

Fall 2008 Series

Science Café

Wednesday evenings • 7:30 p.m. • Jack and Wezzie's Coffee House (formerly Fields)

Scientists and engineers from local universities facilitate informal and lively public discussions of important science-related topics as part of the Science Café series.

Join the discussion and relax with a cup of coffee or a meal as topics from air pollution realities and myths to mad cow disease and invasive species in the St. Lawrence River are covered.

Biology of prion disease

You may have heard of strange transmissible degenerative brain diseases such as kuru in New Guinea, mad cow disease or bovine spongiform encephalopathy (BSE), Creutzfeldt-Jakob disease (CJD) of humans, scrapie of sheep, and chronic wasting disease of elk. But did you know that all of these diseases are caused by a misfolded form of a normal protein encoded by one of our own genes?



Join Biologist Ed Moczydlowski, chair of the Department of Biology at Clarkson, as we trace the bizarre but fascinating story of the Nobel Prize winning discovery of prions in an attempt to separate the hype from the horror. Warning: sensitive topics such as cannibalism, downer cattle, Korean protests against U.S. beef imports, GMOs and biotechnology will be included.

September 24

The Rule of 1,000 and environmental pollutants



To protect human health, we measure outdoor air quality. But since we spend much of our time indoors, it is actually the indoor air quality that has a greater impact on our health. The Rule of 1000 states that the fraction of material released that actually enters someone's breathing zone is 1000 times higher for a pollutant released indoors than for a pollutant released outdoors. To reduce your exposure to indoor pollutants, the most important thing you can do is control the source in your home or business.

October 29

This Science Café discussion led by Clarkson Professor of Civil & Environmental Engineering Andrea Ferro will focus on how emitted pollutants become inhaled pollutants and what can easily be done to mitigate inhalation exposure.

Find out more about Science Cafés in general at:

• <http://www.sciencecafes.org>

Find out more about Clarkson's Science Café at:

• <http://www.clarkson.edu/sciencecafe>

E-mail: ScienceCafe@clarkson.edu

The weirdness of reality through the eyes of a physicist



Our everyday life experiences are constrained to a narrow slice of reality, limited by our size, our particular place in the universe, the filtering of our own senses, even by the typical speed of our rockets, planes and cars. Science, however, paints an unimaginably vaster reality where our most basic concepts on the very nature of space and time are severely challenged, offering equally surprising views on such mundane questions as what constitutes a solid object, and why do apples fall from trees.

September 10

Join Clarkson Professor of Physics Daniel ben-Avraham as we explore some of the eye-opening lessons from modern physics, including relativity and quantum mechanics.

size matters: life in the st. Lawrence River

Our northern border here in the North Country is a globally significant river: The St. Lawrence River. Surprisingly, we know relatively little about the ecology of this section of the river despite our concerns over invasive species, water levels and water quality issues.

Clarkson Biology Professor Michael Twiss, director of the Great Rivers Institute, will present The St. Lawrence River from the view point of limnology (freshwater oceanography), and set the stage for an informed discussion of ecological and social concerns regarding this impressive natural wonder.



October 15

coffee, gossip and math



It is surprising how mathematics can be used to aid in making predictions, decisions and understanding the world around us. For example, Newton's simple law of cooling can help you calculate when your coffee will cool down enough to take a sip. Suppose that you start a rumor that we are getting a casino on Market Street. Mathematics can help predict when the entire village will hear this news. There is even a mathematical model to predict when your children will ask, "Are we there yet?" when going to Grandma's house.

November 12

In this Science Cafe discussion, join Mathematics Professor Kathleen Fowler as we examine the mathematical modeling process and then brainstorm a model for a topic chosen by the group.