

# INTRODUCTION

This *Proceedings* contains the presentations made at the Thirty Second Annual Institute on Mining Health, Safety and Research, held at the University of Utah in Salt Lake City, August 5 - 7, 2001.

The first twenty-seven Annual Institutes were held at Virginia Tech in Blacksburg, Virginia. The Twenty-Eighth Annual Institute was held in Salt Lake City and co-hosted by the University of Utah and Virginia Tech. Subsequently, the venue has alternated between the east and west with the two Universities as co-hosts. The Institute enjoys wide support from the mining community and was co-sponsored by the following organizations:

- Department of Mining Engineering, University of Utah
- Department of Mining and Minerals Engineering, Virginia Tech
- Bituminous Coal Operator's Association
- Mine Safety and Health Administration, U.S. Department of Labor
- National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention
- National Mining Association
- National Stone Association
- Utah Mining Association

The Institute provides an information forum for mine operators, managers, superintendents, safety directors, engineers, inspectors, researchers, teachers, state agency officials, and others with a responsible interest in the important field of mining safety and health. In particular, the Institute is designed to help mine operating personnel gain a broader knowledge and understanding of the various aspects of mining safety and health, and to present them with methods of control and solutions developed through research.

# PROCEEDINGS

## THIRTY-SECOND ANNUAL INSTITUTE ON MINING HEALTH, SAFETY AND RESEARCH

SALT LAKE CITY, UTAH  
AUGUST 5-7, 2001

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### PUBLISHED BY:

Department of Mining Engineering  
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