

Dr. David L. Bodde
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Senior Fellow and Professor, Arthur M. Spiro Institute for Entrepreneurial Leadership, Clemson University. Research, teaching, and consultation in:

- **Technology and strategy in the energy industries**
- **New venture development**
- **Advanced energy technology**
- **Corporate entrepreneurship**

PREVIOUS PROFESSIONAL EXPERIENCE

University of Missouri – Kansas City, July 1996 to September 2004

Charles N. Kimball Chair in Technology and Innovation at the University of Missouri, Kansas City. Joint appointment as Professor of Engineering and Business Administration.

Midwest Research Institute (MRI), January 1991 to July 1996

Corporate Vice President and President of for-profit subsidiary, MRI Ventures. New enterprise development through cooperative research, new ventures, licenses, and international agreements.

National Academy of Sciences, April 1986 to January 1991

Executive Director, Commission on Engineering and Technical Systems. Directed research and studies on public and private issues in science and technology.

U.S. Government, March 1978 to March 1986

Assistant Director, Congressional Budget Office, United States Congress. Economic analyses of legislation affecting energy, industrial competitiveness, agribusiness, science, and technology.

Deputy Assistant Secretary, Department of Energy. Nuclear energy, coal, synthetic fuels, electric utilities, technology transfer and national security. U.S. delegate to International Nuclear Fuel Cycle Evaluation, seeking agreement on plutonium recycle to slow the proliferation of nuclear weapons.

TRW, Inc., January 1976 to March 1978

Manager, Engineering Analysis Office, Energy Systems Planning Division. Built business using systems analysis and engineering studies.

U.S. Army, 1965 to 1970

Captain. Platoon leader, company commander, and battalion operations officer. Airborne and Ranger qualified. Service as combat engineer in Vietnam (1968-69).

EDUCATION

Harvard University

Doctor of Business Administration, March 1976. Doctoral thesis on the influence of regulation on the technical configuration of commercial nuclear power plants. Harding Foundation Fellowship.

Massachusetts Institute of Technology

Master of Science degrees in Nuclear Engineering (1972) and Management (1973). Atomic Energy Commission Fellowship. Experimental thesis on irradiation-induced stress relaxation.

United States Military Academy

Bachelor of Science, 1965. Commissioned Second Lieutenant, U.S. Army.

CURRENT BOARD MEMBERSHIPS

Great Plains Energy

Board member of diversified energy company, 1994 - present. Chair, Nuclear Committee; Chair, Governance Committee; Member, Audit Committee.

The Commerce Funds

Founding director of family of mutual funds, currently with \$2.2 billion assets under management. Growth and Bond Funds achieved Morningstar 5-Star ranking. 1995 – present.

ADVISORY BOARDS

Electric Power Research Institute Chairman, EPRI Advisory Council, 1999 – 2002

U.S. Department of Energy Chairman, Environmental Management Advisory Board, 1996 - 2001

PERSONAL

Grew up in Kansas City, Missouri. Married (since 1967) with four children. Enjoy competitive athletics, especially racquetball and tennis. Frequent backpacker, amateur historian, bad poet, and worse musician.

Author of *The Intentional Entrepreneur* (M. E. Sharpe 2004); co-author of *The Hydrogen Economy* (National Academies Press 2004); and editor of *Managing Enterprise Risk: What the Electric Industry Experience Implies for Contemporary Business* (Elsevier 2006). Additional publications in technology management, energy, and policy.

October 2007

RECENT PUBLICATIONS and RELATED AUTHORSHIP 2000 – September 2007

Dr. David L. Bodde

Books and Book Chapters

“Lost in Option Space: Risk Partitioning to Guide Climate and Energy Policy,” in *Driving Climate Change: Cutting Carbon from Transportation*, Elsevier Press, D. Sperling and J. Cannon, eds. 2007

Managing Enterprise Risk: What the Electric Industry Experience Implies for Contemporary Business, K. Leggio, D. Bodde, and M. Taylor, eds. Elsevier Press, 2006.

- “Surprised by Choice: The Implications of New Technology for Strategic Risk,” in *Managing Enterprise Risk: What the Electric Industry Experience Implies for Contemporary Business*, K. Leggio, D. Bodde, and M. Taylor, eds. Elsevier Press, 2006.
- “The Application of Banking Models to the Electric Power Industry: Understanding Business Risk in Today’s Environment,” in *Managing Enterprise Risk: What the Electric Industry Experience Implies for Contemporary Business*, Leggio, Bodde, and Taylor, eds. Elsevier Press, 2006.
- “Knowledge, Imagination, and the Domain of Habitual Thinking,” in *Managing Enterprise Risk: What the Electric Industry Experience Implies for Contemporary Business*, K. Leggio, D. Bodde, and M. Taylor, eds. Elsevier Press, 2006.

Review of the Research Program of the FreedomCAR and Fuels Research Program, Committee on Review of the FreedomCAR and Fuels Research Program, National Academy Press, National Academy of Sciences, Washington, D.C. 2005.

“Doing Good by Doing Well: Entrepreneurship in the Hydrogen Transition,” in *The Hydrogen Transition*, Elsevier Press, D. Sperling and J. Cannon, eds. May 2004.

The Intentional Entrepreneur: Bringing Technology and Engineering to the Real New Economy, M. E. Sharpe, Armonk, New York. April, 2004.

The Hydrogen Economy: Opportunities, Costs, Barriers, and R&D Needs, National Academy Press, National Academy of Sciences, Washington, D.C. February 2004.

Invited Congressional Testimony

The H-Prize Act of 2006 Testimony presented to the Committee on Science, U.S. House of Representatives, 27 April, 2006

Fueling the Future: The Road to the Hydrogen Economy Testimony, Committee on Science: Subcommittee on Research and Subcommittee on Energy, U.S. House of Representatives, 20 July, 2005

Improving the Nation's Energy Security: Can Cars and Trucks Be Made More Fuel Efficient?
Testimony presented to the Committee on Science, U.S. House of Representatives, 9 February, 2005

Journal Publications

David L. Bodde, "Future Imperfect: Managing Strategic Risk in an Age of Uncertainty," (Part II)
Public Utilities Fortnightly, February, 2007

David L. Bodde, "Future Imperfect: Managing Strategic Risk in an Age of Uncertainty," (Part I)
Public Utilities Fortnightly, January, 2007

David L. Bodde, Karyl Leggio, and Marilyn Taylor, "Speaking Uncertainty to Power: Scenario Planning and Risk in Long-Range Technology Development," *Oil, Gas, and Energy Quarterly*, June 2005.

Leggio, Karyl, David L. Bodde, and Marilyn Taylor, "The Application of Banking Models to the Electric Power Industry," *Oil, Gas, and Energy Quarterly*, December 2003.

Leggio, Karyl, Marilyn Taylor, David Bodde and Theresa Coates "Dating, Engagements, and Marriages among Electric Utilities: An Application of Options Theory," 2001, *Current Issues in Management*, 1:1, 43-61.

Principal Peer Reviews

Reviewer, *An Assessment of the Small Business Innovation Research Program at the Department of Energy*, a National Academies report, September 2007.

Reviewer, *Capitalizing on Science, Technology, and Innovation: An Assessment of the Small Business Innovation Research Program*, a National Academies report, June 2007.

Reviewer, *Alternatives to the Indian Point Energy Center for Meeting New York Electric Power Needs*. National Research Council, National Academy of Sciences, May, 2006.

Reviewer, *Revised Methodology for Assessing Benefits of Applied Energy R&D*. National Research Council, National Academy of Sciences, October, 2005.

Reviewer, *Novel Approaches to the Management of Greenhouse Gases from Energy Systems*, National Research Council, National Academy of Sciences, May, 2004.

Reviewer, *Long Range Energy R&D: A Methodology for Program Development and Evaluation*, TR-112-NETL, RAND, Santa Monica, California, March, 2004.

Review Monitor, *U.S. Natural Gas Demand and Supply Projections*, National Research Council, National Academy of Sciences, July 2003.

Review Monitor, *Concentrated Solar Power*, National Research Council, National Academy Press, December, 2002.

Member, Peer Review Committee for review of management of Fermi National Accelerator Laboratory, November 2001.

Reviewer, *Renewable Power Pathways: the U.S. Department of Energy's Renewable Energy Programs*. National Research Council, National Academy Press, 2000.

Principal Speeches, Lectures, and Conference Papers

Speaking Tech to Power: Moral Reasoning for the Engineer's Role in Public Policy, peer reviewed paper, American Society for Engineering Education, Annual Meeting and Conference, 24-27 June, 2007 (published in Conference Proceedings).

"Give Entrepreneurship a Chance," invited lecture at 60th Annual National Conference on the Advancement of Research, Savannah, Georgia, 12 April 2007.

"On the Verge," Luncheon speech (Edmonton) and Dinner speech (Calgary) presented to Alliance for Capitalizing on Change, Canada, 16-18 October, 2006.

"The Fight for the Future," Invited policy address presented at the Gordon Research Conference on fuel cells, Bryant College, Rhode Island, 27 July, 2006.

"Executive Decision-Making under Conditions of Uncertainty: Lessons from Scenario Planning, Real Options Analysis, and the KUU Framework," an invited paper presented at the 23rd International Conference of the World Association for Case Method Research & Application, Brisbane, Australia 2—6 July, 2006. With Marilyn Taylor, Karyl Leggio, and F. Lee Van Horn.

"Clemson University: Automotive Partnerships to Advance the Hydrogen Transition," Luncheon presentation to Under Secretary of Energy and Senator DeMint (R, SC), Center for Hydrogen Research, Aiken SC, 30 May, 2006.

"The Auto at the Discontinuity," invited presentation at the Southeast Environmental Management Association conference, Augusta, Georgia, 19 April, 2006.

Panel Member, *Securing Our Future: the Hydrogen Alternative*, a broadcast of South Carolina Educational Television (ETV) and the Educational Television Network, 29 March, 2006.

"The Power of Innovation: Energy at the Discontinuity," invited Keynote Address, Power Systems 2006 Conference, Clemson University, 16 March, 2006.

Co-Chairman, *Innovation Workshop 2006*, Electric Power Research Institute, Dallas, Texas, 22-23 February, 2006.

"Beyond Habitual Thinking: Education for Entrepreneurship and Innovation," invited Keynote Address, ASME Workshop on Engineering Entrepreneurship and Innovation, Washington, D.C. 12 December, 2005.

"Oil Dependency and America's Future," Robert J. Rutland Center for Ethics, Clemson University, 11 October, 2005.

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Guest, “Kansas City Week in Review” discussing energy policy on the 30th anniversary of the OPEC oil embargo of 1973, Kansas City Public Television, 17 October, 2003.

CNBC live interview on electric power blackout of Eastern United States, 25 August, 2003.

Invited panel member, *Electric Technology Roadmap*, a workshop on technology opportunities in sustainable energy sponsored by the Electric Power Research Institute, Palo Alto, California, April 28-29, 2003.

Invited speaker and panel member, “Increasing the Role of Higher Education in Economic Development,” a symposium sponsored by the College of Engineering, University of Missouri, Columbia and the Department of Economic Development, State of Missouri, Columbia, Missouri 14 March, 2003.

“Identifying, Valuing, and Managing Risk” a panel held at the Midwest Academy of Management meeting, St. Louis, Missouri, April 2003.

“The Application of Banking Models to the Electric Power Industry: Understanding Business Risk in Today’s Environment”, with Karyl Leggio and Marilyn Taylor, presented (by Leggio) at the July 5-7, 2003 European Financial Management Association meeting in Dublin, Ireland, at the 2003 European Business Research Conference in Venice Italy, the 2003 Global Conference on Business and Economics in London, England, and the 2003 World Association of Case Research Authors in Bordeaux, France.

Invited Chair, “Capacity Growth, Investment, and Privatization” panel at a conference, *The Political Economy of Power Market Reform* hosted by the Program on Energy and Sustainable Development, Stanford University, 19-20 February, 2003.

Invited to present “To Sell a Better Mousetrap” and serve as session chair at a conference *Teaching Entrepreneurship to Engineers*, sponsored by Polytechnic University of New York, the National Science Foundation, and the Engineering Conferences Foundation, Monterey, California January, 2003

“Three Laws and the New Competitive Game” an invited address to candidates for state office at the Forum on Higher Education and Economic Development, sponsored by the Civic Council of Kansas City, 3 September, 2002, Stowers Institute, Kansas City, Missouri.

General Chairman, Electric Power Research Institute Summer Seminar, “Electricity and the World Environment” Coronado, California. August, 2002.

Panel Member, “Industry Outlook on Information Technology” sponsored by Ingrams magazine and gathering technology leaders from the metropolitan area, 25 July, 2002.

Guest, “Kansas City Week in Review” discussing shipment of spent nuclear fuel through Missouri for final disposal, Kansas City Public Television, 12 July, 2002.

Luncheon Speaker, Women’s CEO Group, 2 May, 2002.

Invited by Governor of Missouri to speak on “The Information Technology Industry in Missouri” at the first statewide Information Technology Roundtable, 14 August 2001.

General Chairman, Electric Power Research Institute Summer Seminar, “Closing the Electricity-Infrastructure Gap – Can We Avert a Crisis?” Coronado, California. August, 2001

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“Dating, Engagements, and Marriages among Electric Utilities: An Application of Options Theory”
with Karyl Leggio and Marilyn Taylor, 2001 World Association for Case Method Research and Application,
Lund University, Sweden.

Invited speaker at the 2001 Bell Conference on *Digital Technologies and the Environment: New
Challenges and Pathways to Sustainability*, organized by The Wharton School, University of Pennsylvania, and
the World Resources Institute, Philadelphia, Pennsylvania 19-21 July, 2001.