

**SUSTAINABLE MINERALS
ROUNDTABLE WORKSHOP**

**108th Annual Meeting
Northwest Mining Association
Spokane, Washington
December 3, 2002**

www.unr.edu/mines/smr

Agenda

- 8:30 – 9:00 Introduction – Dirk van Zyl
- 9:00 – 10:00 Sustainable Minerals Roundtable – An Introduction and Summary of Progress – Deborah Shields
- 10:00 – 10:15 Break
- 10:15 – 10:30 Criteria, Indicators and Prioritization – Dirk van Zyl
- 10:30 – 10:50 Maintenance of productive capacity – Lorie Wagner
- 10:50 – 11:10 Maintenance of environmental quality – Bob Green
- 11:10 – 11:30 Maintenance of long-term social and economic, and cultural benefits – Richard Marshall
- 11:30 – 11:50 Monitoring trends in legal and institutional framework – Deborah Shields
- 11:50 – 12:00 Discussion
- 12:00 – 1:15 Lunch
- 1:15 – 3:00 Break-out groups
- 3:00 – 3:15 Break
- 3:15 – 4:30 Discussion of break-out group results

Biographical Sketches

Richard C. Marshall

Mineral Economist, USDA Forest Service, Missoula, Montana

Richard Marshall has 21 years of mineral economics experience with the U.S. Forest Service. His main areas of responsibility include estimating the economic impacts of mineral development proposals, analyzing mineral commodity markets, and assisting mineral examiners in conducting economic evaluations of mining claims. Prior to joining the U.S. Forest Service, he worked as an economist for the U.S. Department of Housing and Urban Development and the State of Michigan. Dr. Marshall earned a B.S. in Business Administration from Michigan Technological University, an M.A. in Economics from Wayne State University, and a Ph.D. in Mineral Economics from the University of Arizona. He is a member of the Mineral Economics and Management Society and the Society of the American Institute of Mining, Metallurgical, and Petroleum Engineers (SME).

Deborah Shields

Principal Mineral Economist, US Forest Service, Fort Collins, Colorado

Dr. Deborah Shields is Principal Mineral Economist for the U.S. Dept. of Agriculture, Forest Service, Research Division. She directs the agency's mineral economic and policy research program, providing technical and scientific input to USFS Strategic Planning. In addition, she leads the agency's effort to include nonrenewable resources in sustainable resource management, serving as co-chair of the US Sustainable Minerals Roundtable. She is technical advisor on sustainability to the US Delegation to the Mining Ministers of the Americas and participated in MMSD North America. Dr. Shields has published in the areas of mining in sustainability, mineral policy, value theory, conflict resolution, and karst management.

Dirk van Zyl

Director Mining Life-Cycle Center, Mackay School of Mines, Reno, Nevada

Dirk Van Zyl the Director of the Mining Life-Cycle Center and Professor and Chair of Mining Engineering at the Mackay School of Mines of the University of Nevada, Reno. Dirk has more than 20 years experience in research, teaching and consulting in tailings and mine waste rock disposal and heap leach design. Lately much of his attention has been focused on mining and sustainable development. He received a B.Sc. in Civil Engineering in 1972 and a B.Sc. (Honors) in 1974, both from the University of Pretoria, South Africa. He also received a M.S. and Ph.D. in Geotechnical Engineering from Purdue University in 1976 and 1979, respectively. In 1998 he completed an Executive MBA at the University of Colorado. He is a registered professional engineer in 10 States.

Lorie Wagner

Mineral Economist, U.S. Geological Survey, Lakewood, Colorado

Lorie Wagner has been with the U.S. Geological Survey for the last 7 years working on sustainability issues and materials flow projects. Prior to this, she was with the U.S. Bureau of Mines for 6 years and International Trade Commission for 2 years, working on cash flow analysis of mineral operations and minerals related trade cases, respectively. Her formal education is a BS in mining geology from the University of Minnesota and a MS in mineral economics from the University of Arizona.