

## Oil Shale Symposium Welcoming Remarks

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Thank you all for attending the 28<sup>th</sup> Oil Shale Symposium. On behalf of Colorado School of Mines, it is my sincere pleasure to welcome you to our campus. And for those of you who are attending from one of the 15 countries and 30 states represented at this conference, welcome to our beautiful State. You've selected a wonderful time to be in Colorado. But I have to warn you, the old adage about weather around here is, if you don't like it, just wait 15 minutes.

In a few moments I will introduce our distinguished speakers for this plenary session – The Honorable Jon Huntsman, Governor of Utah, Mr. Harris Sherman, Executive Director of the Colorado Department of Natural Resources, and Dr. Foster Wade, Deputy Assistant Secretary for Land and Minerals Management of the U. S. Department of the Interior – who will provide state and Federal perspectives on oil shale development.

But first I wanted to take just a few minutes to highlight the work we are doing here at Colorado School of Mines – not only oil shale – but in other areas of energy research as well.

I believe Mines has unique capabilities to lead in the development of revolutionary solutions to our global energy challenges. As many of you know, Mines has a long history of excellence in traditional fossil fuel development. But our vision is not limited to only one aspect of energy development; instead, our vision is to lead in the advancement of sources across the entire spectrum including traditional fossil fuels, unconventional resources, and renewable energy.

Our strategy is to bring together expertise from all our disciplines to tackle research challenges and to create partnerships with other institutions and corporations to augment our expertise. Fundamental to this strategy is the belief that, in spite of current challenges, satisfying long-term global eco-

nomics and energy demand growth will necessitate efficient and environmentally responsible development of all potential supply sources—conventional and unconventional fossil fuels, renewables, and other alternative energies—as well as significant progress in implementing conservation practices.

Our strategy has proven quite successful recently. Earlier this month, Colorado School of Mines in partnership with the National Renewable Energy Laboratory was awarded a prestigious Materials Research Science and Engineering Center (or MRSEC as it is often referred to) from the National Science Foundation. The new Center at Mines is the first MRSEC funded to focus on renewable energy. Its goal is to provide transformations that will greatly expedite progress in this arena from basic research to affordable products. As one of only 13 such centers funded this year by NSF, this award brings Mines into the company of other elite research institutions such as Princeton, MIT, and the University of Chicago – just to name a few.

Mines is also proud to have received nearly \$6 million in grants from the Research Partnership to Secure Energy for America (RPSEA) to conduct research related to unconventional resources, specifically in tight gas reservoirs in sandstone, and co-produced water from coal-bed methane. Each of these funded projects has significant participation by our industry partners— a factor that was critical to these awards. This is not unusual at Mines. Over 50% of our sponsored research projects are funded by companies and organizations, which is unusually high for research intensive universities.

Another exciting partnership was the formation two years ago of the Colorado Renewable Energy Collaboratory – a joint effort between Mines, the University of Colorado at Boulder, Colorado State University and the National Renewable Energy Laboratory. Through our collective efforts, we have been

able to attract significant funding to Colorado for research in biofuels and solar materials. Additional efforts and funding in energy efficiency, carbon management and wind power will soon be announced as well.

The Colorado Fuel Cell Center, located on the Mines campus, continues to help develop a burgeoning local industry in fuel cell related products and technology. Started just a few years ago in partnership with NREL and the Governor's Energy Office, the center's faculty and students now collaborate on projects with 10 universities and over 20 companies. Our faculty's expertise and work in this area was recently highlighted when the American Society of Mechanical Engineers (ASME) hosted its international conference on fuel cells in Denver this past summer.

And in the field of education – certainly our most important mission – Mines students remain one of the most sought after groups in the nation. Our placement rates are essentially 100% within 6 months of graduation, and the students' starting salaries rank within the top 25 in the country according to one survey.

Despite the national trend of fewer students pursuing engineering disciplines, our enrollment has increased by 34% in the last 6 years. In fact, despite our relatively small overall enrollment, we can boast of having the largest Petroleum Engineering Department in the U.S. and the 5<sup>th</sup> largest undergraduate Physics department.

Our effort in oil shale research and education is following the strategy of partnerships and multi-disciplinary research that I described earlier. I want to acknowledge the work of Dag Nummedal and Jerry Boak of the Colorado Energy Research Institute for their leadership in this critical area, as well as for their hard work in putting this conference together. Over the past 3 years, Dag and Jerry have been working with companies to define a concept for a leading venue for the exchange of ideas and information on the global oil shale enterprise.

I am very pleased to announce today the formation of the Center for Oil Shale Technology and Research (COSTAR) at the Colo-

rado School of Mines. And I particularly want to acknowledge and thank the founding corporate partners in this new Center: Total Exploration and Production, Shell Exploration and Production, and ExxonMobil Upstream Research Company.

The Center for Oil Shale Technology and Research (COSTAR) will integrate efforts in scientific and engineering research, as well as information management, technical review, education, and communication related to development and production of hydrocarbons from oil shale. The primary function of COSTAR is to conduct research on oil shale deposits, technological approaches to *in-situ* and *ex-situ* production, and effects and consequences of the production of shale oil, including carbon management and water resources impacts. I'm sure you will hear more details of the current research agenda throughout this week.

Additionally, COSTAR includes an oil shale information office, located in Mines' Arthur Lakes Library. The information office will receive and disseminate information about oil shale, drawing on the extensive historic collections at our library, and coordinating with related data repositories at the University of Utah, NREL, the USGS, and international repositories of oil shale information. The Center will provide unbiased information to interested parties about the benefits and opportunities associated with a domestic oil shale industry as well as issues related to technical, environmental and economic risks.

COSTAR will draw upon the expertise of at least 6 academic departments at Mines and will have research affiliates at the University of Wisconsin at Madison and Binghamton University at Binghamton, New York. And it intends to continue to add Members through the same interactive efforts that built the current Center.

The goal of COSTAR is to become the world's preeminent organization for integrated oil shale research. With its multi-disciplinary approach and its strategy for partnerships with industry, other universities and national laboratories, I am confident that COSTAR will quickly achieve that goal.

Again, congratulations Dag and Jerry, and thank you Total, Shell and ExxonMobil for your support.

It is now my distinct pleasure to introduce the next speaker this afternoon, The Honorable Jon Huntsman, Governor of the State of Utah. Before I read your impressive background, Governor, I noticed that you and I share a love for foreign languages. You speak fluent Mandarin Chinese, and I, even though I grew up in Oklahoma, speak fluent Texan.

Governor Huntsman was elected to his position in November 2004. During his first term, he has been working to breathe new life into Utah by bolstering economic development, enriching public education, maintaining an unparalleled quality of life, and enhancing confidence in public service. He currently serves on the Executive Committee of the National Governors Association and was elected Chairman of the Western Governors Association in June 2008.

Governor Huntsman earned a bachelor's degree from the University of Pennsylvania. His public service career began as a White House staff assistant to President Ronald Reagan and has included senior appointments in the Commerce Department and the State Department, as well as service as Deputy United States Trade Representative. He has twice been unanimously confirmed by the Senate as a U.S. Ambassador. He and his wife, Mary Kaye, have seven children, including two adopted daughters from China and India.

Governor, it is indeed an honor to welcome you to the Colorado School of Mines.

*[Governor Huntsman's remarks]*

Thank you for those insightful comments, Governor Huntsman. And thank you for taking the time from your very busy schedule to join us today to address this important topic.

It is now my pleasure to introduce Mr. Harris Sherman, Executive Director of the Colorado

Department of Natural Resources. Mr. Sherman is a member of Governor Ritter's Cabinet and oversees Colorado's energy, water, wildlife, parks and state lands programs. Mr. Sherman also serves as the Director of Compact Negotiations for the Colorado Interbasin Compact Commission, as chairman of the Colorado Oil and Gas Conservation Commission, and as a member of the Colorado Wildlife Commission, the Colorado Ground Water Commission, and the Colorado Water Conservation Board.

Prior to his current appointment, Mr. Sherman's law practice focused on natural resources, environmental, water, public land, real estate and Indian law. Mr. Sherman earned his law degree at Columbia University. He also brings with him a long history of dedicated volunteer service, particularly on issues affecting education and the environment.

We are most honored to have him join us today. Mr. Sherman.

*[Mr. Sherman's remarks]*

Thank you, Mr. Sherman, for those thoughtful remarks.

I am now very pleased to have the opportunity to introduce Dr. Foster Wade, Deputy Assistant Secretary for Land and Minerals Management of the U. S. Department of the Interior. Before joining the Department of the Interior, Dr. Wade held a wide variety of executive and managerial positions in the oil and gas industry, including upstream, downstream and corporate functions. We are indeed fortunate to have Dr. Wade join us again at this year's Oil Shale Conference. Dr. Wade.