

Curriculum Vitae
Michael R. Walls

Home:
15955 West 77th Place
Arvada, Colorado 80007
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Division of Economics & Business
Colorado School of Mines
Golden, Colorado 80401
Ph: 303.273.3492

Education: **University of Texas at Austin**

Ph.D., Management, May 1992
MBA, Finance, May 1988

Western Kentucky University

B.Sc., Geology, May 1974

Present

Position: **Professor and Chair,**
Engineering and Technology Management Program
Division of Economics & Business
Colorado School of Mines

**Areas of
Expertise:**

**Decision Analysis, Petroleum Economics and Risk Management,
Corporate Planning in Petroleum E&P, Corporate Finance.**

**Refereed
Publications:**

Walls, M.R. (2005). "Corporate Risk Taking and Performance: A 20 Year Look at the Petroleum Industry", *Journal of Petroleum Science and Engineering*, Vol. 48, PP. 127-140. Walls, M.R. (2005).

Walls, M.R. (2005). "Measuring and Utilizing Corporate Risk Tolerance to Improve Investment Decision Making," *Engineering Economist*, Volume 50, Number 4, pp. 361-376.

Walls, M.R. (2004). "Combining Decision Analysis and Portfolio Management to Improve Project Selection in the Petroleum Exploration and Production Firm", *Journal of Petroleum Science and Engineering*, Vol. 44, pp. 55-66.

Suslick, S. & M.R. Walls (2001). "Managing Technological and Financial Uncertainty: A Decision Science Approach for Strategic Drilling Decisions", *Natural Resources Research*, January 2001.

Walls, M.R., Thomas, M.E., Brady, T.F. (1999). "Improving System Maintenance Decisions: A Value of Information Framework", *Engineering Economist*, Vol. 44, No. 2, pp. 151-167.

Clyman, D.R., M.R. Walls, & J.S. Dyer (1999). "Too Much of a Good Thing?", *Operations Research*, November-December, 1999.

Torries, T. and Walls, M.R. (1998). *Evaluating Mineral Projects: Applications and Misconceptions*; Society for Mining, Metallurgy, and Exploration.

Walls, M.R. and Clyman, D. (1998). "Risky Choice, Risk-Sharing, and Decision Analysis: Implications for Managers in the Resource Sector", *Resources Policy*, Vol. 24, No. 1, pp. 49-57.

Walls, M.R. (1998). "Corporate Risk Taking and Performance: A 15 Year Look at the Oil Industry". SPE Paper #49181, Fall 1998

Walls, M.R. (1996). "Developing an Exploration Decision Support System: A Strategy for Combining Information and Analytics", *Nonrenewable Resources*, Vol. 5, No. 3, pp. 181-192.

Walls, M.R. & Dyer, J.S. (1996). "Risk Propensity and Firm Performance: A Study of the Petroleum Exploration Industry", *Management Science*, Vol. 42, No. 7:1004-1021.

Walls, M.R. (1996). "An Examination of Risk Propensities in an Organizational Context: Differences by Discipline and Position", *ORiON*, Vol. 11, No. ½, pp. 41-57.

Walls, M.R. & Eggert, R.G. (1996). "Managerial Risk-Taking: A Study of Mining CEOs, *Mining Engineering*, Spring 1996.

Walls, M.R., Morahan, T. & Dyer, J.S. (1995). "Decision Analysis of Exploration Opportunities in the Onshore US at Phillips Petroleum Company", *Interfaces*, Vol. 25:6 November-December, pp. 39-56.

Walls, M.R. (1995). "Integrating Business Strategy and Capital Allocation: An Application of Multi-Objective Decision Making", *Engineering Economist*, Vol. 40: No. 3, Spring 1995, pp. 247-266.

Walls, M.R. (1995) "Corporate Risk Tolerance and Capital Allocation: A Practical Approach to Implementing an Exploration Risk Policy", *Journal of Petroleum Technology*, SPE Paper No. 28281, April 1995, pp. 307-311.

Other Publications:

Walls, M.R. (2000). "Oil and Gas Journal Roundtable on E&P Risk: Risk-based Decision Analysis", *Oil and Gas Journal*, October 23, 2000.

Clyman, D. & M.R. Walls (1999) Case Study: *Birch Resources, A & B*.

Walls, M.R. (2001) Case Study: *South Texas Energy Corporation*.

Walls, M.R. (1999). "Corporate Risk Taking in the E&P Industry", *Oil & Gas Executive*, (A Journal of the SPE) Spring Issue, 1999.

Walls, Mr. & Thomas Torries (1998). Book Chapter entitled "A Review of Risk Tolerance and Certainty Equivalence" in *Handbook of Mineral Project Evaluation*, Society of Mining Engineers (1998).

Walls, M.R. (1998). "The Role of Uncertainty and Risk in Petroleum Decision Making", Conference Proceedings of the Society of Petroleum Evaluation Engineers' (SPEE) 1998 Annual Meeting in Monterey, California.

Walls, M.R. & J.P. Steele (1997). "Managing Uncertainty in Predictive Maintenance Systems: A Decision Analysis Approach". *P/PM Technology*, Volume 10, Issue 2, April 1997, pp. 46-52.

Walls, M.R. (1994). "Managing Risks in the Petroleum Exploration Firm: A Multi-Criteria Portfolio Model for Capital Allocation", 1994 *Proceedings Volume, The International Association of Energy Economists*, Vol.13.

"*Mining: A World Perspective*". Published report summarizing the CSM/Heidrick & Struggles joint survey of mining CEOs (with Heidrick & Struggles), Los Angeles, CA., January, 1995.

Walls, M.R. (1994) "Risk, Risk Aversion and Corporate Capital Allocation", *Proceedings Volume, Mineral Economics and Management Society*, Katherine McClain, Editor. Vol 4, Washington, D.C.

Walls, M.R. (1992). "Study: Firms Must Determine Their Optimal Risk-Tolerance Level". *Oil and Gas Investor*, Volume 12, Number 11.

Walls, M.R. (1990). "Software Utilizes Firm's Risk Attitude in Prospect Evaluation". *Oil and Gas Journal*, Volume 88, Number 4.

Walls, M.R. (1988). "Assessing the Corporate Utility Function - A Model for the Oil and Gas Exploration Firm", *Bulletin of the South Texas Geological Society*, Volume 29, No. 4.

Working Papers

Walls, M.R. "Alternative Methods for Estimating Corporate Risk Tolerance – Issues and Dilemmas". In Progress.

Phillips, J, Newman, A., Walls, M. "Utilizing a Value of Information Framework to Improve Ore Classification and Collection Procedures." Under Review at the *Engineering Economist*.

Heeley, M.;Walls, M. "A Bid Analysis Study of Western Gulf of Mexico: Findings and Implications for Bid Decision Making." In Progress.

Walls, M. "Acquisition vs. Organic Growth in the E&P Sector: Who are the value creators?" In Progress.

Courses Taught:

Colorado School of Mines:

Decision Analysis
Corporate Finance
Mineral Industry Finance
Engineering/Petroleum Economics
Business and Competitive Strategy
Principles of Economics
Engineering and Technology Management Capstone

University of Texas at Austin

Strategic Decision Making (MAN 337.13) Spring 1991
Decision Analysis (MAN 337.11) Fall 1991

**Invited Talks/
Presentations:**

- ◆ Walls, Michael R. (2005). “Alternative Methods for Estimating Corporate Risk Tolerance – Issues and Dilemmas, invited presentation at the 2005 INFORMS conference, San Francisco, California, November 13, 2005
- ◆ Walls, Michael R (2004). “Perspectives on Corporate Risk Attitudes – A Panel Discussion”, invited chair and presenter at the 2004 INFORMS conference, Denver, Colorado, October 25, 2004
- ◆ Walls, M.R. (2004). Risk and Portfolio Management – Utilizing Recent Advances to Evaluate Improved Oil Recovery Projects and Practices. Program for Petroleum Engineering Summer School of the Inter-University Centre, Dubrovnik, Croatia in “IOR Methods for Economical Oil Recovery in Small Size and/or Marginal Oil Fields”, June 18, 2004
- ◆ “Risk Tolerance and Firm Performance: A 20 Year Look at the Petroleum Exploration and Production Industry”, invited chair/speaker at the 2002 INFORMS conference, Atlanta, Georgia, October 20, 2003.
- ◆ “Decision Analysis Applications in the E&P Sector”, SPE Forum on Petroleum Risk Management in New Orleans, LA, April 13, 2002.
- ◆ “Risk Tolerance and Portfolio Management – Selecting the Optimal Portfolio for the E&P Firm”, Landmark Corporation’s Petroleum Technology Conference, London, England, March 22, 2001.
- ◆ “Applications of Portfolio Management to the Petroleum Industry”, SPE Forum on Petroleum Risk Management in Breckinridge, Colorado, April 5, 2001.
- ◆ “Improving E&P Performance through Advances in Risk and Portfolio Management”, INFORMS Annual Meeting, San Antonio, Texas, November 6, 2000.
- ◆ “Applications of Portfolio Management to the Technology Sector”, invited speaker to “e-Commerce Developments” conference in Houston, Texas sponsored by the Maguire Institute at Southern Methodist University, March 23, 2000.
- ◆ “Modern Risk Management Techniques for Mine Managers at Cyprus Amax Coal Company”. Invited speaker to Cyprus Amax in Pittsburgh, PA., February 2000.

- ◆ “Portfolio Management and Its Application to the E&P Capital Allocation Process”, Invited speaker to Energy Technology Conference in Kuala Lumpur, Malaysia, February 14, 2000.
- ◆ “Measuring Financial Risk Tolerance in the E&P Firm: A Discussion of Alternative Methodologies”, presented at the Darden School of Business, University of Richmond, Invited Lecturer Series, April 25, 1999.
- ◆ “Finance for non-Financial Mine Supervisors”; a short course for mine supervisors at BHP Coal Company, April 1999.
- ◆ “Portfolio Management for E&P Decision Making” presented to senior management representatives from Phillips Petroleum, British Petroleum, and Chevron; sponsored conference by Ernst and Young LLP’s World Energy Group in Houston, 1999.
- ◆ “The Role of Uncertainty and Risk in Petroleum Decision Making”, presented at the Society of Petroleum Evaluation Engineers (SPEE) Annual Meeting in Monterey, CA, fall, 1998.
- ◆ “Risk Management in the Petroleum Sector: An Analysis of Risk and Performance of U.S. Based Oil Companies”, invited speaker at the 1998 Annual Society of Petroleum Engineers (SPE) Technical Conference in New Orleans, La., September 29th, 1998.
- ◆ “Too Much of a Good Thing?” (with Dana Clyman and J.S. Dyer), INFORMS National Conference, San Diego, CA, May 6, 1997.
- ◆ “Corporate Risk Tolerance and Performance: A 15 Year Look at the Oil Industry”, Invited Speaker at the Schlumberger Risk Conference in Austin, Texas, November 20, 1997.
- ◆ “Charting Strategy with Decision Analysis and Finance”, Invited Speaker at the sponsored DA session at the annual conference of the Institute for Operations Research and Management Science (INFORMS) in Dallas, Texas, October 26th, 1997.
- ◆ “Integrating Business Strategy and Decision Making: A Decision Science Approach to Effective Partnerships and Diversification”, Institute for International Research’s Risk Management Conference, San Diego, California, July 9, 1996.
- ◆ “Integrating Business Strategy and Capital Allocation: A DA Approach”, INFORMS National Meeting, Atlanta, GA, November 3, 1996.
- ◆ “Managing Uncertainty in Predictive Maintenance Systems: A Decision Analysis Approach”, Predictive Maintenance Technology National Conference, December 3-6, 1996, Indianapolis, IN (with John Steele).
- ◆ “Oil and Gas Industry Risk Tolerance Study: 1981-1996”, Invited Presentation to Amoco Corporation’s Worldwide Exploration Business Group, November 14, 1996, Houston, Texas.

- ◆ Walls, M.R. (1995). "Using Decision Analysis to Integrate Business Strategy and Capital Allocation", American Association of Petroleum Geologists Hedberg Research Conference, San Diego, California, November 1, 1995.
- ◆ Decooman, J. & Walls, M.R. (1995). "Probabilistic Analysis of Decommissioning Costs", Waste Management 1995 Symposia, Tucson, Arizona, February 28, 1995.
- ◆ Walls, M.R. Invited Session Chair. "Strategic Decision Making". The Institute of Management Science, International Meeting, June , 1994.
- ◆ "Allocating Oil and Gas Capital at Phillips Petroleum with DISCOVERY", The Institute of Management Science, International Meeting, June , 1994
- ◆ "Risk, Risk Aversion and Corporate Capital Allocation", Mineral Economics and Management Society Annual Meeting, March 22, 1993, Washington, D.C.
- ◆ "A Multi-Criteria Portfolio Model for Capital Allocation", Seminar on Risk and Decision Making, May 28, 1993, sponsored by Anadarko Petroleum Corporation, Houston, Texas.
- ◆ Casey, A., Martin, W., Walls, M.R. "A Conceptual Framework for Incorporating Environmental Issues into Gold Mine Development Decisions". Rocky Mountain Association of Environmental Professionals, Denver, Colorado, September 16, 1993.
- ◆ "Improving Decisions Through Quality Risk Management", Seminar on Risk and Decision Making, March 13, 1993, sponsored by Phillips Petroleum Company, Bartlesville Oklahoma.
- ◆ "Corporate Risk Tolerance and Firm Performance", Meeting of the Rocky Mountain Chapter of the International Association of Mineral Economists. September 23, 1992 -
- ◆ "Corporate Strategy and Performance - The Risk Policy Implications". Invited Session of the ORSA/TIMS Joint National Meeting, San Francisco, California, November 2, 1992.

Professional Activities:

Michael R. Walls & Company (www.wallscompany.com)

Management Consulting and Litigation Support

Recent Engagements Include:

- ◆ Lecturer, Executive Seminar, "Managing Risks and Strategic Decisions in Petroleum Exploration", 1991-2006. Participants include senior level managers from over 100 major and independent oil companies. Other venues include Houston, Denver, Calgary, London, Melbourne, Singapore, Caracas, Bogota, Rio de Janeiro, New York, San Francisco, Denver.

- ◆ Providing various in-house seminars for companies on the topics of strategic decision making, risk management and business strategy. In-house seminars have been provided for a number of companies including Texaco, Phillips, Anadarko, Petrobras, ETAP, BHP Petroleum, PDVSA, Schlumberger, BP Exploration, and Amoco, Cabot Oil and Gas, JM Huber, Occidental Petroleum, and others.
- ◆ Providing a two-day executive-level briefing on capital allocation and portfolio management to a large Canadian-based independent oil company with worldwide petroleum interests. Developing for this client a spreadsheet-based portfolio planning model with the firm's business objectives.
- ◆ Lead evaluator for the Ernst & Young evaluation team for the U.S. Department of Energy's Elk Hills Naval Petroleum Reserve in Bakersfield, California. This asset was sold to Occidental Petroleum for \$3.6 billion.
- ◆ Developing a spreadsheet-based multi-criteria portfolio planning model for a large U.S.-based independent oil company with international petroleum activities; integrated strategic-level business objectives which were utilized in the evaluation of major investment alternatives.
- ◆ Developing an Excel/Access based competitive analysis model for a major oil company; this program is utilized to analyze competitor risk taking, its effects on bid strategies and business unit performance.
- ◆ Providing expert testimony with regard to valuation of exploration and production assets and activities for a large independent oil company.
- ◆ Advising a major integrated oil company on risk management policy and systems design for managing exploration risk in the capital allocation process.
- ◆ Assisting a major industrial firm in quantifying and utilizing a corporate decision and risk policy for strategic investment analysis.
- ◆ Assisting an international group of exploration directors from a major oil company in developing a capital allocation model for risky investments.