

Topographies Seminar Series Presents:

"Tracking Fugitive Mine Dust in a Changing Climate: Ground and Earth Observation-based Approaches"

Mine site operations that generate dust may include blasting, drilling, ore extraction, crushing, operation of a concentrator, and materials storage/stockpiling/transportation making it difficult to monitor and manage due to its association with a variety of mining activities and its unconfined spatial extent. Dust generation and transport at mine sites is an environmental concern due to the unweathered nature of the rock being excavated and the potential presence of metal(loid)s, which when dispersed can contribute to the transport and accumulation of contaminants in water, soil and biota. Dust also has the potential to lower the albedo of snow contributing to early snowmelt, mix with available forage leading to detrimental effects on local habitats, and may influence other ecosystem processes as it mobilizes through air and water. At present, there remain challenges to fully characterize (geochemically and mineralogically) and to map the regional distribution of fugitive mine dust from a site into the surrounding environment. Here we will discuss advancing field and laboratory techniques and earth observation tools, providing valuable information to evaluate the regional distribution of dust around mine sites in Canada.



Dr. Philippa Huntsman joined CanmetMINING, Natural Resources Canada in 2008 as a Research Scientist in Environmental Geochemistry. Prior to that, she spent 14 years in Botswana, firstly working as a consultant in rural village water supply projects and then as a researcher at the University of Botswana. At CanmetMINING, Philippa's research has focused on assessing the reactivity of metals, metal compounds and alloys in aqueous media for aquatic hazard classification, researching mine dust and the impact of climate change on mining in Canada. It is through the fugitive mine dust research program that Philippa and the dust research team have adjusted their approach to scientific research by prioritizing the co-development of community-driven research projects. This experience has highlighted the importance of engagement to ensure proposals can be responsive to Indigenous communities. Philippa is an adjunct professor at Queen's University and a recent addition to the Adjunct Faculty with the Department of Geography and Environmental Studies at Carleton University.

Dr. H. Peter White is also a recent addition to the Adjunct Faculty with the Department of Geography and Environmental Studies at Carleton University and is presently a Research Scientist/Environmental Physicist at the Canada Centre for Remote Sensing Division, Natural Resources Canada in Ottawa. His research focuses on advancing Earth Observations applications to better characterize our environment. As an active member of the Canadian Remote Sensing Society / Société Canadienne de Télédétection, Dr. White is presently an Associate Editor of the Canadian Journal of Remote Sensing / Journal canadien de télédétection. He is presently lead of the Earth Observation for Cumulative Effects (#EO4CE): Regional Site Monitoring and Remediation Project, with research ongoing at active and abandoned mine sites across Canada. Outside of work, Peter is an avid curler and dragonboater, always looking for ways to better enjoy the outdoors.



Wednesday, December 3rd, 2025

2:30 - 4:00

In-Person, Loeb A220

All Welcome



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The Geography and Environmental Studies Departmental Seminar Series is committed to accessibility for persons with disabilities. Please send requests for accommodation to Nika.Linseman@Carleton.ca