Distinguished Lecturers

CIM Professional Development

CIM ICM — Canadian Institute of Mining, Metallurgy and Petroleum
Institut canadien des mines, de la métallurgie et du pétrole

James A. Finch

Gerald G Hatch Professor Emeritus in Mining and Metallurgical Engineering, McGill University

Reno Pressacco

Associate Principal Geologist, SLR Consulting

Caius Priscu

Co-founder and Principal Geotechnical Engineer, Priscu and Associates Consulting Engineers Inc.

Douglas (Doug) Milne

Professor of Geological Engineering, University of Saskatchewan

William E. (Bill) Roscoe

Principal Geologist – Mining Advisory, SLR Consulting

CIM Distinguished Lecturers
2024-2025

The program

The CIM Distinguished Lecturers program started in 1968 and has continuously provided a lineup of individuals who have shared their knowledge with the mining community for over five decades.

The program is offered to 30 branches, 11 technical societies and 8 student chapters. Universities can also request a lecture.

Every year, the lecturers are elected by their peers through the CIM Awards program and hold the title for a complete season (September to June).

CIM is privileged to count more than 260 of the industry's finest as its lecturers. Because the motto "once a lecturer, always a lecturer" defines our pride and dedication in ensuring that the learning curve is endless, a complete list of past lecturers is available at **www.cim.org**, where you can benefit from the ever-growing pool of expertise that the program has to offer.

**Lecturers are available for your online or in-person events.
Scan this code for more information.**

James A. Finch

Gerald G Hatch Professor Emeritus in Mining and Metallurgical Engineering, McGill University

Cells, Banks, and Circuits

Since the 1980s developments in flotation cells have come out of the lab and into the plant. Flotation columns came to dominate cleaning stages and prompted development of the Jameson Cell now experiencing growing acceptance in sulphide plants. Other examples include the Imhoflot™, Reflux™, Staged Flotation Reactor, and Hydrofloat. In the first part of the talk, these cell developments are organized through a first principles approach to flotation kinetics.

After illustrating the performance advantages of cells in series to form banks, part two proposes and examines theories of bank optimization.

Performance is further enhanced by networking banks (stages) into a circuit. A method to judge circuit separation efficiency is introduced in part three which reveals the flexibility of the rougher-scavenger-cleaner network and illustrates an unexpected feature of the increasingly popular rougher-cleaner-cleaner/scavenger arrangement.

About James A. Finch

James A. Finch was a professor in the department of mining and materials engineering at McGill University from 1973-2014. Holding a succession of industrial research chairs, he supervised 50 PhD candidates, authored 400 + articles, and co-authored two books: *Column Flotation* (1990) and the *8th Edition of Wills' Mineral Processing Technology* (2016). He is a recipient of the Gaudin Award (SME), the Alcan Award, the Falconbridge Innovation Award, the Leo Derikx Synergy Award for Innovation (NSERC), and the IMPC Lifetime Achievement Award. He is a two-time recipient of the CIM Distinguished Lecturer and the CMP Best Presentation Award. A conference in his honour was held in Sudbury in 2009, and he was general chair of the XXVIII IMPC held in Quebec City in 2016. He is a CIM CIM Fellow. In 2002, he was elected to the Academy of Science of the Royal Society of Canada. He retired in 2014 as the Gerald G. Hatch Emeritus Professor in mining and metallurgical engineering.

Distinguished Lecturers

CIM ICM
Canadian Institute of Mining, Metallurgy and Petroleum
Institut canadien des mines, de la métallurgie et du pétrole

Reno Pressacco

Associate Principal Geologist,
SLR Consulting

"Reasonable Prospects" for Mineral Resource Estimation: What are they?

The use of computers and software packages has blossomed over the past 30 years to where practically all mineral resource estimates (MREs) are now computer-based.

Although many of the fundamental, time-tested, and proven principles relating to the estimation of mineral resources remain little changed from the pre-digital age, the evolution of computer technology has resulted in practitioners being required to develop new workflows that adapt these principles in the digital age. The current regulations require that mineral resource estimates must meet the "reasonable prospects for eventual economic extraction" (RPEEE) requirement. In practice, the RPEEE requirement is met with consideration of the technical and economic aspects relating to the mineral resource estimate.

The presentation will examine how practitioners can apply RPEEE considerations when preparing mineral resource estimates. The presentation will be of interest to all practitioners involved in the preparation or review of MREs, and any other of our industry colleagues who may rely upon the results of a MRE for decision making.

Some Common Flaws Encountered in Mineral Resource Estimation and How to Avoid Them

Preparation of a mineral resource estimate (MRE) is an essential component in the mining cycle, as errors that occur in an MRE will affect all following steps that rely upon its accuracy. Over the course of more than 40 years of preparing and reviewing MREs, SLR Consulting (Canada) Ltd. and predecessor Roscoe Postle Associates have observed many common errors. From our experience with over 1,000 projects, the most common errors are:

1) Insufficient planning and resource and time allocation for the MRE preparation and peer review,
2) Little to no consideration of reasonable prospects for eventual economic extraction,
3) Poor mineralization wireframe interpretations,
4) Lack of sufficient drill hole information (drill spacing too wide), and
5) Insufficient sample coverage.

The presentation will present some views and opinions of how practitioners can avoid some of the more common flaws encountered when preparing Mineral Resource estimates. The presentation will be of interest to all practitioners involved in the preparation or review of MREs, and any other of our industry colleagues who may rely upon the results of a MRE for decision making.

Distinguished Lecturers

CIM ICM Canadian Institute of Mining, Metallurgy and Petroleum
Institut canadien des mines, de la métallurgie et du pétrole

About Reno Pressacco

Since obtaining a Master's degree in mineral exploration from McGill University in 1986, **Reno Pressacco** has gained experience in mineral exploration, mine development, mine production, and providing consulting services to the mineral industry.

He has enjoyed a productive career as a geologist in the Canadian mining industry, working on a wide variety of commodities and deposit types in many locations across the world. A notable achievement during his career was to play a key role in identifying the economic potential of the Matachewan (Young-Davidson) gold deposit (Ontario) at the exploration stage. He was also involved in the early stages of the Cerro Negro mine (Argentina) where he participated in the discovery phase and prepared some of the initial mineral resource estimates for the Eureka Vein.

More recently he has participated in crafting the *CIM Mineral Exploration Best Practices Guidelines* (2018), the *CIM Mineral Resource and Mineral Reserve Best Practices Guidelines* (2019) and the *CIM Industrial Minerals Leading Practices Guidelines* (2023). He received the CIM Robert Elver award in 2020. He is a member of the CIM Mineral Resources and Mineral Reserves Committee and the United Nations Minerals Working Group. In 2023 Reno established the Pressacco scholarship which will be administered by the CIM Foundation.

Distinguished Lecturers

CIM ICM — Canadian Institute of Mining, Metallurgy and Petroleum
Institut canadien des mines, de la métallurgie et du pétrole

Caius Priscu

Co-founder and Principal Geotechnical Engineer, Priscu and Associates Consulting Engineers Inc.

Tailings Management Is About Water Management

One common denominator for most TSF failures in the last four decades has been inadequate water management. Whether it was pond location control, excessive seepage, high phreatic surfaces in the dams, poor seasonal planning or monitoring, or uncontrolled groundwater issues that were not considered in design, water has been at the core of many such unfortunate events. This presentation will discuss some of these failures and how water can be identified as the "real culprit" in most cases. It will also discuss some leading practices in water management as they relate to dam safety. The presentation will also take a hard look at (and bust) some myths, that somehow found a place in tailings management practice, and which have no impact in ensuring resilience and robustness of TSFs when managing upset water conditions.

Lessons for Tailings Managers and Engineers from Maritime Industry Failures
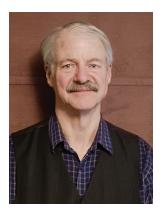
In this presentation, a parallel is drawn to some real-life case studies of catastrophic failures from the maritime industry and its own unfortunate events, and what we – in the mining industry - could learn from them. The parallel discusses causation from both a technical and a human performance perspective, noting that commonality with tailings management is strikingly close. Furthermore, the presentation discusses how ill-defined, uninformed decision-making processes and human errors resulted in such tragedies, or impacted the outcomes and consequences of unwanted events the maritime industry has seen in the last couple of decades. The mining industry is still human-centric when it comes to dealing with mother nature and its elements in a natural resources sector, no matter how much technology, automation, and AI is being implemented. Learning how to improve human performance and minimize human errors is most likely one of the more challenging aspects of a tailings facility risk management program, needing increased attention.

About Caius Priscu

Caius Priscu is Co-founder and Principal Geotechnical Engineer with Priscu and Associates Consulting Engineers Inc., based in Lake Country, BC. He has over 30 years of experience in the field of geotechnical and geo-environmental engineering related to the mining and water resources industries on five continents. His specialty is dam engineering, dam safety, risk management, and governance of both tailings storage facilities and water retaining dams. Caius has been a tireless volunteer and true supporter of many technical not-for-profit organizations, including CDA, MAC, CIM, SME, the International Council for Mining and Metals (ICMM) Tailings Working Group, in London, England, and the Chilean National Committee on Large Dams (ICOLD Chile) in Santiago, Chile among others. He is the recipient of the CDA 2023 Peter Halliday Award for Service and is an Honorary Member of both the Romanian National Committee on Large Dams (ROCOLD), as well at the Technical Sciences Academy of Romania. He holds a PhD in Mining Engineering from McGill University and is a registered Professional Engineer in B.C.

Distinguished Lecturers

CIM ICM
Canadian Institute of Mining, Metallurgy and Petroleum
Institut canadien des mines, de la métallurgie et du pétrole

Douglas (Doug) Milne

Professor of Geological Engineering, University of Saskatchewan

Approaches for Interpreting Instrumentation and Mapping Data for Rock Mechanics Design

Stable underground mine design relies on data and judgement to estimate rock mass properties, stress conditions and opening geometry behaviour. The data can be obtained through detailed data collection and local instrumentation programs coupled with numerical modelling. This approach can be expensive and provides detailed data on very localized conditions of an often highly variable rock mass and stress regime.

This presentation highlights the value of ongoing simple instrumentation and mapping techniques. Basic rock mechanics theory is coupled with simple interpretations to estimate material properties and stress conditions. When the collection, interpretation and application of the data is conducted on site, valuable information is obtained on the variable reaction of the rock mass and stress regime to continued mining. The data and methodology in this presentation are based on over 20 years of graduate student projects at the University of Saskatchewan. The approach presented follows work done by Dr. Rimas Pakalnis, University of British Columbia, and many others from UBC and the Noranda Technology Centre.

About Doug Milne

Doug Milne is a Geological Engineer with an MSc and PhD in mining-based rock mechanics from Imperial College and UBC. His 15 or so years of industry experience includes BC Hydro, Noranda Mines and Piteau & Associates. He has been a professor of geological engineering at the University of Saskatchewan for the last 25 years and his areas of research interest include stope stability and dilution, empirical design methods, as well as rock mass classification and field instrumentation.

Distinguished Lecturers

CIM ICM — Canadian Institute of Mining, Metallurgy and Petroleum / Institut canadien des mines, de la métallurgie et du pétrole

William E. (Bill) Roscoe

Principal Geologist –
Mining Advisory,
SLR Consulting

CANADIAN MINING
HALL OF FAME

Is the Net Present Value of a Preliminary Economic Assessment Indicative of the Market Value of a Mineral Property?

A Preliminary Economic Assessment (PEA) is often the initial evaluation of a mineral property after mineral resources have been delineated. The main purpose is to determine if the property offers sufficient encouragement to justify further expenditures to collect more data for more rigorous economic analysis. A discount rate of 5% is commonly used for cash flow analysis in the PEA to calculate the Net Present Value (NPV). Is the NPV at this discount rate indicative of the market value of the property?

To investigate this question, my colleagues and I compiled information on numerous properties with PEAs over the past decade. For those properties which were bought and sold, we compared the NPV of the PEA with the Market Value of the transaction on each property. For properties that did not transact, we compared the NPV with the adjusted market capitalization of the company for which the property was its major asset.

We observed that the NPVs in the PEAs were significantly higher than both the market values of the transactions and the adjusted market capitalizations. We concluded that to bring the NPV into line with the market value and market capitalization, a discount rate in the order of 15% to 20% would be required.

About Bill Roscoe

Bill Roscoe is a geologist with more than 50 years of experience in the mining industry in Canada and internationally. After working as an exploration geologist and consultant, he co-founded Roscoe Postle Associates Inc. (RPA) in 1985 and served as president, chairman, and chairman emeritus until its acquisition by SLR Consulting in 2019. He was instrumental in growing RPA into a nationally and internationally recognized geological and mining consulting firm with offices in Toronto, Vancouver, Denver, and London.

Since 1999 Roscoe has been co-chair of the CIM Special Committee on Valuation of Mineral Properties (CIMVAL). The CIMVAL Standards are now globally recognized and referenced by the TSX-V and other international stock exchanges. He represents CIMVAL on the International Mineral Valuation Committee (IMVAL) and is a past chair.

Roscoe has published many papers and given numerous presentations and workshops over the past 40 years in Canada and internationally on valuation of mineral properties and mineral resource estimation. He taught a course for five years on mineral resource estimation as an adjunct professor at the University of Toronto.

Roscoe has a B.Sc. (Eng.) from Queen's University and M.Sc. and Ph.D. degrees from McGill University, all in geological sciences. He is a P.Eng. in Ontario and British Columbia and a Life Member of CIM, PDAC, and the Association of Mineral Exploration BC.

Roscoe was previously a CIM Distinguished Lecturer in 2003-2004 and presented on *The Development of a Canadian Code and Guidelines for Valuation of Mineral Properties*.

Distinguished Lecturers

CIM ICM — Canadian Institute of Mining, Metallurgy and Petroleum
Institut canadien des mines, de la métallurgie et du pétrole