

Bringing Research to LIFE

In Brief

Of mice, the man

Geoffrey Hicks, Biochemistry and Medical Genetics, has received the researcher of the month award from Canadians for Health Research (CHR).

Hicks' research aims to understand the relationship between genes and their specific functions in everyday activities and in disease promotion. He uses gene-knockout mice to elucidate these processes and he is now in the process of generating a mouse cell library that will contain mutations in every gene in the mouse genome; a boon to genetic research.

Hicks is a Canada Research Chair in functional genomics and the Director of the Manitoba Institute of Cellular Biology's Mammalian Functional Genomics Centre, a centre in the Manitoba Institute of Cell Biology, which is a joint institute between the University of Manitoba and CancerCare Manitoba.

CHR is a national, not-for-profit organization dedicated to engaging Canadians in understanding health research issues, scientific processes and their impact.

Upcoming

Cafe Scientifique: What is Age-Friendly?

Monday, October 27, 2008

7:00 PM

McNally Robinson, Polo Park
(1485 Portage Avenue)

Admission is free.

For more information, contact:
Lindsay Fagundes
e-mail: Lindsay_Fagundes@umanitoba.ca
Phone: (204) 474-9020

The Road to Stockholm- A Nobel Mission

Friday, November 7, 2008

11:00 AM

343 Drake Centre
IH Asper School of Business

Please RSVP
Seating is limited
e-mail: kshearing@sbrc.ca
Phone: (204) 235-3206

Where did all the safe food go?

BY SEAN MOORE

Food borne illness makes us and our economy sick, and unless major changes take place a healthy future remains precarious, a University of Manitoba professor said, and will say again.

Food Science's Rick Holley will deliver this year's first free public lecture on October 21, as part of the University's Bringing Research to Life speaker series (formerly Get to Know Research at Your University), details below. He will speak about Canada's food safety issues.

"I want people to recognize that there are some significant deficiencies in the food system in Canada and there is a need for the government to take some very specific action to address these issues," Holley said.

"I want to put this food borne illness outbreak we recently saw into some perspective in terms of what is down the road for us as a society."

Holley said we're too reliant on inspection of food and not food systems (like ensuring pasteurization is properly performed), we're not gathering and sharing good data about food borne illnesses so our surveillance programs are impotent, and our legislation needs retooling.

Right now the Canadian government is under pressure to inspect food for its safety.

"But you can't inspect safety into food. Anyone who thinks you can is wrong. You have to build safety into food. American car manufacturers

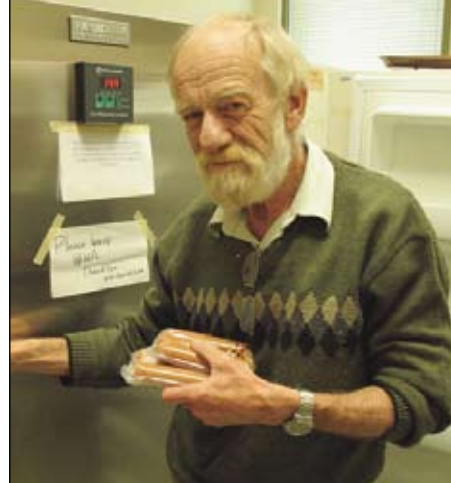


Photo by Sean Moore

Food Science's Rick Holley will give this year's first free public lecture at the Bringing Research to Life speaker series (formerly Get to Know Research at your University). He will speak about food safety issues.

learned long ago that you can't inspect safety into automobiles; you have to build it in. And it's no different for food manufacturing."

Because bacteria like *E. coli* O157:H7 can live in one farmer's cow but not another, inspecting cows is in vain: you can't inspect them all, and there is no guarantee that after you give Daisy a clean bill of health, she won't turn around and drink from the trough a contaminated Betsy just visited.

Rather, begin by ensuring you don't feed cows *E. coli* O157:H7. A study conducted last year in the eastern US found 17 per cent of feed harboured *E. coli* O157:H7. Given that a substantial

amount of Canada's feed comes from the US, how, Holley asks, do we think we'll keep our cows free from it?

What is more, about 25 per cent of feed used internationally is contaminated with *Salmonella*, Holley said. The manure produced from these feeds, if used as fertilizer, may result in us ingesting these bacteria. Or our dogs, which then lick humans and pass the bug along.

Once people fall ill, poor and incomplete data gets collected. There is, for instance, no standard for what gets reported to Ottawa, and the national hodgepodge of data pertaining to animals, feed and humans, often gets pooled together. Diluted, the data is no longer useful in predicting food borne illnesses. In short, we lack a database that can allow us to identify which organisms or foods make us ill most frequently, so we can't manage the risk.

Every year, according to a federal government website, 11 to 13 million Canadians suffer from a food borne illness. When dramatic events occur, like the recent *Listeria* outbreak, the world takes note. Our trading partners like China get scared about our poor food products just as easily as we get scared of, say, their powdered milk. Reputations affect treasuries.

To learn more about the issues, come to Holley's free lecture, "Oops! Where did all the safe food go?" on October 21, at 7 p.m. in the Robert B. Schultz Lecture Theatre, St. John's College.

Helping save soldiers

BY SEAN MOORE

"It's a noble project. They come to us because we're losing soldiers and they want to change that," Nabil Bassim said.

Bassim is a Professor of Mechanical and Manufacturing Engineering and for the past 25 years he has worked with Canada's Department of National Defense (DND) to test and quantify the high strain rates of armour materials for use in military vehicles.

"I want to know how materials behave when they get hit by a projectile. How do they perform? Do they break instantly, do they shatter or they just deform? That is the basic area of my research," Bassim said.

Bassim takes cylinders of various metals and ceramics the DND sends him, each half the size of a fist, and he puts it in a specimen holder at the end of a metal tube. Inside the roughly three-meter-long tube slides a two-kilogram steel rod. An air cannon shoots the rod at 50 meters a second into the specimen, instantly crushing it into a coin. Bassim then cuts into the specimen and examines it for shear bands under a microscope.

Shear bands, at their most basic level,



Photo by Sean Moore

Nabil Bassim, Mechanical and Manufacturing Engineering, studies the high strain rates of armour materials, like this ceramic sample sitting on his desk.

are folds in the material. They are not cracks, although cracks predominantly reside in shear bands. Rather, they are manifestations of impact; lines that show how the force travelled through the material and how its crystalline structure deformed as a result. They betray a material's inherent weakness and for armour's purpose, the fewer shear bands the better.

Bassim uses a series of sensors to

collect, millisecond by millisecond, heaps of data pertaining to each material's performance during impact. He uses this information to construct a failure mode diagram.

"We are cataloguing a number of materials of interest to the sponsor in order to see how these materials react in a target-projectile system so they can determine which design is best to use in any given circumstance" he said.

And as with most experiments, he's uncovered some surprises. For instance, Bassim found soft materials, like pure copper, much harder to produce shear bands in than he previously reckoned. The reason has to do with copper's crystalline structure and its ability to uniformly move very quickly.

"Doing this work feels good. If it saves lives, of course it is good. I don't feel I am researching for destruction. It's research that saves lives. You can make justifications that we are protecting our homeland, but we can use this information for a lot of things, like building better railway tracks or finding materials that can be used in jet engines to better withstand collisions with birds. It's research to save lives."

umanitoba.ca/research

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Senate approves proposed stadium site

Senate approved the siting of a proposed football stadium within the university's designated sport and active living precinct. The proposed site would position the new 30,000 seat stadium at the corner of Chancellor Matheson and University Crescent. The stadium site plan does not envision any use of the Southwood lands.

The exact details of the stadium plan are very much at the discussion stage, but it will, clearly, have a major impact on the Fort Garry campus. The tennis courts will have to be relocated and a traffic plan will be undertaken as part of the project. Noise and light pollution were raised as a potential concern, but Debbie McCallum, vice-president (administration), said the stadium's design, which involves placing

SENATE

the playing field 25 feet below ground level, should help alleviate those issues. As compared to the CanadInns Stadium at Polo Park, McCallum said the lights and – ideally much of the crowd noise – would be directly down into the bowl, with the partial roof helping to keep a lid on both noise and light pollution.

Parking should actually be improved at the university with a parkade taking the place of some of the adjacent surface parking.

Senate member Gene Waltz said the site under consideration seems like a tight fit and asked if a position closer to Pembina Highway was ever considered.

"The property next to Pembina

Highway was never seriously considered," McCallum said. "That property could eventually be used for the future expansion of Smartpark."

"The proposed site does look small but when you see the plan it actually fits quite nicely and there's even room for 280 parking stalls and a plaza," McCallum said.

By keeping the new stadium in the sports precinct the university will also be able to integrate it with University Stadium, and the other existing sports facilities.

President David Barnard was happy to see Senate back the site plan for the proposed stadium.

"There's no reason to think this project will not be successful and in the short term we'll see a significant

improvement in the facilities available for our students," Barnard said. But it's the long term potential that is most promising with the stadium serving as a lever to draw the community into a tighter relationship with the university.

Senate also approved the siting of the 2,000-square foot WestGrid Computing Building, which will be tucked in between the Armes Building and the Buller Building. The site had been occupied by a chilled water building, which is no longer operational. The new building will contain high performance computers, creating a need for major electrical and cooling requirements. An upside of the site is that the heat generated by the WestGrid Computing Building can be used to heat the adjacent science complex.

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Enabling Greatness: Perspectives on Leadership

What must leaders do to produce a context in which people accomplish great things?

Join University of Manitoba President David Barnard and a panel of national leaders who will address this question from a variety of perspectives, providing insights from government, universities, and the private and public sectors.

Monday, October 27
1:30 p.m. to 4:00 p.m.

Manitoba Room, University Centre, Fort Garry Campus

Leadership Panel:

Don Black,
Executive Chair, Greystone Managed Investments

Andrew Coyne,
National Editor, *Maclean's*

David Dodge,
Past Governor, Bank of Canada and Chancellor, Queen's University

Claire Morris,
President, Association of Universities and Colleges of Canada

Ilse Treurnicht,
CEO, MaRS Discovery District, Toronto

Moderator:
Gail Asper, President, CanWest Global Foundation

Symposium Summation:
Paul Vogt, Clerk of the Executive Council, Manitoba Government

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**Waste Reduction
Week in Canada
Oct. 19-25, 2008**
www.wrwcanda.com



TOP SECRET SPIES NEEDED!

The UM Waste Prevention Office is seeking
UM department representatives to have fun and
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Waste Reduction Week

The Task: Sneak around, watch your colleagues and decide who deserves to win a prize for doing something environmentally responsible. *Prizes will be provided.

Time Required: Minimal (the task can be completed during coffee breaks or lunch).

The deadline to submit your name as an Eco-spy is **Friday, October 17th, 2008**. *Psst! Due to a required high level of secrecy there can only be one spy/dept. Don't delay—call now!*

For more information or to submit your name please contact:



The UM Waste Prevention Office
wpo@umanitoba.ca or 474-9608

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