

Stanford University Symposium on Mineral Resources and Their Sustainable Development

Friday, December 8, 2017

- 8:30-8:45 **Dr. Gordon E. Brown, Jr.** (Stanford University, Stanford, CA, USA), **Dr. Georges Calas** (University of Paris VI, Paris, FRANCE), **Mr. Bradford A. Mills** (Plinian Capital, London, UK), Dr. Stephan – *Welcome and Introductory Comments*
- 8:45-9:15 **Dr. Pamela Matson** (Chester Naramore Dean, School of Earth, Energy & Environmental Sciences, and Richard and Rhoda Goldman Professor in Environmental Studies, Stanford University, Stanford, CA, USA) – Plenary Talk: *“Pursuing Sustainability: Meeting the Near and Long-term Needs of People While Preserving the Life Support Systems of the Planet”*
- 9:15-9:45 **Dr. Murray W. Hitzman** (Associate Director of Energy and Materials, U.S. Geological Survey, Reston, VA, USA) – *“Mining in the 21st Century”*
- 9:45-10:15 **Mr. Nicolas Renard** (Advisor to the Chairman and CEO, VEOLIA Group, Aubervilliers, FRANCE) – *“Environmental and Social Acceptability of Mining Activities: The Point of View of Veolia, A Service Provider to Mining Companies”*
- 10:15-10:45 **Coffee Break**
- 10:45-11:15 **Dr. Mark V. Sander** (President and Chief Executive Officer, Mandalay Resources, Toronto ON, CANADA) and **Ms. Belinda Labatte** (Chief Development Officer, Mandalay Resources) – *“Achieving Meaningful, Ongoing Alignment at Local, National and Global Scales About the Benefits and Costs of Mineral Extraction Projects That Allows Confident Investment”*
- 11:15-11:45 **Dr. Demetrius Pohl** (Vice President for Exploration, Legend Gold Corp., Corado Resources Corp., Carlson Pohl Associates, Los Angeles, CA, USA) – *“Turning A Finite Resource into a Sustainable Endeavour”*
- 11:45-12:00 **Questions and Discussion**
- 12:00-1:00 **Lunch**
- 1:00-1:30 **Dr. Jessica E. Kogel** (Associate Director for Mining, National Institute for Occupational Safety and Health) – *“Occupational Health and Safety in the Formal and Informal Mining Sectors: A Critical Factor in the Sustainable Development of Mineral Resources”*

- 1:30-2:00 **Dr. Mark P. Taylor** (Professor, Department of Environmental Science, Macquarie University, Sydney, AUSTRALIA) – *“Industrial Emissions of Lead to the Environment: Its Impact, Legacy and Remediation”*
- 2:00-2:30 **Dr. Gordon E. Brown, Jr.** (D.W. Kirby Professor of Geological Sciences, School of Earth, Energy & Environmental Sciences, and Professor of Photon Science, SLAC National Accelerator Laboratory, Stanford University, Stanford, CA, USA) – *“The Environmental Legacy of Gold, Mercury, and Asbestos Mining in California, USA: Evaluation of the Long-Term Impacts”*
- 2:30-3:00 **Dr. Michael F. Hochella, Jr.** (University Distinguished Professor, Department of Geosciences, Virginia Tech, Blacksburg, VA, and Laboratory Fellow, Geosciences Group, Pacific Northwest National Laboratory, Richland, WA, USA) – *“Newly Discovered Environmental Impacts of Mineral Resource Utilization: Direct and Indirect Incidental Nanomaterials”*
- 3:00-3:30 **Coffee Break**
- 3:30-4:00 **Dr. Phil Jones** (Consultant and ex-Vice President of Technology, Imerys Group, Mining and Metals, Macon, GA, USA) – *“Engineered Kaolinite as a Sustainable Advanced Material”*
- 4:00-4:30 **Dr. Rodney C. Ewing** (Frank Stanton Professor in Nuclear Security, Center for International Security and Cooperation, Freeman Spogli Institute for International Studies, and Professor of Geological Sciences, Stanford University, Stanford, CA, USA) – *“Is Nuclear Fission a Sustainable Source of Energy?”*
- 4:30-5:30 **Roundtable Discussion**

Saturday, December 9, 2017

- 8:30-9:00 **Dr. K. Vala Ragnarsdóttir** (Professor, Institute of Earth Sciences and Institute of Sustainability Studies, University of Iceland, Reykjavík, ICELAND) – Plenary Talk: *“Limits to Growth Revisited: Can the Scarcity Horizons be Extended?”*
- 9:00-9:30 **Dr. Johan P.M. deVilliers** (Professor of Materials Science and Metallurgical Engineering, University of Pretoria, Pretoria, SOUTH AFRICA) – *“Technological Developments and Advances in the Minerals Industry: Impact on Sustainability”*
- 9:30-10:00 **Dr. Virginia S. T. Ciminelli** (Professor, Department of Metallurgical and Materials Engineering, Universidade Federal de Minas Gerais, Belo Horizonte, MG, BRAZIL, and Director, Brazilian National Institute for Science and Technology on Mineral Resources, Water and Biodiversity), and **Mr. Renato R. Ciminelli** (President, Geopark Quadrilátero) – *“Social, Political, and Technological Challenges for the Sustainability of Mining Territories in the State of Minas Gerais, Brazil”*

- 10:00-10:30 **Coffee Break**
- 10:30-11:00 **Dr. Georges Calas** (University Institute of France Chair of Mineralogy, Institut de Minéralogie, Physique des Matériaux et Cosmochimie, Université Pierre et Marie Curie (UPMC)-Paris VI and CNRS, Paris, FRANCE) – ***“Lateritic Ore Deposits: The Last Continent to Discover?”***
- 11:00-11:30 **Dr. France Bailly** (Director, National Centre for Technology Research (CNRT) – A Public Interest Group – “Nickel and its environment”, NEW CALEDONIA) – ***“New Caledonia, A Land of Nickel - Research and Innovation Acting for Sustainable Development”***
- 11:30-12:00 **Dr. Jef Caers** (Professor of Geological Sciences, School of Earth, Energy & Environmental Sciences, Stanford University, Stanford, CA, USA) – ***“Quantifying Subsurface Risk: What Can the Mineral Industry Learn from the Petroleum Industry?”***
- 12:00-1:00 **Lunch**
- 1:00-1:30 **Dr. Lawrence D. Meinert** (Acting Deputy Associate Director – Energy and Minerals, U.S. Geological Survey, Reston, VA, USA) – ***“Resources for the Future – Critical Minerals, Geopolitics, and Science”***
- 1:30-2:00 **Dr. Roderick G. Eggert** (Professor and Viola Vestal Coulter Chair in Mineral Economics, and Deputy Director, Critical Materials Institute (an Energy Innovation Hub of the U.S. Department of Energy), Division of Economics and Business, Colorado School of Mines, Golden, CO, USA) – ***“Material Criticality and Manufacturing: Comparing China, the European Union, Japan and the United States”***
- 2:00-2:30 **Dr. Thomas R. Benson** (Department of Geological Sciences, Stanford University, Stanford, CA, USA) and **Dr. Gail A. Mahood** (Professor of Geological Sciences, Stanford University) – ***“Lithium and Other Energy-Critical-Element Resources in Caldera Settings”***
- 2:30-3:00 **Dr. Frances Wall** (Professor of Applied Mineralogy, Camborne School of Mines, College of Engineering, Mathematics, and Physical Sciences, University of Exeter, Cornwall, UK) – ***“Responsible Sourcing of Critical Metals”***
- 3:00-3:30 **Coffee Break**
- 3:30-4:00 **Mr. Christian Polak** (Director of Strategy & Business Development, AREVA Mines, Courbevoie, FRANCE) – ***“What Could be the Role of Junior Mining in the Development of Sustainable Resources in Critical Metals?”***
- 4:00-4:30 **Mr. Bradford A. Mills** (Managing Director, Plinian Capital, London, UK) – ***“Perspectives on the Sustainable Development of Mineral Resources”***
- 4:30-5:30 **Roundtable Discussion and Conclusions**