



INTERNATIONAL

MINING

Technology



HALL OF FAME

Malcolm Scoble / OUTSTANDING INNOVATOR



Dr. Malcolm Scoble is a Professor at the University of British Columbia specialising in surface and underground mine design and planning; mine-mill integration; occupational health and safety; sustainable mining and mining with communities. He is nominated as much for all the mining engineers he has inspired over the decades as for his own many achievements.

Malcolm Scoble holds a B.Sc. in Mining from the Camborne School of Mines, UK, an M.Sc. in Mining Geology and Exploration from Leicester University, UK, and a Ph.D. in Rock Mechanics from Nottingham University, UK, where he was also a lecturer.

While working for the Hudson Bay Mining and Smelting Co (HBM+S) in Canada Malcolm was involved in the formation of the company's first computer group. He was trained by IBM as a systems analyst, and started to apply himself to developing mainframe computer applications for the mines.

He was Director of the Mining Engineering Program at McGill University in Montreal for nine years, and holder of the endowed Webster Chair in Mining Engineering from 1990 through 1997. He was associated with the establishment of the Cooperative Program in Mining Engineering (the first Co-op degree at McGill). Over the years at McGill, much of his mining automation research efforts were in collaboration with Inco Ltd and Laurentian University in Sudbury. In 1996, he was appointed Adjunct Professor in the School of Engineering at Laurentian University in Sudbury. He also acted as Director and Secretary-Treasurer of McGill's Small Mining International (SMI), a non-profit organization serving artisanal mining in developing countries.

He has held terms as the Head of the Mining Departments at both McGill and UBC. His teaching and research evolved over his career from surface and underground mining technology to mining automation. In the last decade, however, he has been devoted to promoting Sustainable Mining with its communities.

Malcolm's teaching has focused mainly on aspects of mine planning and design, automation, IT and geomechanics. His research evolved from surface and underground rock mechanics, to mine automation, and more recently to sustainable development and mining

communities. To date he has supervised 32 PhD and 29 Master's research students to completion.

Whilst at McGill University, he played a key role in establishing the Canadian Center for Automation and Robotics in Mining (CCARM). CCARM assisted Inco to develop Telemining™, just one example of his work in automation. This involved the use of state-of-the-art technology of the time, including underground communications, positioning, process engineering, monitoring and control systems, to operate mining equipment and systems. Inco said at the time, "Telemining greatly increases safety of underground mining and improves productivity and working conditions."

"Several components of Inco's current mining operations, including certain loaders, drills and trackless tramming units are already capable of being operated remotely, even from surface. Research has now entered a new stage aimed at developing and testing technology to make the entire mining cycle capable of remote operation. The fully-automated mine is becoming a possibility thanks to the emergence of positioning software."

"Automation not only increases workplace safety and efficiency, it also reduces the mining industry's production costs. For example, since Inco's automated haulage truck was put underground in 1991, it has hauled 1.5 Mt of ore without failure. The truck uses an on-board computer and video cameras so the driver can sit thousands of metres away on the surface and operate the vehicle using a PC-based software program which simulates the hauler's dashboard."

"In the case of an automated LHD, the company realised cost savings from an increased fuel capacity through the elimination of the operator's cab. Through the use of video technology, telecommunications, modems and PCs, Inco has developed a positioning robot and robotic drifting systems, and has installed telecommunications systems and intelligent drilling systems."

Publications from that time on which Malcolm Scoble was a co-author included:

Golde, P., Atkinson, G., Scoble, M and Baiden, G.,



1995. Issues related to Teleoperation in Underground Hardrock Mines. Proceedings 4th Int. Symposium on Mine Mechanization and Automation, Colorado School of Mines, U.S. Bur. Mines, Denver 2, pp. 37-48.

Mottola, L., Scoble, M. and Baiden, G., 1995. Systems Analysis for Robotic Mining. Proceedings 3rd Can. Conf. Computer Applications in the Minerals Industry, Can. Inst. Min. Metall., Montreal, pp. 595-604.

Vagenas, N., Scoble, M. and Baiden, G., 1995, Simulation for Design, Planning and Control in the Automated Mine. Proc. 4th Inst. Symp. on Mine Planning & Equipment Selection, University of Calgary, Balkema, Rotterdam, pp. 271-276.

Knights, P.F. & Scoble, M.J., "Integrated Mining Information and Control Systems; Towards the Digital Mine", AIME-SME Annual General Meeting, Paper 95-121, Denver, Colorado, March 6-10, 1995.

Baiden, G., Scoble, M. and Flewelling, S., 1993. Robotic Systems Development for Mining Automation. Bull. Can. Inst. Min. Metall., 86, 972, pp. 75-77.

His teaching is in mining technology, feasibility studies and surface mining, and he has become involved as the Program Leader of an application to the Federal government for the establishment of a national Network for Sustainable Mining. He is a professional engineer in the province of British Columbia and a chartered engineer in the EU. He is a firm supporter of industry associations, particularly the Canadian Institute of Mining, Metallurgy and Petroleum, as well as the Mining Association of British Columbia.

In 2018 he was awarded the CIM Distinguished Service Medal, "in recognition of a passionate and visionary proponent of mining education at all levels." He has been a dedicated member and supporter of CIM and its branches in Flin Flon, Snow Lake, Montreal, and Vancouver since the 1960s. Among prior awards are CIM's Fellowship {1994} and Distinguished Lecturer Award {1996}. In 2012 he was awarded the Inaugural Gold Medal for distinguished service by the Canadian Mining Innovation Council.



Jonathan Peck, PhD, a past inductee and CEO & President of Peck Tech Consulting Ltd, made the initial nomination and wrote, "he was my PhD supervisor and served as the same for several people that went on to dramatically transform mining in many ways. Malcolm also had a profound impact on the mining engineering programs at McGill and then UBC. Thus, the energy he injected and changes he made allowed these mining schools to continue to grow and thrive. Mining rarely acknowledges the role that academics play to ensure a healthy industry. But without the contributions and dedication of people like Malcolm, mining graduates would be poorly prepared to enter the workforce with the right skills..."

John Chadwick, the Founder of International Mining and the Technology Hall of Fame also had the good fortune to have Malcolm Scoble as his tutor at Nottingham University in England in the early 1970s. "Being in a largely coal biased mining department, it was Malcolm that fostered my interest in metal mining, directing and greatly helping with my thesis The feasibility of reopening old British metalliferous mines. Largely thanks to him I got very interested in metal mining and metal recovery, did not join the National Coal Board but went out to Zambia and the copper mines there to start my career there."

Peter Knights, PhD, Professor of Mining Engineering at The University of Queensland, has fond memories of working with Malcom at McGill University. In 1995 he co-authored a conference paper with Malcom titled Integrated Mining Information and Control Systems; Towards the Digital Mine that was later cited by a key Rio Tinto executive as an influence in its Mine of the Future™ program.

Research Interests

Surface and Underground Mining Science and Technology
Surface Mining Technologies (diggability, rock fragmentation, machine monitoring)
Underground Mining Technologies
Mine Automation systems development
Mining and Sustainability

Awards

Stefanko Best Paper Award, 1991
Distinguished Lecturer Award, 1996
Fellowship Award of the Canadian Institute of Mining and Metallurgy, 1994
Inaugural Gold Medal for distinguished service, 2012
Distinguished Service Medal of Canadian Institute of Mining and Metallurgy 2018