

AIME/SME Opening Session

Extracting the Science: A Century of Mining Research

9:00 AM • Monday, March 1, 2010
Phoenix Convention Center

SME celebrates “A Century of Mining Research” with a keynote session presenting leaders in all areas which contribute to the scientific body of knowledge in mining: industry, academia and government. Speakers will offer historical perspective with an eye toward a future that is both safer and healthier, while also productive and sustainable. Invited presenters will share their respective contributions and perspectives:

Welcome

Richard C. Adkerson
CEO and President, Freeport McMoRan
(Introduced by Will Wilkinson, SME President)

Session Chair and Moderator:

Bruce Watzman
Senior VP for Regulatory Affairs,
National Mining Association (NMA)

Speakers:

History of the Mining Research in the USA

Jeffery Kohler
Associate Director for Mining,
National Institute for Occupational Safety and Health

Contribution of the US Coal Industry to Mining Research

Steven F. Leer
Chairman and CEO, Arch Coal, Inc.

Contribution of the US Hardrock Mining Industry to Mining Research

Gary Goldberg
CEO, RTZ USA

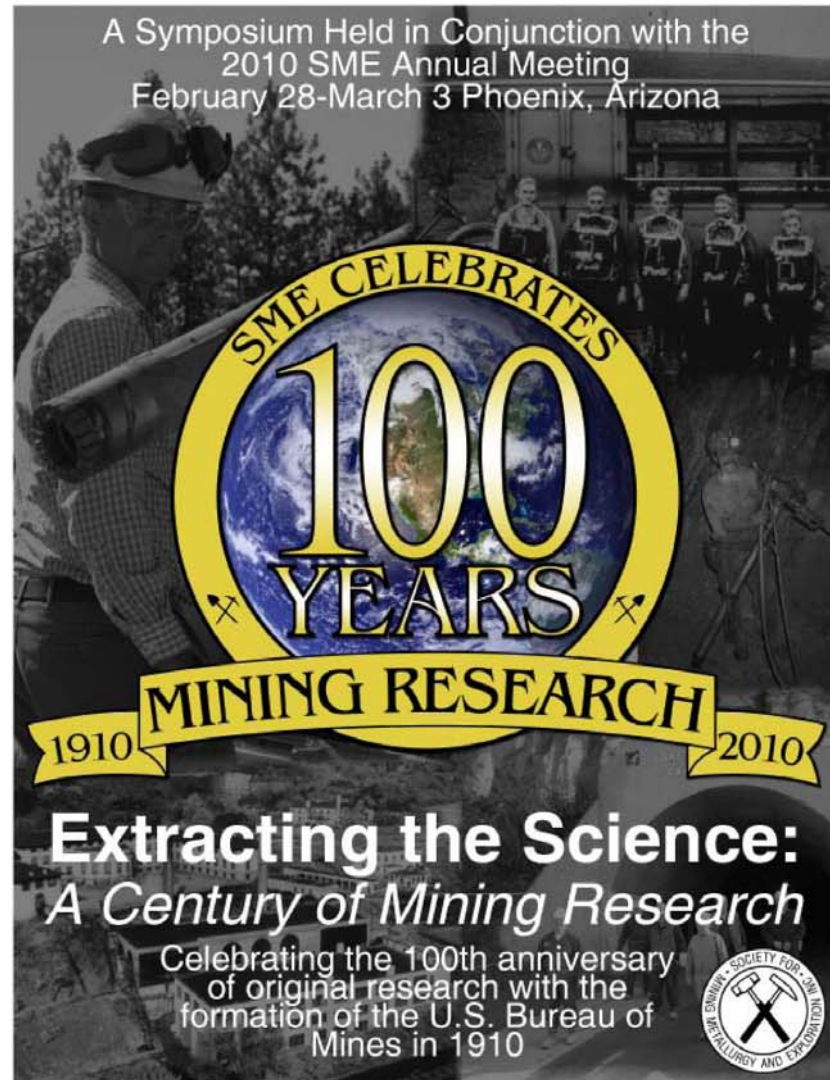
Mine Productivity and Technology Research in Australia

Michael Hood
CEO, CRC Mining

Contribution of the US Universities to Mining Research

Raja V. Ramani
Emeritus Professor of Mining and GeoEnv Engineering,
Penn State University

A panel discussion will follow the presentations.



Accepted Papers for the 2010 SME Annual Meeting Celebrating 100 Years of Mining Research

Enclosed please find a listing of all papers chosen to be presented at the 2010 SME Annual Meeting in Phoenix, AZ, USA.

The following are featured Keynote lectures:

History of Research Development in Polish Coal Mining and its Present Trends	Prof. Dubiński Józef Director, Central Mining Inst., POLAND.
Global Mining Engineering Education: Past, Present and Future	Prof. Michael Karmis Virginia Tech., USA.
Canadian Mining Research: History, Current Issues and Future Directions	Dr. Thomas Hynes Director General, CANMET Mining & Mineral Sciences Laboratories, NRC, CANADA.
Research to Address the Risk of Rockbursting in the Deep Hard Rock Mines of South Africa	Prof. Ray Durrheim South African Research Chair, Univ. of the Witwatersrand and CSIR Fellow, SOUTH AFRICA.
How Mining Disasters Changed the Face of Mining in Australia	Paul Harrison, Director SIMTARS, AUSTRALIA.
History of Coal Mining Research in UK	Prof. Sevket Durucan Mining & Env. Eng. Imperial College, UNITED KINGDOM.
History of Coal Mining Research in China	Dr. Jinhua Wang President, China Coal Tech. & Eng. Group Corp., CHINA.
Coal Mining Research in Australia: A Historical Review of Developments	Prof. Bruce K Hebblewhite Head of School of Mining Eng. & Research Director, Univ. of New South Wales, AUSTRALIA.
Coal Mining Research in South Africa	Prof. Huw Phillips Head of School of Mining Eng. Univ. of the Witwatersrand, SOUTH AFRICA.
Mine Disaster Prevention in Deep Hard Coal Mining – German Review	Prof. Nicolai Martens RWTH Aachen Univ., GERMANY.

100 Year Mining Research: Ventilation I: Disaster Prevention and Management

How Will We Respond to a Mine Disaster in 2010

Paul Harrison, Darren Brady and Jan Oberholzer. SIMTARS. Queensland, AUSTRALIA.

Prevention of Methane and Coal Dust Explosions in the Polish Hard Coal Mines

Dr. Krzysztof Cybulski. Central Mining Institute, POLAND.

A Centennial of Mine Explosion Prevention Research

Mike Sapko, Eric Weiss, Marcia Harris, Dr. Chi Man and Samuel Harteis. NIOSH, USA.

Development of Mine Gas Management Technology and Practices in Australia following the Moura Mine Explosions

Paul Harrison and Darren Brady. SIMTARS, Queensland, AUSTRALIA.

Large Scale Explosion Tests-US BoM CMI Collaboration

Prof. Kazimierz Lebecki. Central Mining Institute, POLAND.

Mine Disasters: A History and a Look to the Future

Michael Brnich and Dr. Kathleen Kowalski-Trakofler. NIOSH, USA.

MSHA's Mine Emergency Operations

John Urosek and M. Terry Hoch. MSHA, USA.

The Use of Self-contained Self Rescuers (SCSRs) During Recent Mine Accidents in the US and Subsequent Regulatory Improvements for SCSRs

Dr. Jeff Kravitz. MSHA, USA.

Guidelines for Escape and Rescue in the US Underground Coal Industry

Dr. Danrick Alexander, Michael Brnich, Dr. Kathleen Kowalski-Trakofler, Susan Bealko and Roberts Peters. NIOSH, USA.

A Century of Bureau of Mines/NIOSH Explosives Research

Dr. Richard Mainiero, NIOSH and Harry Verakis, MSHA, USA.

CSIRO Coal Mining Research and Technologies

Hua Guo, Rao Balusu, David Hainsworth, Shen Baotang, Su Shi and Jonathan Roberts.

CSIRO Exploration and Mining, AUSTRALIA.

A Summary of US Mine Fire Prevention Research

Alex C. Smith and Edward D. Thimons. NIOSH, USA.

Proactive Strategies to Prevent Fires and Explosions in Longwall Mines

Rao Balusu, Ting Ren, Kelvin Schiefelbein, Paul O'Grady and Tim Harvey. CSIRO and Anglo Coal, AUSTRALIA.

Development of Methods for Determining the Fire Evacuation Routes in Polish Underground Mines

Prof. Andrzej Strumiński, KGHM Cuprum and Barbara Madeja-Strumińska, Wrocław Univ. of Technology, POLAND.

100 Year Mining Research: Ventilation II

History of Research in Mine Refrigeration, Cooling and Ventilation in South Africa

SJ Bluhm, WM Marx, R Ramsden and FH von Glehn. BBE Consulting, SOUTH AFRICA.

A Summary of USBM/NIOSH Respirable Dust Control Research for Coal Mining

Jay Colinet, James Rider, John Organiscak, Jeff Listak and Gregory Chekan. NIOSH, USA.

An Overview of USBM/NIOSH Technology to Reduce Silica Dust Exposures in Metal/Nonmetal Mines and Mills

Andrew B. Cecala, John Organiscak, Greg Chekan, Doug Pollock, Jeanne Zimmer, Jim Rider and Jay Colinet. NIOSH, USA.

A Review of the USBM/NIOSH Diesel Research Program

Steven Mischler, Alexander Bugarski, James Noll, Larry Patts and Emmanuele Cauda. NIOSH, USA.

Mine Atmospheric Environmental Research and Advancements in Past Century

Emeritus Prof. Raja V. Ramani. Penn State Univ., USA.

Simultaneous Ventilation, Power and Cooling Supply with Compressed Air

Prof. George Danko and Davood Bahrami. Univ. of Nevada, USA.

Historical Development of Technologies for Controlling Methane in Underground Coal mines

Charles D. Taylor and Dr. Özgen Karacan. NIOSH, USA.

Impact of Coupled Changes in Pressure and Stress on Flow of Methane in Coal Degasification Operations

Prof. Abhijit Mitra and Satya Harpalani. Southern Illinois Univ., USA.

Mathematical Modeling of Coal Seam Methane Drainage in Longwall Mining

Dr. Kazem Oraee and Arash Goodarzi, UK.

100 Year Mining Research: General Mining

Hearing Loss in the Mining Industry: The Evolution of NIOSH and Bureau of Mines Hearing Loss Research

Dr. RJ Matetic. NIOSH, USA.

Heat Stress Management in Hot Mines

PC Schutte. CSIR, South Africa

Mine Illumination: A Historical and Technological Perspective

Dr. John J. Sammarco, Miguel A. Reyes and Timothy J. Lutz. NIOSH, USA.

US Bureau of Mines/NIOSH Mining Electrical Safety Research: Legacy of Protection Against Shock, Fires and Explosions

Michael R. Yenchek and Gerald T. Homce. NIOSH, USA

Environmental Research by the US Bureau of Mines

L. Michael Kaas. Consultant, USA

Historical Perspective on Mining and Sustainable Development

R. Anthony Hodge, Deborah J. Shields, Jose A. Botin and Dirk van Zyl. UK, USA and CANADA.

75 Years of Underground Applied Mining Research in Southeast Missouri Mines

Dick Bullock, Professor Emeritus. Missouri University of Science and Technology. USA.

Maintenance Management and Sustainability: A Historical Perspective

Prof. Jose A. Botin. Universidad Politecnica de Madrid, Escuela de Minas. SPAIN.

Innovative Solutions Developed at Komag to Improve Operational safety and Reliability of Mechatronic Systems in Mines

Dr. Zdzislaw Kleczek and Dr. Malgorzata Malec. KOMAG Inst. of Mining and Technology. POLAND.

Risk-Cost-Benefit (RCB) Selection of Optimum Early Warning Technologies

Dr. G. Kizil, Prof A. Bye and Prof J. Joy. Sustainable minerals Inst., University of Queensland. AUSTRALIA.

Multiple Languages and its Effects on Mine Safety in Southwest Pennsylvania in the Early 20th Century

Nancy L. Dorset and Lawrence Hunchuck. Penn State Univ., USA.

100 Year Mining Research: Rock Mechanics

The Impact of Ground Control Research on the Safety of Underground Coal Miners: 1910-2010

Dr. Chris Mark and Dr. Thomas M. Barczak. NIOSH, USA.

The Rise of Geophysics for In-mine Imaging

Dr. Declan Vogt, Michael van Schoor and Stoffel Fourie. CSIR, SOUTH AFRICA.

Continuous Assessment of Rockfall Risk in Deep Tabular Mining

Van Zyl Brink. CSIR, SOUTH AFRICA.

Pillar and Roof Span Design in Stone Mines

Dr. G.S. Esterhuizen, D.R. Dolinar and J.L. Ellenberger. NIOSH, USA.

A Multidisciplinary Investigation of the Potential Use of Thin Spray-on Liners in Underground Coal Mines

Dr. Serkan Saydam, Yildiray Cinar and Dr. Rudrajit Mitra. UNSW, AUSTRALIA.

An Australian Approach to Determining Abutment Angles in Deep Cover Western US Longwall Mines

Ry Stone, Rob Thomas, David Hill and Dr. Ismet Canbulat. Strata Engineering and Anglo Coal, AUSTRALIA.

Geotechnical Instrumentation Research Leads into Development of Stable Mine Designs

Dr. Hamid Maleki. Maleki Technologies, USA.

Review of Rock Slope Displacement Curve

Hossein Masoumi and Dr. Kurt Douglas. Univ. of New South Wales, AUSTRALIA.

Investigation into the Stress Shell Evolving Characteristics of Rock Surrounding Fully Mechanized Top-coal Caving Face

Ke Yang, Guangxiang XIE and Jucai Chang. Anhui Univ. of Science and Technology, CHINA.

The State of Stress in Outburst Mining Area, China

J. Han and H.W. Zhang. Liaoning University, CHINA.

Analysis of a M_L 4.0 Mining Induced Seismic Event

Prof. Michael Alber and Dr. Ralf Fritschen Ruhr. Univ. Bochum and DMT GmbH & Co. KG. GERMANY.

Microseismic Monitoring in Mines

Dr. Maochen Ge. Missouri Univ. of Science and Technology, USA.

Optimization of Chain Pillars Design in Longwall Mining Method

Prof. Kazem Oraee and Navid Hosseini. Univ. of Stirling, UK.

100 Year Mining Research: Mine Productivity

40 Years Technical Development at RAG Deutsche Steinkohle

Dr. Martin Junker, RAG Aktiengesellschaft. GERMANY.

Improving Dragline Productivity Using a Diggability Index as an Indicator

Dr. Mehmet Kizil, Univ. of Queensland, AUSTRALIA.

Paralel Activities in Tunneling

Ernesto Arancibia, Fidel Baez and Jorge Baraqui. Codelco, CHILE

Assessment of Cutoff Grade Impurities: A Case study of Magnesite Ore Deposit

Dr. Süheyla Yerel and Prof. Adnan Konuk. Eskisehir Osmangazi Univ., TURKEY.

A Simple Chain Model to Determine production Values for Continous Mining Equipment Verified with Empirical Data Form the Rhenish Lignite Mining District

Dr. Robrecht Schmitz and Holger Franken. RWE Power AG and Delft Univ. of Technology. GERMANY.

100 Year Mining Research: Training

A review of NIOSH/US Bureau of Mines Research to Improve Miners' Health and Safety Training

Robert H. Peters, Charles Vaught and Dr. Launa G. Mallet. NIOSH, USA.

Training Using Virtual Environments: The Problems of Organizational Knowledge Creation

Dr. Damian Schofield and Dr. Andrew Dasys. SUNY and MIRARCO, USA.

Application of Virtual Reality Training for the Mining Industry – “Training for Tomorrow”

Bruce Dowsett. Coal Services – NSW Rescue Services, AUSTRALIA.

Virtual Environments for Surface Mining Powered Haulage Training

Ryan P. McMahan, Steven Schafrik, Doug A. Bowman and Prof. Michael Karmis. Virginia Tech, USA.

A Century of Mining Visualization: Moving from 2D to 5D

Dr. Andrew Dasys, Dr. Pavel Vasak and Dr. Damian Schofield. MIRARCO and SUNY. CANADA.