# SHOWCASE

LEADING-EDGE TEACHING AND RESEARCH AT TRENT UNIVERSITY

# Old Is Not What It Used To Be

Pushing Back the Boundary between Youth and Old Age

#### The Anti-aging Enterprise

"Old is not what it used to be. In fact, old isn't really even old anymore," explains Dr. Stephen Katz, professor of Sociology at Trent University. According to Professor Katz, the boundary between youth and old age has been pushed further and further back as the physical bio-markers of aging have become increasingly mediated through medical technology from Botox to hip replacements, even prompting gerontologists to come up with a new term for this growing age cohort – the 'young old'.

This group, generally between the ages of 55 and 75, is not only looking younger, they are living longer and are healthier too. More significantly, they represent a large demographic group with considerable buying power that has spawned a thriving consumer culture in the field of 'anti-aging medicine'. "The anti-aging enterprise is enormous," asserts Prof. Katz. "The Association for Anti-aging Medicine in the United States, for instance, has more members than all the gerontology associations combined."

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**Pushing Back the Boundary** 

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#### Alzheimer's: the Disease of our Era or Accelerated Aging?

For Prof. Katz, this usurpation of the study and treatment of aging by the study and treatment of anti-aging is ironic. "As our antiaging culture transforms aging into pathologies and medical categories by treating aging as a vast series of diseases,

we have to ask: Does 'medicalizing' help care for people? Do more labels help?" Prof. Katz points to the work of renowned neuroscientist Dr. Peter J. Whitehouse, who, after helping to develop memory-enhancing drugs for Alzheimer's, is now questioning the status of Alzheimer's as 'disease'. "According to Dr. Whitehouse," explains Prof. Katz, "Alzheimer's may not even be a disease. It may more correctly be seen as accelerated normal aging, rather than pathological aging."

Professor Katz is currently exploring these questions in his own research into Mild Cognitive Impairment, or MCI, (described generally as memory loss). MCI is a relatively new diagnostic

category. With the goal of government-funded research being early intervention in order to reduce costs and provide better patient outcomes, MCI is being actively investigated as a possible site of early intervention for Alzheimer's, which has been called the disease of

"As the boomer generation sheds physical signs of aging, new markers of aging, namely cognitive markers such as memory loss and dementia, take their place and become a new focus of anxiety. So MCI becomes even more of a fraught area because it forms a piece of that boundary between 'young-old' and 'old-old', but at the same time it's a very vague category. The diagnostic criteria are not necessarily well-worked out, and the drug trials that are just emerging are questionable in terms of effectiveness."

#### **Medicalization and New Syndromes**

For Prof. Katz, the 'medicalization' of new syndromes has to be approached carefully. "It's always very interesting when a new condition arrives

on the scene," observes Prof. Katz. "It's not just a construction, but it's not necessarily a reality. It becomes embedded in reality through texts, through professional conferences, through being included in diagnostic manuals; through the formation of companies and interest groups ... in other words, it has to be established. When we have a new medical category such as MCI," cautions Prof. Katz, "we need to have some critical perspective on it before we start not only accepting it, but becoming it."

"As the boomer generation sheds physical signs of aging, new markers of aging, namely cognitive markers such as memory loss and dementia, take their place ..."

In his own research, Prof. Katz approaches aging from a sociological and cultural perspective. At a time when more and more gerontological resources are being focused on health, he and his colleagues, fellow sociologist Dr. Peri Ballantyne, and psychologist Dr. Kevin Peters, have received a prestigious three-year grant from Canadian Institutes in Health Research (CIHR) to pursue their study of the cultural and sociological impact of MCI diagnosis. "Where the funding for gerontological research is mainly focused on health," explains Prof. Katz, "it is often from biomedical perspectives and scientific methodological perspectives. But as we know from our own experiences, so much about growing older, aging, and later life is not simply about health and so much of our health is not simply about individual, organic determinants."

> "Literature, philosophy, spirituality, self-reflection – the existential questions about aging, have, in the 20th Century, become marginalized," observes Prof. Katz. As a case in point, he opens an early 20th Century textbook on aging, by Dr. Ilya Ilyich Mechnikov, the man who coined the term

'gerontology' – four full chapters of the text are devoted to the theme of aging in Goethe's Faust. "Gerontology started out as a multidisciplinary adventure, but it got lost and splintered along the way," asserts Prof. Katz. "Now critical gerontology, this new school of thought, is trying to bring the many facets of aging back together in conversation with each other and I feel very fortunate to be a part of what's considered to be that new school. I enjoy exploring the possible."

"It's a new era," offers Prof. Katz. "We're going to be facing a completely unique future and we need new ways to think about it."■

Scan the QR code to see a brief video of Stephen Katz as he discusses his research and teaching or visit: http://goo.gl/zwe4V

# **Health Trajectories and Health Care Utilization** among Ontario Injured Workers

**Research on the Consequences of Work Injury** 

id-life experiences such as work-place injury influence one's opportunities for health in later life," says Dr. Peri Ballantyne, a health sociologist and associate professor in the Department of Sociology at Trent. It's a statement that many an injured worker can no doubt confirm – and a major research project underway led by Professor Ballantyne that promises to shed light on the issue.

Prof. Ballantyne and her colleagues are in the process of concluding a SSHRC-funded program of research through the Research Action Alliance on the Consequences of Work Injury (RAACWI), looking at "Health Trajectories and Health Care Utilization among Ontario Injured Workers..." The study involved the collection of data from approximately 500 Ontario worker compensation claimants with permanent impairments.

The Workplace Safety Insurance Board collects mandatory insurance payments from all Ontario employers and acts "as a kind of no-fault insurance in the case of worker injury," explains Prof. Ballantyne. The Board adjudicates claims for incidents that occurred in the workplace. "Whether or not coverage for loss of income or access to medical services is adequate is sometimes contested by claimants and the system can become quite adversarial," she adds.

"... so much about growing older, aging, and later life

is not simply about health ..."

According to Prof. Ballantyne, thousands of Ontario workers have permanent impairments after becoming injured on the job each year. Out of 260,000 injured workers, 31,000 will experience permanent impairment. "These impairments may result in a cascade of negative consequences for the injured worker and his or her family: employment insecurity, health insecurity, family instability, mental health issues and income insecurity," she asserts.

"We are documenting the extent to which employment or unemployment following workplace injury is associated with the heightened need for health-care services of various

"How

do we want to live in

of our life?"

kinds, as well as impeded access to such services," says Prof. Ballantyne.

"We have found problems such as failure to recover pre-injury earnings, mental health problems (especially depression), and poverty among some injured workers who sustained permanent injuries" says Prof. Ballantyne. "These kinds of problems can strain income support and health-care systems which affects everybody," she adds.



Dr. Peri Ballantyne

While further study is necessary to follow up with the same group of subjects to examine the changes in their health over a longer period of time, Prof. Ballantyne affirms one thing is certain: "Health and aging are both processes. They are not static. They change over time." ■

# Re-imagining Long-term Residential Care

A Multi-disciplinary Perspective

"Most of us are going to need it," says Dr. James Struthers, speaking of long-term care for the elderly.

Professor Struthers, an historian with Trent's Department of Canadian Studies, is part of a 25-member international research team examining the delivery of long-term residential care from a multi-disciplinary perspective. The project, entitled "Reimagining Long-Term Residential Care: An International Study of Promising Practices," is a seven-year, \$2.5 million initiative funded by the Social Sciences and Humanities Research Council (SSHRC).



#### **Models of Care**

According to Prof. Struthers, Canada has an excellent model for highquality, affordable care for the aged in its veterans' long-term care program. The Veterans Independence Program, or VIP was created in 1981 as an alternative to a massive expansion of institutional care for the large cohort of aging World War II veterans. It provides ground maintenance, housekeeping personal care, health and support services, home adaptations, and transportation assistance in order to allow individuals to stay in their own homes for as long as possible. Unfortunately, this program is only available to veterans.

For Prof. Struthers, weaknesses in Canada's current long-term care model can be traced back to key legislative milestones in the making of Canada's health care system, such as the Medical Care Act of 1966 and the Canada Health Act of 1984, in which neither

home care nor long-term residential care were identified as insured services. "Long-term care is a continuum," says Prof. Struthers. "There are lots of good facilities in Canada and there has been a lot the last five to ten years of improvement over the last half century, but we could still do a lot

In Canada, more than 80 per cent of all care for the elderly is unpaid, informal care provided by family members, most often women. According to Prof. Struthers, the hidden costs of this informal system - including lost productivity due to illness and burnout – must be factored in to any calculations of the cost of long-term care.

#### **Places You Go to Live**

As Prof. Struthers points out, the problem is more than an economic one. "We want to see nursing homes and residential-care facilities as places to live in, not just places to die in. Too often public perception of residential care is that these are places that you go to die rather than places you go to live and to live a good quality of life. That's a tragedy because it creates a stigma around residential care; it creates a fear and an invisibility around residential care that keeps the subject out of the public eye and makes it more difficult to achieve the kinds of reforms to the living conditions and working conditions that all of us would like to see if we were there."



#### MEET THE INNOVATORS

## Eschewing the Traditional Role of the Researcher

# **Participatory Action Research**

ow can we better engage people in community-based health programs? For Dr. Brenda Smith-Chant, chair of Trent's Department of Psychology, the solution is close collaboration with the program's target audience from the earliest stages of development

through to the program's delivery and evaluation.
That is why in her own research, Professor Smith-Chant uses what is known as "participatory action research," an approach that

eschews the traditional role of the researcher as detached observer, for one that requires the researcher to immerse herself in the community being studied, and to engage collaboratively with that community to develop the parameters and methodology of the research study itself.

"Participatory action research is about the researcher being supportive and participating in the activity of the people who benefit from the research, and for the people who benefit from the research to also be a part of how the project moves forward. It's a really different paradigm," explains Prof. Smith-Chant. "This process involves collaboration and trust building as an essential part of the research process.

In their evaluation of Ontario Ministry of Health's Community Aboriginal Recreation Activator (CARA) program, for example, Prof. Smith-Chant and her colleagues saw the participatory action approach as indispensable. "Before we started, we were told that First Nations communities were often very hesitant to participate in research. One of the elders that I talked to actually said that in their community, 'research is a dirty word.' Part of the problem is that they've been over-studied in ways that were often insensitive. So for our study we proposed taking the participatory action approach with the idea that we were going in not as experts doing an evaluation, but as students coming to learn from the community about what makes their program successful."

#### **Internal Activators Achieve Success**

According to Prof. Smith-Chant, CARA is a modest program with modest goals, namely for the communities to run more recreational activities; however, the

"... we were going in not as experts doing an evaluation, but as students coming to learn from the community about what makes their program successful."

communities involved are now seeing many positive outcomes beyond

the program's initially narrow scope. "What happened," explains Prof. Smith-Chant, "was that the regional advisors and the communities themselves started to see improvements in the adoption of healthy eating practices, increased awareness about the harm of substance and tobacco misuse, and increased youth resiliency."

Prof. Smith-Chant credits these successes to the program's community-based, collaborative approach, which allowed each community to hire an internal recreation coordinator, or "activator," who would work with community members to develop a specific plan.

Activators also had access to regional advisors from the Ministry of Health, who provided mentoring and advice. "This is something we don't see in many of the government programs," says Prof. Smith-Chant. "Often programs are designed by experts in isolation and then packaged up and distributed as a one-size-fits-all solution. What we found through our research was that the CARA program allowed people the flexibility to figure out solutions that really fit their own communities."

# Program Design in Collaboration with the Community

The lessons taken from the CARA program can be applied to other communities looking to improve their health programming, asserts Prof. Smith-Chant, regardless of whether that community is large or small, rural or urban,



homogeneous, or multicultural as evidenced by her latest research. Prof. Smith-Chant is currently working with Peel Public Health officials to develop preventative health-care programs geared towards young families in the transition from the prenatal period to the end of the first year of life. After doing a literature review of evaluations of past parenting, social marketing, and social connectivity programs, the team found that many of the programs failed to engage people because they simply didn't address the needs of parents.

"Most of the initiatives are about educating around parenting issues," explains Prof. Smith-Chant. "The logic seems to be that if you only knew more about your child's development you'd be able to take that knowledge and become a more effective parent." In reality, she points out, more information doesn't necessarily produce different behaviour. "Take obesity," elaborates Prof. Smith-Chant. "Do we have an obesity problem simply because we lack information about healthy eating, or are there other factors at play?"

In the end, experts alone cannot design an effective program, says Prof. Smith-Chant, because each community has unique needs and preferences. Only close collaboration with that community will ensure that any program designed will meet their needs and engage them. "There are no

cookie-cutter solutions," says Prof. Smith-Chant. "At the end of the day, we have to stop assuming we know the nature of the problem, and start designing these programs from the ground up."



Scan the QR code to see a brief video of Brenda Smith-Chant as she discusses her research and teaching or visit: http://goo.gl/GCKFA



MATTER OF COURSE

**BIOL 4460H** 

Dr. Craig Brunetti

Internship in Medical Sciences

# **Real-life Hospital Experience for Biology Students**

# New Internship in Medical Sciences Joins Students with Doctors in the Community



Dr. Craig Brunetti

rent University's Department of Biology is enjoying the success of a new internship with the Peterborough

Regional Health Centre (PRHC).

"In conversations with physicians within the Peterborough community, we found that a new internship structure could be tailored to the highly specific form of teaching that they could

community, we found that a new internship structure could be tailored to the highly specific form of teaching that they could use," explained Dr. Craig Brunetti, Trent professor of Biology and coordinator for the course. "With this in mind, we created to where students shedow a physician/gurgoen.

provide more opportunities for students to experience health careers as part of their degree, complemented by the new teaching facilities in Block D of the Life and Health Sciences Building."

Learning outcomes for students include the physician's role as a medical expert, effective communicator, collaborator, scholar, health advocate, professional and manager.

"Developing mutually beneficial partnerships is an important focus for Trent University," said Julie Davis, vice-president External Relations and Advancement. "This partnership with PRHC will allow our students to interact with a potential employer in the community to not only build their skills and knowledge, but to bring awareness about potential careers they might pursue, especially within our community."

a specialized internship course where students shadow a physician/surgeon. This course fits in very well with the Biology Department's view of the importance of health within our curriculum."

"This program provides students with a unique experience that they would not normally get at this stage," said Dr. Bharat Maini, the PRHC anaesthesiologist who has been instrumental in establishing this formal internship program with Trent. "It's rare for students to come into a clinical environment so early on in their education. By participating in this placement, they can start relating real-life hospital experience back to what they've read in their textbooks."

The course emerged as a specialized extension of an existing internship in health sciences that has a broad set of learning objectives from the social aspects of health (health promotion, health policy) to the very applied health sciences fields (veterinary, dentistry, and physicians).

For the internship, students complete a placement in a hospital setting for the equivalent of three hours a week for 12 weeks. Students are also assigned practical readings and background theory every week.

According to Dr. Brad White, professor and chair of the Department of Biology at Trent, "enrolment in Biology programs has doubled at Trent in the last few years and over half of biology students are interested in health-related careers. This new internship will



# TRENT SPEAKS - ON LIFELONG LEARNING AS IT CONTRIBUTES TO HEALTHY AGING

Alumni Perspective: Dr. Richard Whatley Family Doctor, Peterborough Clinic

Aging is an active, adaptive process. The goal really isn't about how long you live.

First, the physical stuff: Basically, this is about maintaining core and muscular strength, and avoiding oxidative and inflammatory stress. The inevitable loss of muscle mass and strength beyond the age of 50 can only be held at bay through a program of active strength training three times a week. We do not lose our balance, we lose our core, and maintaining it is the foundation of falls prevention. Sleep, chronic fatigue and stress a problem? Five, one-hour blocks of cardio a week is

the answer. Abdominal fat is a significant oxidative and vascular inflammatory stressor and so waistlines need to be kept in check, ideally under 38 inches.

Now the cognitive and emotional stuff: The benefits of social connectedness go without saying. Chronic anxiety is the "oxidative" stressor of the mind. Anxious and anxiously depressed people do not age well. Related to this is risk aversion: individuals who play it safe by adhering to rigidly held beliefs, avoiding new experiences, both physical and cognitive, risk the intellectual inertia so easily embraced by cognitive decline. So aging well needs to be coupled with actively embracing new experiences and challenges – both intellectual and physical. In short, grace in advancing years requires a commitment to the potentially risky business of lifelong learning, openness to new ideas, accepting challenges to held beliefs, all of which foster an accumulation of adaptive and coping strategies for the lemons life tosses.



Faculty Perspective: Dr. Sally Chivers
Professor, Canadian Studies

I like to talk about "aging well," instead of focusing on being well during late life. This isn't a euphemism to cover up the many physical changes and illnesses that often do come with growing older. Setting the absence of illness as a late life goal is not always realistic. Aging well might also mean embracing the physical changes and forms of illness that often accompany becoming older, drawing on aspects of them to change, grow, and come to a new sense of self acceptance.

Creativity and aging has become an intriguing subfield that extends beyond the fascinating finding that engaging in artistic activities can strengthen the brain's prefrontal cortex and stave off dementia. Numerous forms of creativity offer a range of advantages to older adults. Most importantly, one doesn't have to be Beethoven to reap the benefits of engaging creatively with everyday life. Composing a symphony and adapting a recipe are both valuable.

In a CIHR-funded collaborative research project called "Theatre as a Pathway to Healthy Aging," I have participated in interviews with members of an Edmonton-based intergenerational performer-created theatre company called GeriActors & Friends, along with archival analysis of their play scripts over the company's ten-year history. Our work so far indicates a rich array of benefits gained from ongoing participation in the arts, including increased visibility, social inclusion, trust, openness, mutual respect, and a breaking down of intergenerational misconceptions based on stereotypes.



# Trent Ph.D. Candidates Discover the Fountain of Youth in their Sleep

Dr. Carlyle Smith Works with Graduate Students to Further the Study of What Should Be a Top Priority among Health Scientists: the Quality of Sleep



stage characteristics that are typical of individuals that are somewhat younger."

"They also show superior cognitive abilities for their age," he continues. "Poor quality sleep is correlated with cognitive problems such as poor memory at all ages. Further, it now seems likely that chronic, poor-quality sleep during younger and middle years leads to an increased probability of cognitive disorders such as Alzheimer's as the individual ages."

"While sleep quality deteriorates with age, those in good health show sleep stage characteristics that are typical of individuals that are somewhat younger."

third of our lives in sleep," says
Dr. Carlyle Smith, professor
emeritus in Psychology and director of the
Trent University Sleep Research Laboratory.

e spend approximately one

According to Professor Smith, by 60 years of age, the average person has spent a total of 18 to 20 years asleep.

"Sleep is an index of health and the deterioration of sleep quality is an indicator of health problems and premature aging," explains Prof. Smith. "While sleep quality deteriorates with age, those in good health show sleep

#### **Acquiring the Skills for the Study of Sleep**

Graduate students pursuing a career in the study of sleep learn a number of valuable skills at Trent. Each learns the basic procedures of how to apply electrode arrays to human participants to record brain waves (EEG) as well as how to score and do sophisticated statistical analyses on the electrical signals that result. They learn to categorize the several stages of sleep and, with specialized software, are also able to identify special wave forms within these stages (such as actual number of rapid eye movements during REM sleep).

These wave forms have been found to be important for assessing the degree to which sleep is involved in memory formation for different kinds of tasks. They are also biological markers of general health, I.Q. and of the aging process.

#### **Graduate Students Discover a New Wave Form**

"In my M.A. research we found that there was a positive link between specific sleep characteristics and IQ in female adolescents," explains Rebecca Nader, Ph.D. candidate in Trent's Psychology Department. "We also found a new wave form that has not been reported in the literature before," she says. "For my Ph.D. research we again found this new wave form in both male and female adolescents, confirming the findings from my M.A."

Ph.D. student Corrine Seeley thinks the "offline" processing we do while asleep may help us to make better decisions.

"There's a lot of research that shows that sleep helps in consolidation of different types of learning tasks such as motor-procedural tasks or different types of complex cognitive tasks," explains Ms. Seeley, "but the research I'm doing involves cognitive-emotional reasoning tasks and that really hasn't been investigated before."

Undergraduate students also learn techniques, not only from professors like Dr. Carlyle Smith, but from the graduate students and technicians as well.

"About 30 per cent of the population complains of sleep problems," says Prof. Smith, "and yet medical schools only allot one to three hours of their entire medical training program lecturing about it. Discovering ways to enhance sleep quality should be one of the most important priorities of medical science."

#### **WORLD OF TRENT ALUMNI**

Dr. Carlyle Smith

# Taking the Pulse of the Practice of Medicine

Former President of the Ontario Medical Association Talks about Patient Expectations

Trent alumnus Dr. Gerry Rowland knows what it takes to provide health care to the people of Ontario. A doctor for 32 years, he has maintained an active practice while responding to emergency calls in his community hospital – delivering a baby or two along the way.

During all of this he served as president of the Ontario Medical Association where he sat on the Board for 11 years. He was also on the Council of the College of Physicians and Surgeons for nine years, as president from 2004-2005. He is currently a general practitioner at the Tillsonburg Medical Clinic.

#### On the Cost of Health and Aging

"There's a saying that old age really sucks until you consider the alternative," says Dr. Rowland, laughing into his speaker phone while multi-tasking during his lunch break. He has taken some precious time to talk to his alma mater, to provide some valuable insight into the state of health and aging.

While advances in pharmaceuticals and medical technology have become better at treating the diseases that accompany aging, according to Dr.

Rowland they have also brought with them greater costs. "The average age of the population is rising, and we use more health care in our later years than in our earlier years," says. Dr. Rowland. "From my point of view, the diseases I'm treating are much more serious and the

technology we need to access it is costly."

"As I get older, it gets more difficult to practice because it's difficult to meet the growing demands of patients. I'm spending more time arranging referrals and access to specialized services outside of my practice."

In Dr. Rowland's experience, referral procedures are complex and waiting lists are full. Patients are waiting six to nine months to see surgeons, before waiting another six to nine months for surgery. Some patients have the



**Student Perspective: Doug Parks Trent University Oshawa Thornton Road Campus** 

Take time for yourself; it's never too late.

I transformed my life. I committed to making positive changes in my life, and learned how to make them happen.

I decided to go back and

finish my degree that I started back in 1992. During this journey back to academia at Trent I found myself looking at other areas of my life that I was too busy to attend to before. The most important was my future health and setting new goals for myself. In March 2011, I joined a men's weight loss support group. We meet every Sunday to discuss current literature on proper nutrition and lifestyle changes that can reduce the risk factors in men by eating properly and leading a more active life, physically and mentally. During this transformation, I successfully lost one hundred pounds. I became my own wellness provider. I no longer require blood pressure medication. I have increased energy. I am happier. I have more confidence in my new way of life. I have a clearer focus and have gained a greater understanding on how challenges can be turned into opportunities.

I will continue to seek new knowledge, whether that is in a formalized classroom setting or through the support of others to help me continue to optimize my mental and physical health, benefiting not only me, but also those I care most about.



Scott Cannata

## **Trent University Student Finishes Cross-Country Marathon**

**Scott Cannata Completes Remarkable 200 Marathons** through 10 Provinces to Support Cancer Research on "The Run to Live"

Inspired by his mother's fight for survival against cancer when he was growing up, Scott Cannata wanted to take his own run at the battle: across the country. So, he set a personal goal to run the equivalent of a marathon a day across Canada in support of cancer research. He set out from St. John's, Newfoundland on May 1, 2011.

On Monday, January 16, 2012 eight months later and with more than 200 marathons completed across 8,500 kilometres, Mr. Cannata ran into the water off the shores of Port Renfrew to mark the end of his incredible journey.

"By studying physical anthropology and biology at Trent University and learning about the human skeletal system and other biological systems, I was better able to prepare for my run across Canada for the Canadian Cancer Society. Thanks to my studies, I know what it takes for my bones to repair as I run day-in

"I live to run and I run to live,

and day-out, and that knowledge is simply invaluable to my journey. What better way to Live Your Education than to let your education help you to help others?

Members of the Trent and Peterborough communities attended a special event to welcome Scott home at the

Trent Community Sport and Recreation Centre.

Mayor of Peterborough, His Worship Daryl Bennett, was in attendance, and proclaimed the day The Run to Live Day in Peterborough. "Therefore be it resolved that I, Daryl Bennett, Mayor of the City of Peterborough, do hereby proclaim February 2, 2012 as Run to Live Day in the City of Peterborough and congratulate Scott Cannata and his team for their efforts to make cancer history."

Mr. Cannata and his team raised funds close to \$40,000 through the Run to Live which was supported by the Canadian Cancer Society.

"I live to run and I run to live, now it's time to run so others can live." – Scott Cannata

# **Biology Student Shares Excitement**

# for Life & Health Sciences Facilities at Trent



ourth-year student Elizabeth Morrison hopes to unite her passion for science and learning in the medical field.

Biology student Elizabeth Morrison had an opportunity at the podium to share her perspective on the addition of Module D to the Life and Health Sciences Building. The Trent University community celebrated the official opening of Module D in November 2011, thanks to funding by the Federal-Provincial Knowledge Infrastructure Program.

Opportunities provided by the new facilities will allow Ms. Morrison to pursue continued advancement toward a career in the medical field.

"Trent's increasing attention to expanding education in health and life sciences is very pertinent to my education and to the education of many students like me," said Ms. Morrison to the crowd gathered for the opening ceremonies. "The construction of a Life and Health Sciences Building shows the commitment the University has to bringing life and health sciences education to the

"You don't have to go far from home to get an amazing education here at Trent..."  $rac{{
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"You don't have to go far from home to get an amazing education here at Trent," Ms. Morrison added, to an appreciative audience. "You're able to enjoy the community and one-on-one relationships with faculty without sacrificing state of the art equipment and

Originally from Peterborough, award-winning undergraduate student Ms. Morrison is completing her fourth year of an Honours Bachelor of Science Degree in Biology at Trent. Her area of study is molecular biology with a special interest in virology and infectious diseases.

"Trent has opened so many doors for me that will greatly affect my life. My degree will allow me to continue

to pursue further education. Because of what I have learned both scholastically and through experience at Trent, I am both a better student and person," said Ms. Morrison.

now it's time to run so others can live."

"Whatever I do in my life, I hope to actually make a difference and continue to do my part in helping others," said Ms. Morrison. "I believe that working in the medical field would be an amazing way to unite my passion for science and learning with my love of people."

It is anticipated building will

receive an official Gold LEED certification (Leadership in Energy and Environmental Design), in recognition for its sustainable and environmentally friendly design and construction.

> Module D now connects to Module C, home of Nursing, Psychology,

impression that they have a right to anything they need. That is far from the reality and it puts stress on both the doctor and patient.

"We find ourselves caught," Dr. Rowland explains. "Patients become frustrated with doctors."

#### **The Knowledgable Patient**

Dr. Rowland is seeing that more patients today are wellversed, bringing in information from their latest internet searches about their personal health concerns. They are aware of the technology available for various testing, but don't have an idea - in most cases - as to whether or not it is appropriate. They demand expensive procedures such as MRIs and CAT scans, which we don't have the resources to do on demand

"It's difficult to resist an angry patient who is told that they have a right to a test that they don't require," says Dr. Rowland.

#### **Fond Memories of Trent**

Dr. Rowland was a founding member of the Commoner pub and lived in the "turret room" with roommate and digital guru Don Tapscott at Sadleir House. He has fond memories of playing rugby. "Trent's focus on sportsmanship and inclusiveness rather than being the most successful team in the league coloured my judgement as I went on," he says.

"Trent was a wonderful thing back then. In the tutorial system, smaller class sizes allowed me to do better than I would have in a larger school. The grounding I got at Trent allowed me to succeed in graduate school, medical school and pretty much everything after that."

Dr. Rowland was affiliated with Peter Robinson College during his time at Trent from 1966 to 1970. He graduated with an Honours Bachelor of Science degree in Biology.





#### **INVESTING** IN TRENT

# CIBC Provides \$200,000 Entrance Awards for Nursing Students

**Boosting Access to Education for over 72 Students over Four Years** 

#### **Cancer Survivor Gives Back**

iagnosed with cancer at age six, Trent student Hannah Silk couldn't have imagined that she would one day have the opportunity to become a nurse and help kids just like her. When she graduates from Nursing in Trent University's 50th year (2014), Ms. Silk is intent on working in paediatric oncology.

"I thought going into nursing would be a really cool way to give back," said Ms. Silk, who spent six years of her childhood fighting cancer - three in chemotherapy – before she was declared free of the disease at age nine. Now, while studying to become a nurse at Trent, she volunteers at Camp Trillium, running the ropes course and rock-wall programming for kids and families affected by cancer.

CIBC is assisting students like Hannah, who are driven by their own reasons to contribute to their communities, with entrance awards to ensure that access to nursing education is available for those who need it. \$2,500 per student will be awarded to a total of 72 eligible nursing students over the course of four years, along with the creation of the CIBC Nursing Awards Endowment.

"At CIBC, we care about educating Canada's young people so they can build a better future," says Leslie White, senior director, CIBC Community Investment. "This commitment, combined with our longstanding support for those living with cancer, makes the CIBC Nursing Awards particularly important. We're proud to help Trent's nursing students prepare for a career of helping others."An investment in the healthy education of an individual is an investment in the health of a community, and CIBC's



Diagnosed with cancer at age six, Trent student Hannah Silk couldn't have imagined that she would one day have the opportunity to become a nurse and help kids just like her.

support of nursing students ensures that students like Hannah can continue to step into their futures.

"The great thing about the Trent-Fleming School of Nursing is that you get to experience placement in your first year," says Ms. Silk. "Most other schools don't have that option." Over the length of the program, students in the School will gain approximately 1500 hours of clinical

Ms. Silk describes her hands-on experience working with patients as a nice change from being in the classroom setting. "In my first year I was actually in a long-term care facility helping residents," she says.

Dr. Kirsten Woodend, dean of the Trent-Fleming School of Nursing, adds that, "students often have to work while in university to meet tuition and housing costs. Awards – such as this one from CIBC – make it possible for students to concentrate more on what they are here for - studying to become a nurse. Thank you for making our students a priority."

#### **Lower Class Biology**

**Those Poor Diseased People** 

oday we would never regard class as biological," says Dr. Kevin Siena, associate professor with Trent's Department of History. Professor Siena is interested in the history of medicine and epidemic disease and his focus includes the early history of typhus in an exploration of 17th and 18th Century London from social and biological perspectives.

Dr. Kevin Siena

Prof. Siena's current research looks at how doctors diagnosed contagious diseases and referred to the bodies of the poor, raising issues of the relationship between class and biology. "Gender and race typically play a role in discussions of the body, but very little is looked at in terms of class being biological," he says.

Much of Prof. Siena's work is focused on the 1700s, the period after the plague, yet before the outbreak of cholera epidemics. According to Prof. Siena, this is an often overlooked period of time in historical medicine, but a period that can tell us a lot about how medical professionals approached ideas about disease.

#### Moral Biology of the Poor

"The discourse of disease from that time created a moral biology of the poor," explains Prof. Siena. "It was believed that moral actions inscribed themselves on the body, creating a constitution that is prone to disease.

"In the 1700s there weren't any big epidemic outbreaks, but the people were still thinking and talking about the plague all the time," he explains. "The memory of the plague lingered for more than a century. Even those who would not experience the plague in their lifetime were very afraid of it.





# A Poetic Realization of Aging

# Creativity in the final years of a poet's life and work

believe that creative writers who have spent a lifetime working carefully with language and reflection have important insights to offer about creativity in later life," says Dr. Suzanne Bailey, associate professor with Trent's Department of English Literature.

Professor Bailey finds the idea of aging exciting. This may not be a common sentiment, but her work examining

the poetry of Canadian poet P.K. Page, particularly her later work, brings new life to the topic of aging. Her latest publication is an edition of the author's Brazilian Journal,

which Page revised and published when she was 71."P.K. Page resists some of the stereotypes we associate with aging," Prof. Bailey explains. "It is fascinating to see this play out through her work."

While the idea of aging can prompt questions like: "Is it all over?" and "Are there still possibilities for creativity?" Page, who published well into her nineties, inspires the reader to view aging as a creative chapter in life.

Prof. Bailey explores what Page called "here/there," or the way we remember the past in the present when we think about our lives. "I am interested in what creative artists have to say about memory and time," she says, "and about being human later in life. I am interested in the 'inside' story of aging, and what it means to be a certain age."

Complementing her own work in the humanities, Prof. Bailey also collaborated with professors in the social sciences, on a project with the Trent Centre for Community Based Education (TCCBE), along with Trent professors Alan Law (Sociology), Jim Struthers (Canadian Studies), and Gary Reker (Psychology). The research involved a series of interviews with aging Peterborough residents

concerning how they felt that their age allowed them to contribute to their workplace

"Some of the most interesting theoretical work on aging is being conducted in the social sciences," Prof. Bailey says, "but there is a misconception that the words and experiences of older people are missing from our culture. The voices of the aging are there if you look at creative writers who use their own lives as subjects of their work.

"It's important to study literary work within the field of aging, because literature is where we find reflections on aging. Writing is a unique area of human endeavour to include in the study of aging."

#### **Encouraging Students in the Study of Stories**

"It's important to include literary work within the field of aging studies," she adds, "because literature is where we find reflections on aging. Creative writing and artistic work are sometimes overlooked as important areas of human

"There is something about the poem as an art object that is unique and draws on perceptions of aging and on layers of human experience." It has to do with the senses, emotions and metaphors that poetry inspires." According to Prof. Bailey, metaphors filter into our culture where they can become stereotypes, and it is important to consider how a writer pulls, stretches and rearranges cultural metaphor to either support or challenge an idea.

"I want students to examine these metaphors and how writers use them. I want to encourage students to consider how we conceive our own stories and the stories of others.

"Poetry lends itself well to reflection on aging and on being of a certain age. Perceptions of aging and the experience of aging are social justice issues with an

important set of cultural metaphors attached to them which need to be reconsidered.'

Prof. Bailey's interest in this subject started with the poetry

of Robert Browning. "The body of work at the end of his career was

so puzzling," she says. "Critics dismissed it. It made me wonder what this kind of reaction says about a writer's career. Does age equal decline? An artist's career follows a rhythm, and it seemed, in the case of Browning, that old age brought loss of control over words and originality."

In Page's poetry, Prof. Bailey found an enlightening presentation of age. "Page responds to time," she says. "We tend to think of old age as a kind of wall, but Page always looks forward, to the future. The work she completed in her nineties is a reaffirmation of who she is in the world. Through Page's later work we are shown a capacity for novelty in old age - for looking at things in new ways."

Prof. Bailey had the wonderful opportunity to meet P.K. Page in 2002. She shared with her the research that she was conducting on Mr. Browning's later-life work. What did P.K. Page think about aging as a research topic? "She did not think it was a very nice subject," Prof. Bailey

laughs. "But I find it so exciting discovering through literature that we find new possibilities into our nineties is amazing."

Scan the QR code to see a brief video of Suzanne Bailey as she discusses her research and teaching or visit: http://goo.gl/ObbbN



Dr. Suzanne Bailey



"We know the plague was blamed on the poor," asserts Prof. Siena, "that it started in poor neighbourhoods and raged the worst there. While doctors were trying to explain the phenomenon of the plague they devised theories about the bodies of the poor – that their bodies were fundamentally different."

Medical discourse during that period continued to focus on the idea that the poor were biologically more susceptible to disease. "They were seen as prone to contagious disease and the generators of contagious disease," he explains. Medical theories of the time encompassed ideas that the poor were drunk, idle (and therefore spent less time sweating out impurities) and of highly amoral behaviour.

"Doctors used the emerging language of science to present poverty as biologically essential and unchangeable. Medical discourse became social policy discourse," Dr. Siena says. "It's interesting how this contagious disease discourse began to augment discussions about the body."

This "constitution of the poor" was also believed to be inherited, furthering the idea that class is biological. "Doctors believed even the poor that were hardworking, moral and sober would inherit a constitution that is predisposed to disease," Prof. Siena says.

While the 17th and 18th Centuries are the focus of Prof. Siena's work, his study is becoming very timely. "Just now we are starting to hear about geneticists who are talking about the 'biomarkers' of poverty," he explains. "Some suggest they can see lasting changes at the genetic level. It appears we are getting a renaissance of the idea that class does inscribe itself on the body in a permanent

Prof. Siena asks, "How loaded and potentially dangerous will this information be? My research works to expose and point to how dangerous it is to suggest class is biologically essential," he adds, referring to the strains on social relations that such a belief can create. But Prof. Siena is also quick to mention that these new genetic discoveries could also have a strong progressive impact as they illustrate the damaging effects of poverty. "There was certainly discourse for both sides in the 1700s," he says. ■

Scan the QR code to see a brief video of Kevin Siena as he discusses his research and teaching or visit:



Dr. Beryl Cable-Williams

# Managing Expectations of Frailty in the Final Years

#### Quality of Life in an **Extended Lifespan**

"Speaking about seniors as if they are a single, homogenous group is misleading," says Dr. Beryl Cable-Williams, an award-winning

professor in the Trent-Fleming School of Nursing. "This is something we have to be very aware of so that we are presenting population data in a meaningful way," she asserts. "The needs of the frail, 'oldest-old' may be eclipsed by younger, more active and vocal seniors with very different needs."

Professor Cable-Williams' research interest is in aging, while she teaches in the areas of gerontological nursing, palliative care and community health at Trent. She is particularly interested in advanced

old age, in people whose level of frailty and independence requires long-term care residency, whose mean age on admission is 85 years.

Prof. Cable-Williams warns that we've become good at sustaining life, but not at supporting the consequences. "Now we are dealing with the consequences of pushing the limits of our life span," she says.

#### **Prolonging the Need for Long-term Care**

According to Prof. Cable-Williams, the longer you live, the less likely you will be to die suddenly. Long-term illnesses, such as congestive heart failure and dementia, are the leading cause of death among the oldest of the old.

"There is a belief out there that people live for many years in long-term care facilities," says Prof. Cable-Williams, "but that is not the case now. The average stay is three years, with one-fifth of residencies expiring within the first year. The trend to shorter duration of residence between admission and death is likely to escalate as we get better at keeping senior citizens home longer."

We look to keep people well and at home as long as possible, but the idea that we can cure aging and avoid frailty is a huge burden of expectation. "Even if we live longer, there is going to be that period of dependence," says Prof. Cable-Williams. "We 'problematize' aging, as opposed to understanding it as a stage in a life span," she adds.

"I sometimes wonder about the wisdom of keeping people alive longer if we can't support their quality of life. If we want to cure aging, we have to ask how we are going to live longer, what that will be like and how will we support those people."

#### **Preparing Nursing Students to** Care for an Aging Population

Aging is identified as a key focus in the curriculum at the Trent-Fleming School of Nursing, "because of the population trend in our area. Peterborough is one of the oldest communities in the country," explains Prof. Cable-Williams, "but the theme applies provincially, nationally and globally," she adds. Students are provided with

courses and placement "How we talk about seniors as though they are opportunities to develop their gerontological nursing background in

communities, locally and provincially.

one, nice homogenous group is misleading,"

Placements in long-term care facilities in a student's first year are appropriate because it allows them to encounter a population whose care may not be highly technical. Right away they interact with and become accustomed to communicating with people as a nurse, while learning some of the basics around time management and what they need to accomplish within the organizational structure of facilities. More importantly, they begin to engage in the challenging practice of working with a complex population group. All nursing students also take a mandatory course on living with chronic illness in their third year, with parallel clinical placements in a hospital setting.

Options in the fourth year include an advanced course on contemporary issues in aging, where students may go out in placements across the province. Students choose to focus on topics such as population demographics, living with chronic illness and frailty, mental health, transitions and supported living, independence to dependence, and palliative care toward the end of life. Some students take their interests further, focusing specifically on topics such as aging as an immigrant, mobility issues, experience of aging as a gay person, or aggression as an aspect of behaviour in dementia, for example. ■

http://goo.gl/BWrdo

### TALK ABOUT TEACHING

# A Healthy Dose of Innovation in Teaching

# **Jocelyn Williams Revitalizes a First-year Course**

r. Jocelyn Williams is a bioarchaeologist and assistant professor in the Department of Anthropology at Trent University. Her research focuses on the historical relationship between nutrition and health in MesoAmerica, North and South America. She is currently working on a variety of multidisciplinary projects investigating health, diet and population movement during periods of social and/or environmental upheaval (e.g., the ancient Maya 'collapse'; the Spanish invasion of Peru).

Trent University's 2012 recipient of the Award for Educational Leadership and Innovation, Professor Williams really enjoys digging into a problem. "I enjoy anthropology as a discipline because you can bring so many lines of evidence to bear on a question. Anthropology is about exploring complex topics from as many different perspectives as possible and that's what I'm always trying to do in my teaching," explains Prof. Williams.

#### **Consultation with Colleagues and Students**

For Prof. Williams, this meant tackling the first-year course and looking for ways to innovate on all levels. One of her greatest resources has been other professors of first-year courses from across the University through the yearly meeting and online forum organized by the Instructional Development Centre which is designed to encourage and promote the exchange of ideas among first-year course instructors.

"I don't do any of this in isolation. I've learned things from colleagues or I see them doing something or talking about something and then I try it. Then I'll talk to them about my results, and they give me input that allows me to change. I'll talk to my students and they'll give me input - I'm as much a student as they are. I'm studying what works and what doesn't work and I'm trying to accumulate research that helps me better design the course."

One significant change introduced in 2008 was the replacement of twice-yearly workshops with weekly, hands-on tutorials. This involved a substantial allocation of resources on the part of the Anthropology Department, which had to dedicate the majority of graduate teaching assistants to run them. The University has also provided funding, through the scientific equipment fund, for the purchase of many of the teaching materials used in these tutorials. For Prof. Williams, this type of support is essential to the success of the course.

"The support of the Department gave me the encouragement I needed to tackle other things and I'm lucky as well to have a course co-ordinator to help me put all my ideas into action. It's all fine and dandy to want to innovate, but you need the support of your colleagues and of your university to carry it out."

"My goal is really to help people who are struggling with English as a second language, who are registered with the Disability Services Office, people who have difficulty with note-taking, for example, or difficulty with hearing."

#### Innovations to Support Student Learning

Other changes include a custom textbook offered as both an e-book and an audiobook, online assignment submissions, guest lectures and webcasts of lectures. Prof. Williams is enthusiastic, but realistic, about the potential of technology in the classroom. "The audio book was a huge success.



"Anthropology is about exploring complex topics from as many different perspectives as possible..."

They're listening to it on their ipod, on the bus, in their car, at night, when they're walking to school, when they're walking across campus – so without a doubt they're using it a lot and they're finding it very helpful."

While she offers webcasts, Prof. Williams does not intend them to replace live lectures. "The webcasts are meant to support students in their learning, not to replace the physical lecture," she explains. "They are also meant to help students who just want to go back and review the material. It's about giving them a bit more control over their learning."

"My biggest compliment is the students who come up to me and say I switched majors because of your class. That's what it's all about: It's about showing them this

discipline that they knew nothing about and helping them see how relevant and interesting it is." ■

Scan the QR code to see a brief video of Jocelyn Williams as she discusses her research and teaching or visit: http://goo.gl/SbfuE





Margaret Carson, M.A. Sustainability Studies

The Importance of Senior Farmers to Healthy Communities

Margaret Carson, in her first year in the Master of Arts in Sustainability Studies, understands the importance of healthy communities. Ms. Carson

has recently arrived at her thesis proposal, centred on the importance of older farmers and their contributions to their communities. The topic intertwines sustainable farming with sustainable community building, and in Peterborough, a city surrounded by rural farming communities, the subject carries great significance.

"My work is going to examine the importance of food practices in terms of farming and sustainable rural communities," Ms. Carson explains. "Rural seniors in farming communities help keep alive a richly textured cultural heritage centred on the acquisition, production, processing, and sharing of food. The more elderly of seniors, who have been rooted in place as their lives evolved through the industrial

"Rural seniors in farming communities help keep alive a richly textured cultural heritage centred on the acquisition, production, processing, and sharing of food."

and technological eras, carry with them extensive knowledge of local food practices. The speed with which change has occurred in food practices over the last century has left us behind in exploring the depth of its impact on life in rural communities. In particular, very little research has focused on changes in the temporal and spatial relationships to food in farming communities, and the meaning of those relationships."

#### **Aging Rural Communities**

Ms. Carson notes that these rural farming communities are shrinking and aging. Social events, centred on food and an important aspect of community, are run by senior volunteers. She asks: "Who will carry on traditions of community-building and sustainable farming?"

The work is a combination of Ms. Carson's social work background and her personal interests in restoration, conservation, environmental issues, and sustainable and organic growing. Ms. Carson and her family live in Warsaw on 95 acres of land they co-own with a neighbouring family. Their joint effort to farm the land, with vegetables, a few chickens and a small dairy cow, is an example of farming and community working hand-in-hand, and how farming and modern-day lifestyles are compatible; the sharing and helping relationship Ms. Carson's family has developed with her neighbours illustrates that farming can be accessible to all.

Ms. Carson has a Bachelor of Social Work from Ryerson University, and is returning to school after a career in social work. "What brings me to this point in my academic career is a combination of professional and personal interests, and continuing my strong commitment to social justice and community building as solutions for dealing with complex world issues," she says.

#### **Bridging Differences between Old and Young Farmers**

Her thesis will examine the burgeoning interest from younger people in sustainable and organic practices, an interest she says is encouraged by innovative programs like Trent's M.A. in Sustainability Studies.

She will explore perceived differences between older and younger farmers, and how to bridge the two groups in order to continue the traditions of community building. An important part of her study will be highlighting the power an aging generation has in promoting change. "I am interested in the meaning that emerges from seniors' narratives," she says, "and what it might convey about the roles of food in bringing people together toward a common purpose. My work will offer a critical look at how we view seniors. I will look at the agency seniors have for contributing to future plans. They possess a great deal of experience and information that we need for a sustainable future."

With community being so central to Ms. Carson's life, it comes as no surprise that she finds herself at Trent University. "Trent's learning environment offers great interaction with faculty who are engaged with a wide range of interesting topics and research," she says, commenting on the multidisciplinary nature of the Sustainability Studies program, which combines diverse disciplines and perspectives. "The quality of dialogue is impressive," she adds. "I'm having a great experience here. It's hard to come back to school, and find yourself in a new culture of university, but professors are interested in what I am doing and very supportive. It is wonderful to work with people who are so engaged with their areas of interest and also engaged with the communities where those interests play out."■

#### **Learn to Earn**

ith pressure mounting on public pensions, early retirement may be just wishful thinking for most of us.



In just 15 years, it's predicted that there will be only two people working for every retiree. Without robust pensions,

more of us may be on the job well into our seventies.

But, according to economics professor Dr. Torben Drewes, we may

be able to mitigate this pressure through the increased productivity realized by investment in higher education. Census data shows that men with a Bachelor's degree earn 45 per cent more than those who've only completed high school. For women, it's 60 per cent more. Those with a college education earn 18 per cent more, on average. Those making this investment in education are getting a pretty good return

on investment – and contributing more substantially to the economy and the pension system.



A Glimpse into the Latest Findings at Trent

#### Use It or Lose It

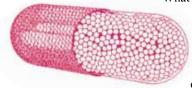
or most people, cognitive abilities – including skills like remembering how to make a favourite meal, being able to solve a puzzle or follow a train of thought – diminish as we get old. But according to Dr. Gordon Winocur, with a little effort and support, we may be able to stave off some of the effects of cognitive decline.

Non-biological factors such as physical inactivity, poor diet, lack of environmental stimulation, as well as a person's outlook (eg., pessimism, unhappiness) play a role. Using this information, Winocur and fellow researchers at the Rotman Research Institute at the Baycrest Centre for Geriatric Care, engaged a group of elderly people experiencing age-related cognitive decline in a 12-week cognitive rehabilitation program. Participants showed delayed onset of symptoms of dementia, and made gains in their ability to take care of themselves. In most cases, the benefits persisted and, in some, even improved over a three-month period.

#### Feed Your Head

ow likely would you be to take a drug – guaranteed safe and effective – if it could enhance your cognitive function? What about your mood? Sexual function? Appearance?

What if it could reduce your risk of developing Alzheimer's?



Affecting about 10 per cent of people over 65, and more than 30 per cent of people over 80, Alzheimer's is one the most feared diseases in our society. Operating on the assumption that earlier identification and treatment of Alzheimer's will lead to better outcomes, there is - and

will likely continue to be – an increase in the number of

people seeking out or being offered medications for Alzheimer's.

For assistant psychology professor Dr. Kevin Peters and fellow researchers, the neuroethics of cognitive enhancement – what factors affect people's willingness to use pharmaceuticals to enhance their psychological functioning – is an interesting question that has important implications at each age and stage of life.

#### **Grandmothers' Work**

any view the greying of Canada's population as a pending economic crisis, as the Inumber of economically productive people in the workforce declines vis-à-vis the elderly. More than a decade ago, there were predictions that prolonged HIV/AIDS epidemics in some Sub-Saharan countries would lead to state collapse as the number of elderly people and

children grew in relation to the thousands of adults dying from HIV in their 'economic prime.' The predictions, however, were not borne out. Families and communities carried on, in large part because of the labour of elderly women.

"If we only view people's contributions to society in narrow, economic terms," says Dr. Colleen O'Manique, assistant professor in the Department of Gender & Women's Studies, whose research has focused on the policy responses to the HIV/AIDS pandemic in Africa, "we undervalue the unpaid work that is critical to community health and well-being." ■



Trent University's Faculty Publications list is a summary of Trent's vast contributions to academic excellence in the advancement of knowledge across the sciences, social sciences and humanities over the past year. All peer-reviewed publications by Trent faculty that appeared in press between September 1, 2010 and August 31, 2011 are currently on display. The list is available in digital format online, in keeping with Trent University's commitment to sustainability and the environment.

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