

Volume 32, Number 3

March 2025

[www.ualberta.ca/association-retired-academic-staff](http://www.ualberta.ca/association-retired-academic-staff)

# Epilogue

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## Editor's note

As I wrote for the December *Epilogue*, that week brought winter – ice pans floating in the river, a foot of fresh snow on the ground, and sub-zero temperatures with wind chill of January scale already. Then we had the worst February I can remember, with temperatures minus 20 C with wind chill for days on end. Can it finally be over now? Hard to believe that it was + 7 C at 7 am this morning (February 23). Will it last?

In this issue you will find an account of the speakers' presentations at the November Lunch With ... events in January and February, and a special report from the Current Affairs Salon. The In Memoriam box has fewer names than in the December issue, but includes several persons who were well known on campus. To fit the weather we have suffered through most of February, an old column by the late Keith Smillie explains how *wind chill* is factored.

## Notices

The last Lunch With ... event of the Winter term will be held on Wednesday 26 March. The presentation will be by Dr. Daniel Fried, Chair of the Department of East Asian Studies, who will speak on "The cosmopolitan character of ancient Chinese literature". The lunch will begin at 11:30 am.

Lunch With ... events are now held in classroom 1-38 in the University Terrace building. The meals are catered by the restaurant Upper Crust; and at \$20 per person, will feature soup, sandwiches, and dessert squares. So that we know how many meals to order, please indicate your plan to attend at least two days in advance of a date to [emirhse@ualberta.ca](mailto:emirhse@ualberta.ca). **Alert:** an authorized One Card is now required to access the University Terrace building. If your card fails to work, we will have someone stationed at the door to let you in.

### **The Lunch With ... event of 28 January**

The first presentation of the Winter term was by James LaVoie, an Edmonton artist specialized in the production of beautiful objects of coloured glass: beads, vessels of various forms, arrangements of flat glass segments. Mr LaVoie reviewed the history of the art, with illustrations. Glasswork first developed in Egypt in the 3<sup>rd</sup> millennium BC and appeared slightly later in Mesopotamia. It appeared in China in 300 BC, in Greece by 200 BC, and was well established in the Roman Empire. Stained window glass mounted in sheets was well developed in the Middle Ages. In the early Industrial Age, means of mass production developed but artwork in glass continued. In the 1960s, techniques improved for studio glass artwork, and beautiful vessels and trays were produced. Mr. LaVoie displayed a number of pieces produced by himself.

### **The Lunch With ... event of 26 February**

The topic was vaccination, and attendees listened intently to an informative presentation by Dr. Shannon MacDonald of the Faculty of Nursing and a Canada Research Chair. A specialist in pediatric medicine, her focus is on standard childhood immunization; and she addressed the variety of reasons for a decline in recent years. Vaccinations are commonly performed by public health nurses or in clinics according to a schedule by age of the child. With the COVID pandemic lockdowns, there was a drop in coverage; and a high percentage of children need to be caught up. Many parents face a variety of practical problems in accessing information and medical facilities. At present only 70% of children are completely covered by standard immunization, 25% are incompletely vaccinated, and 5% are unvaccinated. Dr. MacDonald stressed that “vaccination hesitancy” is not the same as “anti-vaccination”. In the former case, one must engage in a trusting relationship and gain information from a valid source.

### **A Special Current Affairs Salon**

On February 6 the Current Affairs Salon met for a discussion of how Canada should be responding to Trump’s actions after his inauguration. The idea was also to comment on how the selection of a new Liberal leader (and Prime Minister) was going to play out in terms of dealing with the new American President. Ten members of the Association participated in the Zoom meeting, and a vigorous discussion took place for over an hour.

By the time of the meeting, it was clear that Mark Carney had entered the race for the leadership of the Liberal Party, with his major competition coming from Chrystia Freeland. However, very little time was spent discussing the upcoming change in the position of Prime Minister and the election to follow. Trump’s tariff threats had emerged; and the question arose as to how Canada might handle the tariffs: countervailing tariffs? Export controls on energy? Although Trump’s threat to buy Greenland and take back the Panama Canal garnered little discussion (as it was assumed that these proposed actions were more of a distraction), the threat to democracy was a matter of concern. Trump was heard to say that

this election was the last one that people would have to vote, and there was speculation that he might find a way to extend his four-year term.

After our meeting, Trump started to sign Executive orders. The most significant ones were

1. 25% tariffs on aluminum and steel for March 4 and a further 25% a few days later.
2. Empowering Elon Musk to tear down several federal government departments, including USAID and Department of Education.
3. Withdrawal from the World Health Organization and the Paris Agreement on Climate Change.

Also there have been foreign policy changes, the most significant signifying an intent for the U.S. to take control of Gaza and forcing Ukraine into peace talks with Putin with the understanding that Ukraine will have to give up territory and pledge not to join NATO at any time in the future.

The possibility of Trump forcing Canada into economic submission with the intent to annex Canada as a 51<sup>st</sup> state is not off the table. It is quite possible that the next Current Affairs Salon will revisit the question of the state of U.S./Canadian relations.

*Gordon Rostoker*

### **In Memoriam**

<b>Alvin Baragar</b>	Mathematics
<b>Allen Carlson</b>	Philosophy
<b>Lynn Erbe</b>	Mathematics and Statistics
<b>Derek Griffiths</b>	Biomedical Engineering
<b>Peter Meekison</b>	Political Science
<b>Brian Nielsen</b>	Physical Education
<b>Raj Pannu</b>	Education and Policy Studies in Sociology

## Mousing Around

*Keith Smillie*

### 67. Wind Chill

The temperature is often given in news reports during the winter season in a manner similar to the following: “The current temperature is now -22 degrees but with a wind of 13 kilometers per hour it feels more like -30.” The last figure is of course the wind chill factor. During one prolonged very cold spell in Edmonton last winter, I decided to find out a little about wind chill.

First of all, I consulted my *Collins Gage Canadian Paperback Dictionary*, which had the following two entries: “**wind chill**: the chilling effect of wind in combination with low temperature; **wind chill factor**: a measure of the combined chilling effect of wind and low temperature”. Wanting additional information, I googled “wind chill” and came up with more than 70 million results, from which I consulted the first, which was the Wikipedia entry; and also Canada’s Wind Chill Index at [www.ec.gc.ca](http://www.ec.gc.ca). Incidentally, *google* is now an accepted word, and has the following dictionary definition: “google v Trademark to search for information on the Internet, particularly by using the Google search engine (Google™ is the trademark of Google Technology Inc.)”. The entry following “google” was “googol,” which is defined as “a number represented by one followed by a hundred zeros...” and which has appeared in an earlier Mousing Around column. There is a rumour that the Google company was supposed to have been named “Googol” but that someone couldn’t spell “googol”. But I appear to be digressing, so let me return to a consideration of wind chill.

The wind doesn’t change the outside air temperature but only the temperature we feel as the wind is blowing away the warm air that surrounds exposed skin. There are several methods of calculating a wind chill factor, but they are all based on research carried out by scientists Paul A. Siple and Charles F. Passeli, working in the Antarctic in the 1940s. Their work was later used by the U.S. army to design warmer clothing for soldiers. Originally the wind chill index was given as the loss of heat in kilopascals per hour from a square metre of exposed skin for a given air temperature and wind velocity. This figure was then converted to the apparent decrease in air temperature.

In a move to adopt a uniform method of calculating the wind chill factor, Environment Canada held an Internet workshop in April 2000 that attracted more than 400 participants from 35 countries. Almost all participants agreed that there should be some international standard in reporting wind chill. During 2001 a group of Canadian and U. S. scientists and medical specialists worked to develop the present wind chill index. The Canadian Department of National Defence assisted by conducting experiments with volunteers, six men and six women, who were exposed to a variety of temperatures and wind speeds inside a refrigerated wind tunnel. They were dressed in winter clothing with only their faces exposed to the cold. Also they walked on treadmills, and were tested with either wet or dry faces. To ensure that

the new index would serve the needs of Canadians, Environment Canada conducted surveys across the country. The wind chill index that was finally adopted is not an actual temperature but a measure of the feeling of cold on the skin, and is given without a degree sign.

I can't resist giving the expression for the adopted wind chill factor. It is

$$T_{wc} = 13.12 + 0.6215T_a - \frac{11.37V^{+0.16} + 0.3965T_aV^{+0.16}}{11.37V^{+0.16} + 0.3965T_aV^{+0.16}},$$

where  $T_a$  is the air temperature in degrees Celsius and  $V$  is the wind speed in kilometres per hour. (Evaluating this expression for a given temperature and wind speed requires something more than a four-function pocket calculator!) For the example given in the first paragraph, with a temperature -22 degrees and a wind speed of 13 kilometres per hour we may calculate the wind chill factor to be -30.8 .

If one really wants to calculate the wind chill for a given temperature and wind speed, there are a number of calculators available on the Web, including one on the Environment Canada website whose address is given in the second paragraph. Also, there is a table giving the wind chill factor for a range of temperatures and wind speeds.

Other methods of calculating wind chill have been proposed, including one in which the wind speed in miles per hour is simply subtracted from the Fahrenheit temperature. Also, the Australians have a more complicated formula that takes account of humidity.

While working on this column I stumbled on a CBC News Web page that gave a number of interesting facts relating to wind chill. I will use two of them to end this column:

- The coldest wind chill recorded in Canada was at Pelly Bay, Nunavut, on January 13, 1975, when a temperature of -51 Celsius and a wind speed of 56 kilometres per hour gave a wind chill of -92.
- The wood frog, which is commonly found across Canada, has what is called freeze tolerance. In winter, the wood frog hibernates on land, usually using only a pile of leaves for shelter. Because this place leaves it exposed to the cold, frost penetrates its skin and freezes its internal organs, halts blood flow, and stops respiration. The heart stops beating, and muscles stop moving. The wood frog's body functions return to normal when it thaws.

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