

## Barbara A. B. Seiders, Ph.D.



Principal  
One Hundred Year Horizons  
[www.onehundredyearhorizons.com](http://www.onehundredyearhorizons.com)  
[Barbara.Seiders@eigenseide.net](mailto:Barbara.Seiders@eigenseide.net)

Dr. Seiders is currently indulging her passion for leadership and teamwork, dedicating full-time to her start up, One Hundred Year Horizons, as of 2012. Her goal at OHYH is to shape future practices of leadership. She seeks to develop and deliver leadership solutions that will stand the test of time -- through consulting, training, writing, and publishing. She is exploring urgently needed concepts in leadership: learning, practicing and teaching civil discourse; encouraging public and private accountability; moving beyond the idea of “survival of the fittest” in the workplace to the imperative of collaborative leadership; and encouraging the mindful use of language. As a foundation for her efforts, she is currently researching and writing a book on leadership principles in practice.

Dr. Seiders has over 25 years of experience in nuclear, chemical and biological nonproliferation, arms control, threat reduction and defense. Throughout her career, she has worked in domains that span the making and implementation of national and international security policies, and the science and technology that support those policies. Dr. Seiders has worked with the nation’s best and brightest scientists, engineers and mathematicians, helping to develop and deploy technology systems to better defend against nuclear explosive, radiological, chemical and biological threats. She has a demonstrated record of leadership, including serving as Science Advisor to Ambassador James Goodby, working with former Soviet President Mikhail Gorbachev on the Gorbachev Foundation Global Security Project, and as an expert consultant to former United Nations Secretary General Javier Perez de Cuellar on multiple occasions. While at the Arms Control and Disarmament Agency, Dr. Seiders served as a principal officer on delegations for chemical, biological, and nuclear testing negotiations, and in their backstopping groups in Washington. She was one of six experts who developed guidelines and procedures for use by the UN in investigations of allegations of use of chemical and biological warfare agents. She is responsible for resolution of technical issues in the Threshold Test Ban Treaty, codified in the treaty verification protocol language.

In addition to working in national security, Dr. Seiders has been delighted to support NASA in its search for life on other planets. She has participated in and led proposal review panels in NASA’s Astrobiology, Mars, and Planetary Instrumentation Definition and Development programs, resulting in selection of technology that has identified signs of water on Mars and on the moon.

An experienced public speaker, Barbara was a member of the Speakers Bureaus while at the Arms Control and Disarmament Agency and the Pacific Northwest National Laboratory. She has been featured in local, national and regional media, such as the History Channel, Seattle Post Intelligencer and NPR Morning Edition.

### EDUCATION

Dartmouth College, A.B. 1977, Chemistry  
Duke University, Ph.D. 1981, Theoretical Quantum Chemistry  
AAAS Science, Engineering and Diplomacy Fellow 1981–82  
MIT, Seminar XXI Fellow 1992-93

## EXPERIENCE

**Senior Advisor, Pacific Northwest National Laboratory (PNNL), 1994 – 2012:** As Sustainability Lead for the NNSA Second Line of Defense (SLD) program for Mongolia, Romania, and Vienna (IAEA) ensured that SLD partners had radiation detection equipment, training, procedures and infrastructure support needed to successfully monitor their borders to protect against illicit trafficking of radiological and nuclear materials. She was responsible for all aspects associated with taking teams of technical personnel on month-long trips into the countryside of Mongolia to review operation of radiation detection equipment, provide training and ensure that the systems were being used and maintained properly.

**Chemical and Biological Defense Program Manager, PNNL, 2000 - 2007:** Dr. Seiders managed the chemical and biological defense research program at PNNL, consisting of multimillion dollar projects in detection, forensics, protection, and threat assessment. Seiders led the development of technologies for detection of biological agents in the environment, a \$3M, 3-year laboratory-wide research initiative in the Detection and Characterization of Biological Pathogens. This initiative helped to establish a key Laboratory signature in the field of biodefense, and spawned numerous follow-on projects sponsored by DARPA, DOE/CBNP, Navy, TSWG and others. In addition, the Pathogen Detection initiative made possible the establishment of one of the Laboratory's most successful entrepreneurial businesses, MesoSystems.

**JCS Augmentation Team Combat Assessment, PNNL, 2002 - 2003:** As part of the Joint Chiefs of Staff (JCS/J39) Augmentation Team, Seiders contributed to studies relating to Combat Assessment; the role of the JCS in countering the threat of Chemical, Biological, Radiological and Nuclear (CBRN) terrorism (CT/CBRN); deployment of biological agent sensors in Navy operations; and quick turn-around sensor requirements for Special Operations Command.

**WMD Training, PNNL, 1999-2002:** Dr. Seiders led a team of over 60 PNNL staff members supporting the Department of State Diplomatic Security Service Anti-Terrorism Assistance Training program. Providing training to hundreds of foreign police, fire and emergency medical personnel, at the HAMMER facility in Richland and abroad, PNNL supported this program in WMD First Responder Awareness, WMD First Responder Operations, and Postal Chemical/Biological Incident Management. The multi-million dollar program included development of curriculum for the First Responder Operations and Postal Incident courses, provision of expert instructors for training at HAMMER and in the partner nations, delivery of awareness- and operations-level training, and execution of a program of immersion in American culture.

**International Nuclear Safety Program, PNNL:** Former Program Manager Laurin Dodd routinely called on Dr. Seiders in times of crisis to provide support in the form of reports to Congress, preparation of drafts of editorials and speeches for DOE Program Managers, and strategic analysis. Examples of the analyses and documents prepared for INSP include "Nuclear Reactor Safety in Ukraine and Russia," in response to Conference Report accompanying S.1124, National Defense Authorization Act for Fiscal Year 1996. Secretary O'Leary forwarded a copy to Vice President Gore in January 97, and this report became the standard for the report in future years. Dr. Seiders also prepared the draft "INSP Vision Paper," Improving the Safety of Soviet-Designed Nuclear Power Plants; A Strategic Plan. For the Office of Policy in DOE, Dr. Seiders analyzed Russian nuclear fuel

cycle to evaluate the best options, technically and politically, for cooperation in the reactor safety program.

**International Scientific Programs, PNNL:** Dr. Seiders served as the PNNL representative to the Inter-Laboratory Advisory Board (ILAB), the administrative board for the **Initiatives for Proliferation Prevention (IPP)** program, where her expertise resulted in the association of PNNL as the primary “Chem/Bio” reference lab among IPP labs. She established the foundation for significant project growth in the chemical and biological sciences at PNNL and within the IPP. Dr. Seiders also served as Science Advisor to the U.S. Delegations to Meetings of Governing Board of **International Science and Technology Center** in Moscow, Russia and of the Governing Board of Science and Technology Center of Ukraine in Kiev, Ukraine. The State Department contracted with PNNL to serve on the scientific advisory board specifically to take advantage of expertise in chemical and biological defense represented by Dr. Seiders, the Laboratory, and Battelle.

#### **PRIOR EXPERIENCE:**

**President and CEO, Strategic Resource Management Consulting, 1994:** Established cadre of over 30 consulting associates offering a complete range of skills and services to support government and private contracts. Customer support included analyzing mission roles and responsibilities of the Defense Airborne Reconnaissance Office (DARO) and developing recommendations for incorporation of arms control and counterproliferation activities into the DARO portfolio. Coordinated implementation of corporate partnerships; identified individuals as candidates for targeted strategic hires. Assisted in profiling market opportunities and business development.

**Member, Task Force on Nuclear Weapons Reduction, Test Ban and Proliferation; Global Security Project; Gorbachev Foundation USA, 1993 - 1994:** With former **Soviet President Mikhail Gorbachev** and members of Gorbachev Foundation Moscow and the Radjiv Ghandi Foundation, initiated effort to define global security framework, concluded in New Delhi, October 1994.

**Senior Scientist, Kaman Sciences Corporation 1993 - 1994:** Kaman Sciences Program Manager for Follow-On Sensors for Open Skies, DNA, subcontract to Northrop Grumman. Program Manager for Proliferation Requirements and Operations Virtual Environment (PROVE), \$3.3 M three year project under ONR BAA; principle customer, ARPA. Specialized in evaluation of technologies for applications in defense and intelligence, particularly technologies for monitoring activities relating to chemical and biological weapons proliferation. Other areas of expertise include nuclear and chemical weapons demilitarization, plutonium policy, Open Skies, nuclear testing, nonproliferation and counterproliferation.

**Science Advisor and Assistant to the Ambassador 1993:** Served as Scientific Advisor to the **U.S. Negotiator on the Safe and Secure Dismantlement of Nuclear Weapons James Goodby** on scientific and technical issues relating to the dismantlement of nuclear weapons. Accomplishments included drafting long-term plutonium disposition policy forwarded by the Ambassador to senior levels in the NSC and other agencies.

**Chief of Research, Office of the Chief Science Advisor, U.S. Arms Control & Disarmament Agency 1991 -1993:** Responsibilities included oversight of ACDA external research program,

coordination of interagency arms control research and development efforts, including strategic planning for arms control and national security. Co-chair, Chemical Weapons Task Force of the Verification Technology Working Group; principle coordinator, international CWC Verification Technology Research and Development Conference, March 1993. Member, special delegation on Russian biological weapons arms control compliance issues, October 1991.

**Special Assistant to the Deputy Director 1993:** Responsibilities included establishing Office of the Chief Science Advisor, ACDA reorganization, and issues of implementation and budgeting of arms control activities. Member, first U.S. delegation to visit Soviet CW facilities under 1989 Wyoming MOU.

**Physical Scientist, Division of Verification, Bureau of Verification and Intelligence 1986 - 1990:** Specialized in verification and compliance; nuclear testing, chemical and biological arms control. U.S. ACDA Representative to US/USSR Nuclear Weapons Talks, June 1988. Expert consultant to UN Secretary General for preparation of Guidelines and Procedures for the Investigation of Allegations of the Use of Chemical or Biological Weapons, 1988-89. Expert consultant to UN Department of Disarmament Affairs on 1988 Conference on Multilateral Verification. Member, U.S. delegation to 1986 Biological Weapons Convention Review Conference.

**Research Chemist, Chemometrics Sciences, U.S. Army Chemical Research, Development and Engineering Center 1982 - 1986:** Accomplishments included developing a quantum theoretical model that predicts with greater than 90% accuracy whether chemicals penetrate or are adsorbed on charcoal filter material. Dr. Seiders received several major awards for her research in chemical weapons and chemical defense. These awards include a 1986 R&D Achievement Award - the highest award conferred by the Army for excellence in research, and two invitations to attend the Army Science Conference, a highly competitive forum showcasing the best of Army research.

**Executive Development Trainee, Office of the Technical Director, CRDEC and Office of the Deputy Chief of Staff for Research, Development and Acquisition 1985:** Youngest of over 50 Executive Trainees and only one to receive in-service award at that time.

**Physical Sciences Officer, Office of Nuclear Technology and Safeguards, U.S. Department of State 1981 - 1982:** As a AAAS Diplomacy Fellow, I carried responsibility for IAEA safeguards and technology, inertial confinement and magnetic fusion, and international cooperation in nuclear energy. Served as Acting Head of Delegation in US/Republic of Korea Nuclear Cooperation discussions.

## **PROFESSIONAL SOCIETIES**

American Association for the Advancement of Science  
American Chemical Society  
Sigma Xi

## **OTHER ACTIVITIES**

### **PNNL Administrative Responsibilities:**

Pacific Northwest National Laboratory Institutional Biological Safety Committee Chair, 2003 – 2004; Member, 2001 – 2008.  
Member, Hanford Bio-Chem Task Team, 2001-2002.  
PNNL Derivative Classifier, 2001 – 2012, including TS ADC authority.

### **External Advisory Committees, Research Program Advisor and Proposal Reviewer for:**

NASA Planetary Instrument Design and Development Program, Group Chief for Astrobiology Panel, 2009.  
NASA Astrobiology Science and Technology Development, 2001.  
University of Oklahoma Research Cabinet; 2009.  
South Dakota Experimental Program to Stimulate Competitive Research (EPSCoR) Program; 2007.  
NASA Mars Scout Proposal Review Panel, 2006.  
Michigan Economic Development Corporation 21st Century Jobs Fund, Homeland Security and Defense Technologies; 2006.  
NASA Mars Science Laboratory, 2004.  
Micro/Nano Technologies for Advanced Physical, Chemical, and Biological Sensors Consortium; Louisiana Experimental Program to Stimulate Competitive Research (EPSCoR) Program; 2001 – 2003.  
Inland Northwest Research Alliance on behalf of the American Association for the Advancement of Science, 2002.  
Washington Technology Center Advisor Committee, 1999 – 2001.  
MEMS, Washington Technology Center, 1999 - 2001.  
Auburn University Food Science Program, 1999.  
Department of Energy SBIR Program.

### **Equal Employment Opportunity**

U.S. Arms Control and Disarmament Agency Equal Employment Opportunity (EEO) counselor, 1989 – 1992.

## PUBLICATIONS

"Evaluation of Sampling Tools for Environmental Sampling of Bacterial Endospores from Porous and Non-porous Surfaces." Valentine NB, MG Butcher, YF Su, KH Jarman, MM Matzke, BJM Webb-Robertson, EA Panisko, BAB Seiders, and KL Wahl. *Journal of Applied Microbiology* 105 (4):1107-1113, 2008.

"Technologies for distributed defense." Seiders BAB and AJ Rybka, in *Proceedings of SPIE AeroSense 2002: Technologies, Systems, and Architectures for Transnational Defense*, vol. 4745, ed. Mark K. Hamilton, pp. 13-21. SPIE-International Society for Optical Engineering, Bellingham, WA, 2002.

"Information surveillance." Seiders BAB, DL McQuerry, TA Ferryman, PD Whitney, and AJ Rybka, in *Proceedings of SPIE AeroSense 2002: Technologies, Systems, and Architectures for Transnational Defense*, vol. 4745, ed. Mark K. Hamilton, pp. 56-64. SPIE-International Society for Optical Engineering, Bellingham, WA, 2002.

"Verification of Chemical Weapons Arms Control," Barbara A. B. Seiders, in *New Technologies for Security and Arms Control*, Eric H. Arnett, ed., AAAS, 1989.

"An Investigation into the Specificity of Soman Analogues toward the Antibody BE2 using Electrostatic Potentials," John C. Culberson, George D. Purvis III, Michael C. Zerner, and Barbara A. B. Seiders, *Int. J. Quantum Chem.*, proceedings of the 1986 Quantum Biology Symposium.

"A Quantum Mechanical Investigation into the Fine Specificity of the Antibodies to Soman, BE2 and CC1," Barbara A. B. Seiders, Alan A. Brimfield, Kenneth Hunter, Michael C. Zerner, W. Daniel Edwards, and George D. Purvis III, *Int. J. Quantum Chem.*, proceedings of the 1985 Quantum Biology Symposium.

"A Quantum Mechanical Investigation into the Fine Specificity of the Antibodies to Soman, BE2 and CC1," Barbara A. B. Seiders, Kenneth Hunter, Michael C. Zerner, W. Daniel Edwards, George D. Purvis III, Peter Politzer and Keerthi Jayasuriya, CRDC-TR-84107, October 1985; presented by invitation at 1984 Army Science Conference, West Point, NY 1984; published in proceedings.

"Interaction Optimized Virtual Orbitals, I. External Double Excitations," William L. Luken and Barbara A. B. Seiders, *Chem. Phys.*, 92, 235, 1985.

"Interaction Optimized Virtual Orbitals, II. Semi-External Double Excitations," William L. Luken and Barbara A. B. Seiders, *ibid.*, 247.

"Interaction Optimized Virtual Orbitals, III. Single Excitations," William L. Luken, Barbara A. B. Seiders and Geoffrey Blake, *ibid.*, 255.

"Designing Molecules for Making Antibodies," Barbara A. B. Seiders, *Proceedings of the 1984 CRDC Scientific Conference on Chemical Defense Research*, CRDC-SP-85006, 261-265.

"Statistical Analysis of the Special Samples," J. Michael Lochner, Joseph M. Leonard, George R. Famini, and Barbara A. B. Seiders, *ibid.*, 619-623.

"The Universe is Nonlinear and Stochastic," Larry M. Sturdivan and Barbara A. B. Seiders, American Chemical Society Symposium Series, 265, 109-118 (1984).

"I. Electron Affinities of Polar Molecules, II. Lithium Carbide or Dilithioacetylene?, III. Interaction Optimized Virtual Orbitals," Barbara A. B. Seiders Doctoral Dissertation (1981).

"Theoretical Study of the Anions of BeF<sub>2</sub> and MgF<sub>2</sub>," Barbara A. B. Seiders, W. L. Luken, R. P. Blickensderfer, and K. D. Jordan, *Chem. Phys.*, 39, 285-292 (1979).

"Binding of an Electron to a Molecular Dipole: BeF<sub>2</sub>," Barbara A. B. Seiders, William L. Luken, and Kenneth D. Jordan, *Int. J. Quantum Chem.*, 14, 741-746 (1978).

#### **ILLUSTRATIVE WHITE PAPERS AND CONTRACT REPORTS**

*(Note: list is not exhaustive due to customer confidentiality.)*

"Challenges of Integrated Chemical, Biological and Radiological Threat Detection." Barbara A. B. Seiders, invited presentation, 3rd Research Coordination Meeting under CRP 22.007, Vienna, Austria, December 14, 2010.

"Nuclear Fuel Cycle in Russia and Implications for Arms Control," PNNL-11877, Barbara A. B. Seiders, Ron C. Liikala, and Alan J. Brothers, for the U. S. Department of Energy, April 1998. (60%)

"Improving the Safety of Soviet-Designed Nuclear Power Plants; A Strategic Plan," Pacific Northwest National Laboratory, October 1996. (85%)

"The Threat of Biological Weapons," Barbara A. B. Seiders and Matthew T. Freund, Special Report of the Pinkerton Risk Assessment Services, March 1996.

"Nuclear Reactor Safety in Ukraine and Russia," in response to Conference Report accompanying S.1124, National Defense Authorization Act for Fiscal Year 1996. International Nuclear Safety Program, Office of Nuclear Energy, Science and Technology; U.S. Department of Energy. (85%)

"Nuclear Disarmament in a New Global Security Context," Barbara A. B. Seiders, April 5, 1994; working paper for Gorbachev Foundation Global Security Project. (100%)

"Plutonium Disposition," Barbara A. B. Seiders, August 1, 1993; working paper for Gorbachev Foundation Global Security Project. (100%)

"Assessment of Potential Follow-On Open Skies Mission Objectives," funded by the Defense Nuclear Agency, August 1994. (98%)

"Report of the Chemical Weapons Focus Group: Recommendations for CW Monitoring Research and Development," funded by the Advanced Research Projects Agency, July 1994. (95%)

"Four Problems in Chemical and Biological Weapons Proliferation Monitoring," Kaman Sciences Industry Research and Development project, July 1994. (98%)

"Chemometrics," confidential customer, February 24, 1994. (95%)

"Mid- to Long-Term Chemical Weapon Detection Technology Development Study, Part I: State-of-the-Art and Advanced Technologies for Point and Remote Chemical Weapons Agent Sensing," funded by Advanced Research Projects Agency, December 13, 1993. (20%)

"Mid- to Long-Term Chemical Weapons Detection Technology Development Study; Part II: Research Priorities (U)," SECRET report, funded by the Advanced Research Projects Agency, December 13, 1993. (30%)

"Guidelines and Procedures for the Timely and Efficient Investigation of Reports of the Possible Use of Chemical and Bacteriological (Biological) and Toxin Weapons," principal author (75%) with COL Pierre Canonne and others, in "Report of the Secretary General, United Nations General Assembly," A/44/561, 4 October 1989.

#### **ILLUSTRATIVE INVITED LECTURES AND OTHER PRESENTATIONS**

"Stopping Bio Threats at the Border," presented at the Third National Conference on Environmental Sampling and Detection for Bio-Threat Agents, Las Vegas, NV; December 4, 2008. JE Morris, DS Wunschel, AL Bunn, TM Straub, and EW Morgan co-authors.

"Daubert as a Threat to National Security; the Complexity of Chemical and Biological Forensics," invited speaker, FBI field analysts, Washington, DC; September 26, 2007.

"Science and Security: Detecting and Characterizing Risks," invited speaker at ASTAR Judicial Conference, Seattle, Washington; June 16, 2007.

"What Drives the News? The Roles of Government and of Societies," invited panelist at Council of Engineering & Scientific Societies (CESSE) Annual Meeting, Portland, Oregon; July 15, 2005.

"How to Work with the National Laboratory Network," invited panelist at the Federal Bio-Chem Detection R&D Conference, Tysons Corner, Virginia; June 2005.

"Stopping the Bio Bad Guys: Biological Forensics and Detection," Symposium chair and coordinator, AAAS Annual Meeting, Washington DC; February 19, 2005.

"News and Terrorism: Communicating in a Crisis," invited panelist at the interactive workshop produced by the Radio and Television News Directors Foundation in association with the National Academies and the U.S. Department of Homeland Security, Portland, Oregon; October 2004.



“What Role Should Scientists Play in Government and the Political Process?” Invited panelist at the Marcel Faber Roundtable of the Society for Industrial Microbiology Annual Meeting and Exposition, Anaheim, California; July 2004.

"New Strategies of Engagement for Ethical Scientific Leadership," Second Pugwash Workshop on Science, Ethics and Society.

“Science in the New World Order/Disorder,” Invited panelist, National Association of Science Writers Annual Meeting, Seattle, Washington; February 2004.

“Terror Tech: Civilian,” History Channel series, Modern Marvels, aired September 8, 2003.

“Biotechnology and Bioterrorism,” Session co-chair at BIO2003, Washington DC; June 2003.

“Challenges in matching sensors to biological threats,” Invited speaker at the Annual Meeting of the American Chemical Society, New Orleans, Louisiana; March 2003.

“Advanced Technologies for Mail Safety: Sterilization and Scanning,” invited presentation at the American Nuclear Society 2001 Winter Meeting, President’s Special Session, Reno, Nevada; November 2001.

“Finding Bioterrorists Without Bodies: Evaluating the Credibility of Bioterrorist Threats,” invited presentation at the International Coroners and Medical Examiners Conference, Seattle, Washington; June 2002.

“Water-Borne Pathogen Detection,” invited presentation at the U.S. EPA Environmental Technology Verification Program Advanced Monitoring Systems Center Water Stakeholder Committee Meeting, Coeur d’Alene, Idaho; October 2001.

“Chemical and Biological Weapons Threat and the Hanford Site,” invited presentation at the Inland Empire Chapter of the American Society for Industrial Security; September 2000.

“Emerging Threats Assessment: Biological Terrorism,” invited conferee at the Threats Assessments Conference Summary; A Technology-Based Threat Assessment Workshop, convened at the Dartmouth Institute for Security Technology Studies, Hanover, New Hampshire; July 2000.

“From Scientists to Superheroes,” guest lecturer at the Community Science and Technology Seminar Series sponsored by Columbia Basin College and the Pacific Northwest National Laboratory; April 2000.

”Identification and Characterization of Pathogens in the Environment,” invited faculty member, Public Health Response to Bioterrorism, sponsored by the National Laboratory Training Network, Oakland and City of Industry, California; January 1999.

“Multifunctional Integrated Mesoscale Pathogen Detection Systems,” invited presentation at the

Food Safety Diagnostics Conference sponsored by International Business Communications, St. Louis, Missouri; April 1998.

“Integrated Pathogen Detection on a Mesoscale Platform,” presented at MASINT Biological Defense Science and Technology Symposium; January 1998.

“Technology Partnerships for Emergency Management: Unconventional Threats,” Panel Moderator at the workshop sponsored by the Federal Emergency Management Agency hosted by the Pacific Northwest National Laboratory, Richland, Washington, September 1997.

“Chemical and Biological Weapons Threat and Mitigation Capability,” invited presentation for the seminar on Contemporary Security Issues,” sponsored by the Research Security Administrators, Sunnyvale California; April 1997.

“Technology Applications for Emergency Management: Training and Education,” invited presentation at the workshop sponsored by the Federal Emergency Management Agency and hosted by the Mount Weather Emergency Assistance Center, West Virginia; November 1996.

“Biological Weapons: Threat and Response,” with Matt Freund, presented at the American Society for Industrial Security; September 1996.

“Verification and Compliance History,” seminar co-organizer and lecturer at the Seminar Course, “Biological Weapons; Nexus of Policy and Technology,” conducted by Kaman Sciences Corporation, Alexandria, Virginia; June 1994.

“Tools and Technologies for Controlling Arms,” panel chair at the Third Annual International Conference on Controlling Arms sponsored by the Defense Nuclear Agency, Virginia Beach, Virginia; May 1994.

“CWC: The Costs of Confidence,” invited presentation at the Fourth Annual Arms Control & Verification Conference, hosted by the John G. Tower Center for Political Studies, Dallas Texas; October 1993.

“Technologies that Support the Controlling of Arms,” Invited Plenary Panelist at International Conference on Controlling Arms, hosted by Defense Nuclear Agency, Richmond, Virginia; June 1993.

Conference Chair, “Chemical Weapons Convention Verification Technology Research and Development” Herndon, Virginia; March 1993.

Presentation on behalf of Ambassador Ron Lehman, Director of the Arms Control and Disarmament Agency, at the Central Florida Community College Tiger Bay Club, January 1993.

"Perspectives on Chemical Weapons Arms Control Policies," invited presentation at the Conference on Technology Research and Development for Arms Control Verification, Los Alamos National

Laboratory, August 1989. Published in *Verification Technologies Review*, 2(2), March/April 1990.

"United States Policy on Chemical Weapons Arms Control Verification," invited speaker at the Conference on Technology Research and Development for Arms Control Verification, sponsored by the Department of Energy at Los Alamos National Laboratory, Los Alamos New Mexico; August 1989.

"American Policies" and "U.S. Institutional and Political Aspects," invited panelist at the Conference on the Control of Chemical and Biological Weapons: Strengthening International Verification and Compliance," sponsored by the Canadian Institute for International Peace and Security, Toronto, Canada; April 1989,

"Is There a Gap between Advances in Technology and the Ability to Verify?" Barbara A. B. Seiders, presented by Ambassador Lynn M. Hanson at the United Nations Meeting of Experts on Verification of Arms Limitation Agreements, Dagomys, USSR, 11-15 April 1988 and published in the proceedings.

"An Assessment of US/Soviet Biological and Chemical Capabilities in Europe," panel moderator, introduction published in "1987 Colloquium Proceedings; Nuclear and Conventional Forces in Europe; Implications for Arms Control," W. Thomas Wander and Kenneth N. Luongo, eds., AAAS, 1988.

"On-Site Monitoring of Production, Deployment and Destruction: Chemical Weapons," invited speaker, joint meeting of the Federation of American Scientists and the Soviet Scientists for Peace and Against the Nuclear Threat to plan a "Joint Scientific Study of the Feasibility of Implementing and Maintaining Disarmament," Warrenton, Virginia; April 1987.

"Technology for the Soldier: Visualizing Penetrants," Barbara A. B. Seiders, John J. Holter, Joseph M. Leonard, and Tom Luteran, presented at the 1986 Army Science Conference, West Point, NY and published in the proceedings.

"Quantum Chemistry" Session Chair and Moderator, 1985 Scientific Conference on Chemical Defense Research sponsored by the Chemical Research and Development Center, Aberdeen Proving Ground Maryland; 1985.