

# Bringing Research to LIFE

## Upcoming Events

### Café Scientifique

#### Chronic Lymphocytic Leukemia - New Discoveries and Options for Patients

Chronic Lymphocytic Leukemia (CLL) is a cancer of the white blood cells. It is the mostly widely diagnosed type of leukemia in the Western world, mostly affecting older men and has a poor survival rate. As the Baby Boomer generation grows older, the incidence of CLL will increase.

In the new era of personalized medicine, what new diagnostic tests will improve detection at the earliest stages? What research discoveries will pave the way to new treatments and improve survivorship? What clinical trials are being conducted in Manitoba?

Join us in a lively and open discussion on CLL with Canada's leading scientists, clinicians, patient advocates and nurses on this important disease.

#### Experts:

Dr. Versha Banerji  
Dr. James B Johnston  
Dr. Aaron Marshall  
Dan Skwarchuk  
Dr. Cynthia Toze

#### Moderator:

Dr. Spencer Gibson

Wednesday, Oct. 3, 2012, 7:00 pm  
McNally Robinson Booksellers  
1120 Grant Avenue – Event Atrium

#### RSVP to:

eileanmckenzie@cancercare.mb.ca  
or 204-787-2814

## Undergraduate Research Poster Competition

Thursday Nov. 1, 2012  
1:00-4:30 p.m.

Manitoba Rooms 210-224  
University Centre,  
Fort Garry Campus

#### CASH PRIZES

**ENTRY DEADLINE: Oct. 12, 2012**

For more information:  
[umanitoba.ca/postercompetition](http://umanitoba.ca/postercompetition)

## In the interest of your health Catching up with a pair of Manitoba Research Chairs



Microbiology professor Brian Mark and nursing professor Michelle Lobchuk

Photos by Kristen Hooper

#### BY KATIE CHALMERS-BROOKS For The Bulletin

Brian Mark and Michelle Lobchuk might be going after different targets but they're doing so with similar intensity. Mark is zeroing in on antibiotic-resistant bacteria and devious viruses while Lobchuk is tackling miscommunication between nurses and the family members who care for their chronically ill loved ones.

Both were named Manitoba Research Chairs by the Manitoba Health Research Council last year.

After receiving the designation, Mark continued his investigations into a microbial infection that preys on people with weakened immune systems, most often patients with cystic fibrosis (CF). Known as pseudomonas, the bacteria shows up in the lungs of people with CF and can be lethal given that the microbe deploys enzymes that destroy antibiotics as soon as it detects their presence.

Over the past seven years, Mark and his colleagues have been developing small-molecule-based strategies that go in and shut down the release of these antibiotic-destroying enzymes. This bodes well for a whole family of antibiotics whose therapeutic value is being steadily eroded by these enzymes.

"It would boost the antibiotic efficacy to the point where the infection would be more manageable. It could prolong lifespan," says Mark, noting most CF patients die from respiratory failure related to damage caused by chronic lung infections. "We've shown that it's possible to boost antibiotic efficacy using our approach. To take it to where patients can get it, it's hard to

say, it could be many years away. It could be that the approach may get adjusted somewhat, the target may change. There are multiple targets that we're studying. There is still a lot of research to be done."

To date Mark has solved its three-dimensional crystal structure, which is the U of M team's specialty. This allowed them to do precise measurements and design a drug that perfectly fits within the physical specifications. A collaborating chemist at Simon Fraser University makes the molecule and Mark then tests its effectiveness.

Mark also solved a key structure used by the deadly Crimean-Congo hemorrhagic fever virus, which is most prevalent among agriculture workers in the Middle East and transmitted to humans through ticks. The virus produces an enzyme that helps it to evade the human immune system.

The fight against these minute menaces is ongoing and multifaceted, says Mark. "I like the challenge. You never know what to expect."

Lobchuk is tackling a different sort of complexity: the type that permeates interactions between nurses, family caregivers and patients.

Working for more than a decade as a hospital nurse, Lobchuk saw firsthand how health-care professionals weren't able to do enough to equip family members to adequately care for their loved ones.

"Often as a nurse I felt ethically challenged: Am I providing the appropriate care so that these individuals can be cared for safely in the home, so they can stay in the home?" says Lobchuk. "Discharge planning happens so fast. We

rarely have time to properly engage."

She is developing an empathy-centered intervention to educate nurses on how to better interact with family caregivers. She says they need to "stop in their tracks" and realize that different beliefs, values, and viewpoints can cloud a family caregiver's account of the patient's situation and well-being.

Her earlier research explored the stigma assigned to patients with lung cancer, given the recognized link to smoking. In her study of more than 300 lung cancer patients and their family caregivers, she found that 35 per cent of these caregivers blamed the patient for their current situation. Caregivers harbored even more anger and showed even less empathy when the patient continued to smoke after their diagnosis.

Family caregivers might also need guidance to better assess how much pain their loved one is in, Lobchuk notes, given that patients often don't report the worsening of symptoms, to keep from being a further burden. Lobchuk also found that the more that caregivers worry, the more they overestimate how concerned the patient is about their illness.

She hopes to establish a caregiver communications lab where she can put her intervention into action and videotape discussions between the different parties involved. Through this insight about varied viewpoints, nurses could better teach family caregivers how to meet the needs of the patient, and better evaluate feedback from these caregivers to determine how the patient is really doing.