

SEMINAR NOTICE

*Department of Physics and Engineering Physics
University of Saskatchewan*

SPEAKER: Dr. Joyce M. McBeth
Department of Geological Sciences

TOPIC: *Hartnell's Time Machine: unravelling mysteries of metal exposure and diet on the Franklin Expedition*

DATE: Tuesday, March 28th, 2017

TIME: 3:30-4:30 p.m.

PLACE: Physics 103

ABSTRACT:

One of Canada's most enduring mysteries is the fate of the Franklin expedition. The voyage to find the Northwest Passage through the Canadian Arctic (1845-1848) was led by Sir John Franklin; it ended in the tragic loss of his entire crew. In this study, we have examined hair and nail samples from John Hartnell, one of three men from the expedition who were buried on Beechey Island early in the expedition. Hair and nail samples record blood concentrations of metals as they are secreted; our hypothesis was that these tissues could be used to determine John Hartnell's exposure to lead over the course of the expedition. We analysed spatial trends of lead, copper, and zinc in the nail using micro-XRF mapping, stable isotopic measurements, and LA-ICP-MS. We translated these spatial trends into a temporal record of John Hartnell's levels of these elements. Our findings indicate that he was not exposed to significant concentrations of lead during the voyage. Our data also show that he was zinc deficient throughout the voyage, perhaps hastening his ultimate demise from tuberculosis. These results challenge existing theories that the crew members were exposed to high levels of lead on the expedition. This study also provides new insight on the possible fate of the other crew members, including the role that diet and zinc deficiency may have played in the lives of the stranded crew members before they died.

Coffee and Cookies will be served in the Physics lounge at 3:00 p.m. for those attending the seminar.