

BOARD OF DIRECTORS

PHILLIP MACKEY

Education: BSc and PhD in Metallurgical Engineering, University of New South Wales, Sydney, Australia

Experience: Skilled in all aspects of non-ferrous metals processing including research and development, management, and operations. Noranda Research Centre in Canada-1969-1971; Technical Superintendent, Noranda Mines-1973-1979, where played a leading role in developing the Noranda Process; Program Manager-Noranda Process-1980-1990; Principal Scientist 1990-2001, when developed the Noranda Continuous Converter. Principal Engineer-2002-2009 at Falconbridge for the development of new nickel laterite technologies. Since 2010, President of own consulting company, is Advisor to Horizonte Minerals developing a laterite project in Brazil, also consulted for Redwood, BHP, Anglo-American, Codelco, Glencore, North American Nickel, and other companies. A Fellow of TMS (USA) and CIM (Canada). Inducted into the Canadian Mining Hall of Fame, Spring 2022.

LAWRENCE MAY

Education: BS Chemical Engineering and Petroleum Refining, Colorado School of Mines (1985) MBA, University of Colorado (1994)

Experience: 35 years at Hazen Research: Senior Vice President since January 2016; Vice President from 2007 - 2016. Primary area of expertise is developing thermal processes for the Chemical, Environmental, Mineral, and Advanced Material industries. Served 24 years as an Engineer and Logistics Officer in the United States Army Reserve. Retired at the rank of Lieutenant Colonel in 2009.

JOHN J. MOORE

Education: BSc., University of Surrey (UK); Ph.D. University of Birmingham (UK); D.Eng., University of Birmingham (UK) – all in Metallurgy and Materials Science

Experience: Student Apprentice at Stewarts and Lloyds Ltd., UK, (a fully integrated steel plant) from 1962 to 1966; Manager of Industrial Engineering and Production Control at Birmid-Qualcast Industries Ltd., UK, from 1969 to 1974; Senior Lecturer of Chemical Metallurgy at Sandwell College, England, from 1974 to 1979; Professor of Metallurgical Engineering and Associate Director of the Mineral Resources Research Center at the University of Minnesota, from 1979 to 1986; Professor & Head, Department of Chemical and Materials Engineering, University of Auckland, New Zealand, from 1986 to 1989. Trustees' Professor and Head of Department of Metallurgical and Materials Engineering, Colorado School of Mines from 1989 to 2010. Over 600 papers published in metallurgical and materials journals. Supervised over 50 PhD students. 14 US patents. Emeritus Professor of Metallurgical and Materials Engineering, CSM from 2010. Honorary Doctorate from Moscow State University of Technology. Foreign Member, Russian Academy of Science.



NICK HAZEN

Education: BS Chemical Engineering, University of Colorado

Experience: 40 years at Hazen Research: President from 1994 to present. Leader on a variety of chemical and metallurgical projects. Played a pivotal role in developing several key processes in extractive metallurgy, at least seven of which have been taken from R&D through piloting to full-scale, effective commercial production. Three years as analyst and metallurgical lab director at Alumet Company. Thirty-six US patents, Taggart Award (SME) 2008, Futers Gold Medal (IOM3) 2012, Richards Award (AIME-SME) 2013, inducted into the National Academy of Engineering, 2021.

BRUCE KUENZI

Education: BS Accounting, Kansas State University (1994), MS Accounting, Kansas State University (1996), Certified Public Accountant, Colorado (1998)

Experience: 6 years at Hazen Research: Chief Financial Officer since October 2020; Corporate Controller from 2016 to 2020. Prior to Hazen Research: Director of Finance at Penford Corporation from 2003 to 2015, managing accounting, finance, and SEC reporting; Division Controller at Titanium Metals Corporation from 2001 to 2003; and various other accounting and finance roles earlier in career.