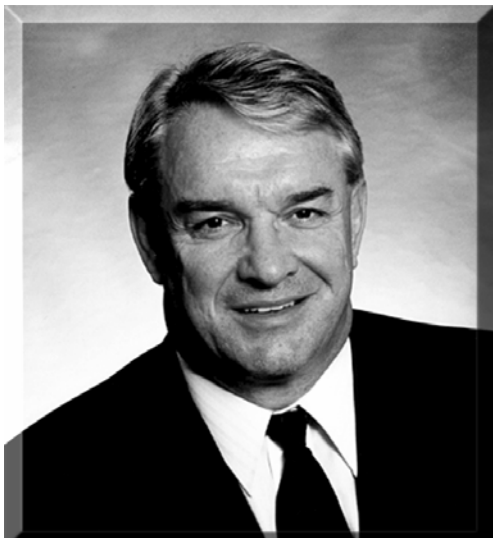


Michael L. Knotek, PhD



Career Summary

Dr. Knotek has more than 35 years of experience in the conduct and management of collaborative multidisciplinary national and international research at DOE laboratories and user facilities. He has specialized in managing transitions in scientific and technological communities and institutions from the federal agency level through national laboratories, facilities and programs. This work involved multiple DOE laboratories, federal and state agencies, universities, and industrial partners in establishing scientific goals, setting funding priorities, and guiding major new investments. He has built strong working relationships throughout the DOE research complex and with international R&D institutions and industry. He has attracted world-renowned scientific talent to DOE institutions and continues to serve as a resource to DOE, NSF, and other agencies for developing, managing, and evaluating large research projects and

laboratory environments. Since the mid-1980s, Dr. Knotek has led the creation or restructuring of major DOE scientific projects and communities, including synchrotron radiation (1984), environmental science (1989-94), fusion energy sciences (1996), Terascale advanced scientific computing (1998-99), and Post-genomic biology (2000-present).

April 2001 - Present Dr. Knotek is now a private consultant, specializing in "transitions" in science and technology, including creation of new research directions, strategic planning, project management, turnarounds, and roadmapping for multi-disciplinary, and multi-institutional programs and facilities.

2000-April 2001 Dr. Knotek was on assignment for the Department of Energy Office of Biological and Environmental Research at Biosphere 2 Center, out of Sandia National Laboratories in California. He was leading the development of the DOE- B2C partnership, that will establish research and education directions, the bases for partnerships, and the long-term strategy for development of The Biosphere 2 facility as a part of the national suite of scientific user facilities devoted to understanding Earth System behavior under 21st Century Energy scenarios. In addition, he led the development of the roadmap for the DOE Genomes to Life Initiative from Sept. 2000 through April 2001, with a team from several national laboratories, and academia.

1999-2000 Special Assistant to the Director, ORNL, Lockheed Martin Energy Research Corporation. Led the development, submission, and presentation of the URA/Lockheed Martin proposal for the \$3B contract to manage ORNL, and served as Director Designate on that proposal. Assisted the Director in evaluating and managing major projects at the Laboratory, including SSI, the Spallation Neutron Source, robotics, and functional genomics.

1998-1999. Senior Advisor to the Secretary of Energy, U.S. Department of Energy. Worked with the Undersecretary on programmatic and laboratory management reform across DOE's \$7.2 billion R&D portfolio and the DOE national laboratories' scientific capabilities and roles. Led the development of scientific roadmapping as a tool for cross-agency integration of R&D portfolios.

1997. IITRI/Westinghouse proposal for the Operation and Management of Brookhaven National Laboratory. Led the IITRI/Westinghouse proposal presentation for the M&O contract for BNL as the laboratory director designate.

1997. Argonne National Laboratory Fellow at the Advanced Photon Source. As a Distinguished Science Executive, led the design and developing of the scientific case for fourth-generation free-electron laser sources. Involved in formulating advanced use of the APS and developing future experimental programs.

1994-1997. Chief Technology Officer, Battelle Memorial Institute. Developed overall science and technology strategy across Battelle's \$800 million to \$1 billion worldwide research operations, including the establishment of Core Competencies and technical networks - led the technical elements of full McKenzie and Associates analyses of BMI and PNNL. Battelle had 7,000 personnel in support of DOE, numerous other federal agencies, and international corporations across a wide range of scientific and technical disciplines.

1994-1997. Associate Laboratory Director for Environmental and Energy Sciences, Pacific Northwest National Laboratory. Responsible for restructuring environmental, material, chemical, biological, computational, and energy sciences of this 700-person organization. Managed \$150 million research portfolio. Led the restructuring of DOE's environmental sciences research community, resulting in creation of the Environmental Molecular Sciences Laboratory, which he directed concurrent with this position - led to 2 major DOE scientific and management awards (below).

1989-1994. Senior Science Director, Pacific Northwest National Laboratory. Leadership of PNNL's \$300M overall Science and Technology portfolio, including management of the ~\$20M/yr. Laboratory Directed Research and Development portfolio, establishment of new scientific thrusts, especially in the realm of environmental science and technology. Developed the science and technology core underlying PNNL's designated mission as an environmental laboratory. Led recruitment activities which resulted in > 300 scientific staff hires. Developed the scientific core of PNNL to support transition from a Hanford Site laboratory to an Office of Energy Research Multiprogram National Laboratory. He was responsible for involving BMI corporate organizations in PNNL developments and programs, and for transferring technology from PNNL to BMI.

1989-1994. Director, Environmental Molecular Sciences Laboratory (EMSL), Pacific Northwest National Laboratory. Directed the first effort to establish the basic research needs for environmental stewardship, environmental restoration, and waste management for DOE. Secured \$230 million in programmatic funding to establish the 200-person EMSL as a national user facility. Responsible for designing and staffing the facility, formulating programs, and enlisting political and scientific support.

1985-1989, Chairman of the National Synchrotron Light Source (NSLS), Brookhaven National Laboratory. Responsible for all aspects of development, operation, expansion, and upgrading, as well as the full scientific program. Secured funding for new construction and upgrades. Under Dr. Knotek's leadership, NSLS grew to 1,800 users from 150 universities, 40 industrial laboratories, and 20 federal laboratories, with a \$25 million budget and a staff of 200 - the most productive materials research facility in the world, which it remains today.

1979-1985. Director of the Surface Physics Division at Sandia National Laboratories. Conducted and managed basic and applied research, including synchrotron-based studies. Participated in the construction of beam lines at SSRL and NSLS with Los Alamos National Laboratory, the University of Texas, and Cornell University. Developed the science and technology of numerous surface science techniques and promulgated them throughout Sandia National Laboratories in support of Sandia missions.

1972-1979. Technical staff member at Sandia National Laboratories. Discovered the fundamental mechanism for desorption that governs the breaking of chemical bonds by radiation across a wide range of materials. He was the first to demonstrate photon-stimulated desorption of ions from surfaces by using synchrotron radiation; this work changed the fundamental understanding of how radiation affects the chemical bond.

1966-1972. U.S. Naval Weapons Centers, Corona and China Lake, California. Conducted theoretical and experimental work on electron transport in disordered and amorphous semiconductors, and other topics.

1963-1966. Research Assistant, Ames Laboratory, Iowa State University.

Accomplishments in Scientific Management:

- Co-chair of the Planning Study for Advanced National Synchrotron Radiation Facilities, which resulted in the development, construction and operation of 2d and 3d generation synchrotron radiation sources in the US – the National Synchrotron Light Source (NSLS), The Advanced Light Source (ALS), and the Advanced Photon Source (APS) from 1984 through 1994 (1984). Led the development of the NSLS from 1985-1989 as part of that development. (DOE Distinguished Associate Award, 1993)
- For the Governor of Washington, as a member of the Board of Directors, led the restructuring of the Washington Technology Centers, including charter, mission, and enabling legislation (1992), working with administration, legislative, academic, and industrial leaders.

- As Chair of the Strategic Planning Committee of the Fusion Energy Advisory Committee, led the restructuring of the Fusion Energy Science Program at the Department of Energy (1996). (DOE Distinguished Associate Award, 1996)
- Led the development of the scientific research program needs for the Department of Energy Environmental Cleanup (1989-1994). (DOE Distinguished Associate Award, 1993, and DOE BER Research Achievement Award, 1997).
- Led the development of the Department of Energy Scientific Simulation Initiative, to establish a national network of terascale computers to provide simulation capabilities as a foundation for future research at the DOE national laboratories.
- Led the development of the Environmental Molecular Sciences Laboratory, a facility and programs which brings the physical, life, computational and environmental sciences together -- its research programs, staff, design, funding, and construction (\$230M) (1989-1994). (DOE Distinguished Associate Award 1993 and BER Research Achievement Award 1997)
- Led the development of the Genomes to Life Roadmap, working with the DOE National Laboratory System, and Academic leaders. This roadmap defines DOE's plan to utilize genome-based science to determine the functions of life and apply that knowledge to DOE mission problems in energy, the environment, national security, and human health. (2000-2001). Subsequently led the establishment of a comprehensive plan for major research facilities for 21st Century Biology for DOE. (2002)

Honors and Awards:

- Fellow of the American Association for the Advancement of Science , 2004
- U.S. Department of Energy, Office of Biological and Environmental 50th Anniversary Research Achievement Award, 1997.

For his role in defining the scientific needs for environmental understanding and restoration, and in establishing both research programs and a National User Facility focused on these programs, The Environmental Molecular Sciences Laboratory, at Pacific Northwest National Laboratory.

- U.S. Department of Energy Distinguished Associate Award, 1996

For leadership in the restructuring of the DOE's Fusion Energy Sciences Program.

- U.S. Department of Energy Distinguished Associate Award, 1993

For leadership in the development of the National Synchrotron Light Source and synchrotron science, and for the development of the Environmental Molecular Sciences Laboratory and environmental science.

- Fellow American Physical Society, 1987
- U.S. Department of Energy Award for Outstanding Scientific Accomplishment in -Metallurgy and Ceramics (For work on stress corrosion cracking in solids) 1985
- U.S. Department of Energy Award for Sustained Outstanding Research in Solid-State -Physics (for work on stimulated desorption) 1984

Publications

Dr. Knotek has had more than 110 articles and papers published in books, proceedings, and scientific journals, including the following:

Knotek, M.L. and Eisenberger, P., *Planning Study for Advanced National Synchrotron Radiation Facilities*, U.S. Department of Energy (I 984).

Knotek, M.L.; Jones, V.O.; and Rehn, V., "Photon Stimulated Desorption of Ions," *Phys. Rev. Lett.* 43(4):300-03 (1979).

Knotek, M.L. and Feibelman, P.J., "Ion Desorption by Core-Hole Auger Decay," *Phys. Rev. Lett.* 40(14):964-67 (1978).

Knotek, M.L.; Pollak, M.; Donovan, T.M.; and Kurtzman, H., "Thickness Dependence of Hopping Transportation in Amorphous Ge Films," *Phys. Rev. Lett.* 30:853 (1973).

Knotek, M.L. and Rabalais, J.W., "The Measurement of Auger Electron-Ion Coincidence Events from Surfaces," *Proceedings of the International Workshop on Desorption Induced by Electronic Transitions-DIET II*, p. 77, October 15, 1984; Schlosz Elmau, Bavaria, Eds.: W. Brenig and D. Menzel, Springer-Verlage, Berlin (1985).

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