites a quote from Ontario Superior Court judge Sam Filer, who for 17 years lived with amyotrophic lateral sclerosis before dying at 71. Filer said: “Let me assure you that I am not confined to a wheelchair, I am mobilized by one. I am not ventilator-dependent, I am a happy consumer of a lung-expanding, life, breath-giving device that allows me to continue doing things I love…Far from rendering me disabled, the ventilator, the wheelchair, the computer, have empowered me to a level of ability not previously considered.”

Stienstra says it’s this type of attitude she came across time and again. “They say: don’t give us pity. Support and high-quality lives are what we want.”

And don’t assume you know how they’re feeling, just ask.

She champions this same need-to-listen approach in her research with a different
“No one is left behind,” says Stienstra.

group of people: women in northern Canada. For the five-year project Feminist Northern Network, funded by the Social Sciences and Humanities Research Council of Canada, she and her team are partnering with women in Thompson, Man.; Happy Valley-Goose Bay and Labrador West, NL; and La Loche, SK. They want to know the true impact of economic changes in these remote places, like the building of a major hydroelectric dam or the closure of a mine smelter. “When I see those stories on the news, I always ask the question, ‘Well, what do the women think?’ I think often communities are held together by women,” she says. “Are they allowed to share their perspective on what is happening with the decision-makers? Are they engaged in the decision-making process? Are the women being heard? And unfortunately, too often the answer is no.”

Stienstra is finding out how new development is making housing less affordable since temporary construction and mine workers are moving in and driving up prices. There’s more money for local businesses, yet this often coincides with a surge in alcohol consumption and domestic violence. But change isn’t all bad as new projects could help reduce poverty. “It is very much about hearing the women’s voices,” Stienstra says. “Their lives are just changing so much in all of these communities. A huge cultural shift takes place.”

The FemNorthNet logo captures this dynamic. The Indigenous art depicts the behaviour of geese in flight. They fly in V-formation so they can travel farther than they could alone. The one in the front leads and bears the brunt of the wind while the others honk loudly in support. When the leader gets tired, she falls back and another takes over. If a goose becomes sick, two of the birds land with her, keeping her company until she is better or until she dies.

“No one is left behind,” says Stienstra.
The official opening of the ARTlab took place April 12 as the last of seven Knowledge Infrastructure projects constructed at the University of Manitoba.
President David Barnard and vice-president (external) John Kearsey were joined at the state-of-the-art centre for creative design and performing arts by the Honourable Erin Selby, Minister of Advanced Education and Literacy, Rod Bruinooge, MP Winnipeg South, U of M students, faculty and staff and Paul Hess, director, School of Art.

"With the addition of the School of Art Gallery and ARTlab we will be well-placed to make major contributions to research at the U of M and greatly enhance the cultural life of those living in Winnipeg and surrounding region," said Hess.

The new Art Research Technology (ART) lab is a multidisciplinary art and technology centre. The ARTlab project supports Canada’s Science and Technology Strategy through the creation of state-of-the-art teaching and research laboratories and classrooms that will assist in attracting, retaining and training students at the university.

The stunning, LEED Silver world-class space was designed by Patkau Architects of Vancouver. Principal John Patkau is a graduate of the U of M Faculty of Architecture. Greg Boothroyd, Associate with Patkau Architects, was the lead architectural consultant on the ARTlab project, and David Kressock, 

Commissioned student painting viewed by (l-r) President David Barnard and Paul Hess, Director of the School of Art.

Jade Troost, School of Art student with her painting.

Student artwork on display during the annual School of Art open house.
another U of M architecture graduate, with LM Architectural Group in Winnipeg, provided local support on the project.

President Barnard called it “a physical manifestation of the talent of our alumni, the commitment of our faculty and staff and the generosity of our funding partners.”

The president also thanked the U of M administration who played key roles in the development of the project, as well as government partners. The project was made possible thanks to over $30 million in support from the governments of Canada and Manitoba.

“A community is as strong and as vibrant as the art it creates and nurtures, said Barnard. “By successfully completing this space, we are ensuring the vibrancy of our community of learning, discovery and engagement — today, tomorrow and well into the future.

“This project is especially exciting because it is the beginning of the process of creating world-class spaces for culture and creativity. By bringing all of these talented people together in the best possible spaces, we are creating an exciting new hub for culture and creativity on the Prairies,” he said.

New School of Art gallery curator Mary Reid said that it was a true milestone event. She called the past decade “Winnipeg’s turn in the sun,” as it has been acknowledged internationally that Winnipeg currently has one of the most exciting art scenes around.

“The School of Art plays a big role in this recognition since it has produced so many of the talented Winnipeg artists that are gaining significant critical attention nationally and internationally. The placement of the gallery at the front of the ARTlab is very important because it becomes a gateway for every student, instructor and visitor to the ARTlab — a gateway which will provoke the exchange of ideas and creative exploration,” she added.

The opening event featured a student jazz ensemble from the Faculty of Music, a display of art featuring student artists and a painting by student Jade Troost commissioned by the U of M for the event. The piece was signed by U of M and government officials and several students from the School of Art.

John Kearsey, Vice-President (External), lauded the creativity represented at the U of M, and thanked the students who participated. “This is a very exciting time to be at the University of Manitoba. We are undergoing transformational change in the spaces where we live, work, and study, discover and play,” he said.

Next on the agenda is completion of the transformation of Taché Hall into the permanent home of the Marcel A. Desautels Faculty of Music and U of M schools (Departments) of theatre and film.

For more information visit <<umanitoba.ca/schools/art/>>
Visiting UMANITOBA.CA/VISIONARYCONVERSATIONS for more details on each event, including our complete list of panelists.

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Following an award-winning first year, Visionary Conversations is back for another round of thought-provoking discussions. Join President and Vice-Chancellor David T. Barnard, along with trailblazing researchers from the University of Manitoba, in lively question and answer sessions that lead us to unexpected and exciting places.

UPCOMING VISIONARY CONVERSATIONS

WEDNESDAY, SEPTEMBER 12
We Need to Talk About Racism

TUESDAY, OCTOBER 9
Innovation: The Key to Economic Success

WEDNESDAY, NOVEMBER 21
The True North: Canada’s Final Frontier

WEDNESDAY, DECEMBER 12
Trailblazing Indigenous Success

WEDNESDAY, JANUARY 16
The New West: The Economic and Political Rise of Western Canada

WEDNESDAY, FEBRUARY 6
Crouching Tiger, Hidden Dragon: Does the Rise of China Mean the Decline of the West?

WEDNESDAY, MARCH 20
The Arts: Foundation of a Vibrant Community

WEDNESDAY, APRIL 17
Global Pandemic: Another Y2K or Future Apocalypse?

WEDNESDAY, MAY 22
Our Education System: The Good, the Bad, and the Solutions
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!

**Tuberculosis: The Hidden Epidemic**

With Anne Fanning, Pamela Orr and Brenda Elias
October 23, 2012 – 7:00 pm
McNally Robinson Booksellers

Most Canadians think that tuberculosis (TB) is a disease of the past. In reality, while general rates of TB in Canada are slowly decreasing, in some regions such as Nunavut and Manitoba, they have risen over the past decade. In this Café Scientifique, we explore, through the lens of research, clinical care, public health, human rights, advocacy and personal experience, the story behind the numbers — how socioeconomic, environmental, biological and cultural factors are affecting the incidence of TB in Canadian communities, and how our experience fits within the context of global TB and the pursuit of TB control/eradication.

**HIV/AIDS in Manitoba: Global Strategies for a Local Problem**

With Keith Fowke, Ken Kasper, Tara Carnochan and James Blanchard
November 29, 2012 - 7:00 pm
McNally Robinson Booksellers

Every year in Manitoba over 100 new cases of HIV are diagnosed. Some would be surprised to learn that the majority of cases are in the over 40 age group, with over 63% contracted through heterosexual partners. For decades, the University of Manitoba has led the fight against the spread of HIV/AIDS around the globe. Come join our experts to learn about the latest prevention strategies being used to address Manitoba’s growing HIV/AIDS cases and the status of the development of a vaccine to prevent the disease.

**Nature and Nurture (Not Versus): The New Science of Epigenetics**

With Jim Davie, Kirk McManus, Mojgan Rastegar and Peter Cattini
January 28, 2013 - 7:00 pm
McNally Robinson Booksellers

Epigenetics steps in where mapping the human genome left off. Nature says we inherit our genetic make-up or DNA code from our parents. Many believe this code and the genes it represents set the ‘program’ for who we are and what health risks we might possess. Nurture (or epigenetics) says that this program can be ‘hacked’ by life experience, either increasing or decreasing health risks already in our DNA code. Join our experts in a discussion about whether we can control our health destinies by controlling what we eat, drink, breathe, and where we live.

**Drug Discovery: The 21st Century Petri Dish**

With Frank Schweizer, John Sorensen, Donald Miller, George Zhanel and Albert Friesen
February 25, 2013 – 7:00 pm
McNally Robinson Booksellers

The many life-saving drugs that appear on our drug store shelves and that are prescribed by physicians every day to treat diseases and infections all had their start in a research laboratory. In the 21st century, the demand for new antibiotics and anticancer drugs is an urgent focus, given antibiotic resistance and the need to tailor our fight against diseases. Come join our experts as they share the challenges and rewards of their current drug discovery research and the implications for healthcare these drugs hold.
ENDOWED & SPONSORED RESEARCH CHAIRS

The University of Manitoba is home to research chairs created through contributions from individuals, government agencies, foundations and/or corporations, which provide targeted support in defined research fields. Research chairs include:

**Attahiru Alfa, Electrical & Computer Engineering**
NSERC Industrial Research Chair in Teletraffic Analysis

**Charles Bernstein, Internal Medicine**
Bingham Chair in Gastroenterology

**Eric Bibeau, Mechanical & Industrial Engineering**
NSERC Industrial Research Chair in Alternative Energy

**Birna Bjarnadottir, Icelandic Language and Literature**
Icelandic Language and Literature

**Douglas Ruth, Mechanical & Manufacturing Engineering**
NSERC Design Engineering Chair

**Peter A. Cattini, Physiology**
Henry G. Friesen Chair in Endocrine and Metabolic Disorders

**Lesley Degner, Nursing**
CHSRF/CIHR Research Chair in Oncology Nursing

**Terry Dick, Zoology**
NSERC Northern Studies Research Chair in Aquatic Northern Ecosystems

**Jennifer Dueck, History**
Stephen A. Jarislowsky Chair in the Modern History of the Middle East and North Africa

**Hani El-Gabalawy, Internal Medicine**
Chair in Rheumatology

**Spencer Gibson, Manitoba Institute of Cell Biology/CancerCare Manitoba**
Margaret Sellers Chair in Cell Biology

**Ani Gole, Electrical & Computer Engineering**
NSERC Industrial Research Chair in Power Systems Simulation

**Maureen Heaman, Nursing**
CIHR Chair in Gender and Health

**Genyi Li, Plant Science**
NSERC Associate Industrial Research Chair in High Erucic Acid Rapeseed (HEAR)

**Michelle Lobchuk, Nursing**
MHRC Research Chair in Caregiver Communication

**Peter MacDonald, Surgery**
Alexander Gibson Chair in Orthopaedic Surgery

**Jonathan McGavock, Pediatrics & Child Health, Manitoba Institute of Child Health**
Robert Wallace Cameron Chair in Evidence-Based Medicine

**Peter McVetty, Plant Science**
NSERC/Bunge Canada/DL Seeds/Manitoba Canola Growers Association Industrial Research Chair in High Erucic Acid Rapeseed (HEAR) Research and Development

**Peter Nickerson, Internal Medicine**
Flynn Family Chair in Renal Transplant

**Brian Olsen, Agribusiness & Agricultural Economics**
Agribusiness Chair in Cooperatives and Marketing

**Ethan Rubenstein, Internal Medicine**
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**Jude Uzonna, Medical Microbiology & Infectious Diseases**
MHRC Research Chair in Immunology

**Roberta Lynn Woodgate, Nursing; St. Boniface Hospital Research**
MHRC Research Chair in Child Youth Health and Illness

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Manitoba Health Research Council (MHRC)
Natural Sciences and Engineering Research Council (NSERC)

(I-r) Maureen Heaman, CIHR Chair in Gender and Health; Jude Uzonna, MHRC Research Chair in Immunology
Above: School of Art annual open house painting studio at the newly opened ARTLab facility (see inside story on page 29).