

## Appendix: Participant Biographies

**Corrie Brown** has worked at the University of Georgia College of Veterinary Medicine as professor and head of the department of veterinary pathology since 1996. She received her DVM from Ontario Veterinary College at the University of Guelph. After practicing for a short period in western New York, she did a combined residency/PhD in comparative pathology at the University of California at Davis. Board certification (ACVP) and PhD were both attained in 1986. She was an assistant professor of pathology at Louisiana State University briefly before joining the US Department of Agriculture at Plum Island, where, as head of the pathology section, she specialized in the diagnosis and pathogenesis of foreign animal diseases. Her professional interests are in infectious diseases of food-producing animals, emerging diseases, agroterrorism and international veterinary medicine. She has over 250 scientific publications and presentations. She currently serves as coordinator of international veterinary medicine for the College of Veterinary Medicine.

**Nancy Connell** earned her PhD in bacterial genetics from Harvard Medical School, where she studied gene expression during the stationary phase of growth in *Escherichia coli*. She then held a postdoctoral position at Albert Einstein College of Medicine where she developed live recombinant vaccines. In 1992 Dr. Connell joined the Department of Microbiology and Molecular Genetics in the medical school at the University of Medicine and Dentistry of New Jersey. Using genetic and cell biological approaches, her laboratory focuses on intracellular metabolism of *Mycobacterium tuberculosis*, a bacterium that infects and replicates in macrophages. She has a joint appointment in the department of medicine and is the director of molecular mycobacteriology at the New Jersey Medical School National Tuberculosis Center. In addition to mycobacterial metabolism, her laboratory has been examining the molecular basis of resistance in multidrug-resistant clinical strains of *M. tuberculosis*. Finally, Dr. Connell has been working for many years in the area of the control of proliferation of biological weapons.

**David R. Franz** has been the vice president of the Chemical and Biological Defense Division of Southern Research Institute since 1998. He retired from the US Army at the rank of colonel, having served as commander of the US Army Medical Research Institute of Infectious Diseases. During over twenty years on active duty, Franz was a group veterinarian for the 10th Special Forces Group before going on to assignments at four of the Medical Research and Development Command's laboratories. Armed with a DVM from Kansas State University and a PhD in physiology from Baylor College of Medicine, Franz conducted research and published in the areas of frostbite pathogenesis, organophosphate chemical warfare agent effects on pulmonary and upper airways function, the role of cell-mediated small vessel dysfunction in cerebral malaria, and most recently, medical countermeasures to the biological toxins. Franz was the chief inspector on two United Nations Special Commission on Iraq biological warfare inspection missions to Iraq and was technical advisor on long-term monitoring. He was also a member of the first two US/British teams to visit Russia in support of the Trilateral Joint Statement on Biological Weapons.

**Jerry Goldstein** is a professor of microbiology and chairman of the Botany/Microbiology Department at Ohio Wesleyan University. Dr. Goldstein earned a PhD in microbiology from the University of Wisconsin-Milwaukee where he began research on the effectiveness of antiviral drugs on polio, vaccinia, herpes and adenovirus-infected cells. Currently his laboratory is involved with cloning, sequencing, and expressing a variety of bacterial protease genes in various expression vectors.

**Robert Hamilton** is a senior scientist and group leader at a large biotechnology company that has sales approaching \$2 billion annually. A PhD microbiologist with more than seventeen years of experience in industrial biotechnology including yeast, *E. coli*, and mammalian cell culture process development and manufacturing process improvement. Among his proficiencies are troubleshooting at large scale, project management, directing research and development laboratories, Good Manufacturing Process regulations, regulatory filings for chemistry, manufacturing, and control sections at the IND and NDA (BLA) stages as well as validation and regulatory aspects involved in process change implementation. Prior to joining industry, Hamilton spent five years as a postdoctoral research fellow at the Department of Biological Chemistry at the Pennsylvania State University College of Medicine. He holds a US patent and has had a dozen articles published in key peer-reviewed journals.

**Jennie Hunter-Cevera** is president of the University of Maryland Biotechnology Institute. Hunter-Cevera received her doctoral degree in microbiology from Rutgers University in New Jersey in 1978. Dr. Hunter-Cevera began her career at E.R. Squibb in Princeton, NJ as a researcher and later moved to Cetus Corporation. In 1990, she started a consulting company specializing in biotechnology, agricultural and industrial microbiology, bioremediation and pharmaceuticals. Hunter-Cevera then went on to direct the Department of Environmental Biology and Biochemistry for the Lawrence Berkeley National Laboratory, which is operated by the University of California as part of the Department of Energy's national laboratory system. There she started the Center for Environmental Biotechnology where she remained until becoming president of the University of Maryland Biotechnology Institute in 1999. Hunter-Cevera is also a principal investigator of two cooperative programs sponsored by the Department of Energy with Ukrainian institutes to screen rare botanical and microbial extracts throughout the former Soviet Union. She has also worked on *Bacillus anthracis* biomarkers, specifically *saspB* which is now a classified assay.

**Karen Jansen** (Lt.Col., ret.) served as a US Army Chemical Corps officer from 1978 in a variety of command and staff positions that included assignments in Germany, Saudi Arabia, and South Korea. With a background in microbiology and immunology, she made contributions to US chemical and biological weapons defenses. From 1991 to 1992, Jansen was a chemical and biological weapons inspection operations officer for the United Nations Special Commission on Iraq (1991-1992), having participated in six and led four inspection missions. She was subsequently posted as a chemical inspection team chief to the US On-Site Inspection Agency. Jansen has an MS in microbiology from North Carolina State University.

**Barry Kreiswirth** has more than twenty years of microbiology research experience. For nearly ten years, Kreiswirth has directed the Tuberculosis Center at the Public Health Research Institute (PHRI) in New York City. With the burgeoning tuberculosis epidemic in Russia, the program's most recent work has focused on efforts to develop demonstration tuberculosis control projects that could form a model for replication throughout Russia. Prior to his current role, Kreiswirth headed the New York City Department of Health Phage Typing and Antibiotic Susceptibility Testing Laboratory. He had previously spent four years as a research scientist and postdoctoral fellow at PHRI. A PhD in microbiology, he has had dozens of articles published in such journals as *Emerging Infectious Diseases*, *Journal of the American Medical Association*, *Clinical Microbiology*, and *Journal of Infectious Diseases*, and is a member of the American Association for the Advancement of Science, American Society for Microbiology, and the New York Academy of Sciences.

**Allen I. Laskin** is president of Laskin/Lawrence Associates and serves as an independent consultant in microbiology and biotechnology. For fourteen years, Laskin was assistant director of microbiology at the Squibb Institute for Medical Research. He subsequently spent fifteen years as head of biosciences research at Exxon Research and Engineering Company. Later, he was instrumental in developing the New Jersey Center for Advanced Biotechnology and Medicine and became its first associate director. He then spent three years as president of Matrix Laboratories, a small start-up biotechnology company, before starting his current consulting activities. Laskin, who holds a PhD in microbiology, has received several awards and honors. He is a fellow of the American Academy of Microbiology, the American Association for the Advancement of Sciences, the Society for Industrial Microbiology, and the New York Academy of Sciences. He has authored numerous scientific papers and US patents, is the editor or co-editor of many books and book series, and is a senior editor of the *Journal of Industrial Microbiology and Biotechnology*.

**Theodore Myatt** is a doctoral candidate at the Harvard School of Public Health in the where he is studying the airborne transmission of common cold pathogens and their relation to building management. Mr. Myatt earned his master's degree in environmental management from Duke University and interned at the Centers for Disease Control and Prevention in Atlanta. Subsequently, he was a biological safety officer at UCLA's Office of Environment, Health, and Safety. In addition, Mr. Myatt now serves in the Division of Epidemiology and Immunization at the Massachusetts Department of Public Health.

**George Pierce** became a professor of applied and environmental microbiology at Georgia State University in late 2000. Prior to his transition to academia, Pierce worked for nearly ten years at Cytec Industries, formerly American Cynamid, where his last position was manager of technology development and engineering. He has also held senior research posts with Battelle Memorial Institute and at Celgene Corp., where he was the director of research and development. His research interests include development and scale-up of microbial processes for pollution prevention, site remediation and restoration at Superfund and Resource Conservation and Recovery Act sites, scale-up and development of

commercial biotechnology products, development of enzyme based and fermentation based products, and regulatory affairs and compliance in the area of environmental and industrial microbiology. A PhD in microbiology, Pierce has also been an adjunct profession at Ohio State University and at the Rensselaer Polytechnic Institute. He has numerous publications and patents in biotechnology and has served in several professional organizations, including a stint as the director of the Society for Industrial Microbiology.

**Steven J. Projan** is the director of antibacterial research at Wyeth-Ayerst Research, which is the research and development division of American Home Products Corporation. He has a PhD in molecular genetics and over twenty years of experience in research and industry, having begun his career as a postdoctoral fellow at the Public Health Research Institute in New York City, where he studied plasmid replication and virulence in *Staphylococcus aureus*. After becoming an associate at the Public Health Research Institute, Projan continued his work on plasmid replication, antibiotic resistance and staphylococcal virulence through 1994. In 1987 Projan became a senior scientist and then group leader at Applied Microbiology, Inc.—then an in-house biotechnology company at the Public Health Research Institute—working on antimicrobial peptides and bacteriocins. In 1993, Projan moved to Lederle Laboratories, which Wyeth-Ayerst Research absorbed, as a group leader in anti-infectives research. Four years later, Projan became an associate director in bacterial genetics and subsequently moved to his current position. The author of over fifty papers and book chapters, Dr. Projan is a past chair of the Gordon Research Conference on Staphylococcal Diseases, a member of the Bacteriology and Mycology I National Institutes of Health Study Section, and serves on four editorial boards.

**Robert Shope** is a professor of pathology in the Center for Tropical Diseases at the University of Texas Medical Branch at Galveston. He graduated with a BA in zoology and went on to earn an MD from Cornell University Medical College. Before joining the University of Texas he was a professor of epidemiology and head of the Division of Infectious Disease Epidemiology at Yale University's Department of Epidemiology and Public Health. Dr. Shope's research activities are mainly in the epidemiology of arboviruses and rodent-associated viruses, anti-viral compounds, vaccines and emerging infectious diseases. His career also includes a stint as a Captain in the US Army Medical Research Corps during which he was stationed at the US Army Medical Research Institute for Infectious Diseases. Dr. Shope is a member of numerous committees and programs including the International Committee on Taxonomy of Viruses, the Defense Department's Biomedical Technology Area Review and Assessment, and the Institute of Medicine's Committee on Research and Development Needs for Improving Civilian Medical Response to Chemical and Biological Terrorism Incidents.

**Amy E. Smithson** has been a senior associate at the Henry L. Stimson Center since 1990. In January 1993, she initiated the Chemical and Biological Weapons Nonproliferation Project, which conducts analytical research across the spectrum of complex topics associated with the control and elimination of chemical and biological weapons. She has published widely in journals, testified before Congress, and is

frequently consulted by the media. Before her tenure at the Stimson Center, she worked at Pacific-Sierra Research Corporation and the Center for Naval Analyses. She holds a PhD in political science from George Washington University.

**Anne Vidaver** is head of the Department of Plant Pathology at the University of Nebraska-Lincoln. She received her PhD in bacteriology with a minor in plant physiology from Indiana University in Bloomington. Vidaver has more than thirty-five years of teaching experience, as well as research in phytopathogenic bacteria and bacteria associated with plants. Her work has included systematics, epidemiology and control, plasmid, bacteriophage and bacteriocin characterization and genetics. She has served as an advisor or consultant to several companies and federal agencies. She has authored or co-authored over 180 scientific articles and a book. In collaboration with colleagues, she also holds two patents.

**Robert Zagursky** is a distinguished research scientist for research and development at Wyeth-Lederle Vaccines, a business unit of Wyeth-Ayerst Research, which is a division of American Home Products Corporation. Zagursky has eighteen years of experience in industry: seven years in research and development of bacterial vaccines at Wyeth-Lederle Vaccines; three years in research and development of eukaryotic expression and HIV research at DuPont Merck Pharmaceutical Company; and nine years in corporate research and development studying fluorescent DNA detection and PseudoRabies viral recombination at E.I. DuPont de Nemours & Co. Zagursky, who holds a PhD in biological science, also has two years postdoctoral experience in bacterial research at the US Army Medical Research Institute for Infectious Diseases. He is a recent recipient of American Home Products' Exceptional Achievement Award and Team of the Year Award, a member of the American Society for Microbiology, and a member of the editorial board for *BioTechniques*.

**Academic Expert 1** is a PhD microbiologist and a virology professor in a major US university's microbiology and immunology department. This expert's research has focused on the molecular genetics of alphavirus pathogenesis, the design of molecularly cloned vaccines, and the development of alphaviruses as in vivo and in vitro expression systems. This individual is also a founding scientist of a commercial enterprise for applications of an innovative vaccine delivery technology.

**Academic Expert 2** is a pathology professor at a top-ten US medical school. The director of a tissue typing laboratory, this physician's research is in the area of autoimmune endocrine disease, having helped define the basis of the autoimmune response to thyroid autoantigens. In particular, this person's recent work has focused on epitope mapping of thyroid peroxidase, a major autoantigen in autoimmune thyroid disease. His laboratory has used molecular biologic techniques to identify the specific epitopes recognized in thyroid peroxidase and shown that the recognition of this autoantigen is heterogeneous in different individuals. This expert, who has published numerous articles, has also served on the editorial boards and as a review for several professional journals.

**Defense Contractor 1** is a staff scientist in the biotechnology sector of a large contract research organization that handles both governmental and private clients. This individual holds an MA in cellular and molecular biology and concentrates on method development and validation in molecular biology.

**Defense Contractor 2** is a principal research scientist at a medical research facility that works primarily under government contracts and is part of a large global technology development company. A PhD microbiologist and veterinarian, this individual is an anatomic pathologist with in-depth experience in veterinary medicine and research.

**Defense Contractor 3** is a senior technical adviser at a large a nonprofit organization focusing on basic and applied research, product development and policy studies in a range of fields of science. A PhD in physics, this individual has over thirty-five years of instrumentation development experience, over twenty years of direct experience working on several government and industry committees concerning weapons of mass destruction.

**Defense Contractor 4** is president of a company that provides consultant, technical, and materials evaluation support to government agencies and commercial clients. This individual received a PhD in chemical engineering but is also trained in physics and previously worked for almost a decade in the aerospace industry.

**Defense Contractor 5** is the director of microbiology and special government projects for a small defense contracting research firm. The recipient of a PhD in microbiology and an MS in human genetics, this individual is a board-certified medical technologist who has co-authored numerous peer-reviewed journal articles. Previously, this person served in the US Air Force as chief of molecular biology in a clinical investigation facility.

**Defense Contractor 6** is senior vice president, director, and co-founder of a biotechnology research contracting firm. Previously, this individual managed a research laboratory in a cancer center in the microbiology, biology, and immunology department of a university. With over fifteen years in molecular genetics, this individual is the co-inventor of US patents and co-author of over peer-reviewed journal articles and book chapters.

**Industry Expert 1** is the associate director for fermentation development at a US vaccine company that specializes in the development and manufacture of bacterial and viral vaccines and is a division of a Fortune 100 pharmaceutical firm. He holds a PhD in microbiology and has thirteen years experience in process development and scale up for the production of new and licensed vaccines for infants and adults. He also has extensive background working with biosafety level 2 and 3 microorganisms and designing facilities for large scale biosafety level 2 and 3 operation.

**Industry Expert 2** is a senior vice president at a US biopharmaceutical company overseeing operations, product development and manufacturing. Prior to joining this firm, this expert served as vice president of manufacturing operations and process development at a US vaccine manufacturer, where he was responsible for all phases of vaccine manufacturing, including bulk manufacturing, filling, and packaging. Previously, this expert, who holds a PhD in biology, was the senior director for biological manufacturing at a US pharmaceutical company with roughly \$40 billion in annual sales. In this capacity, he was responsible for manufacturing licensed bulk biologicals, including several vaccines. Earlier, this individual served as the director of the department of gene expression sciences and as the associate director of the biological process sciences department in one of the largest drug companies globally. This expert was previously the president of the Society for Industrial Microbiology and is a member of other professional organizations.

**Industry Expert 3** is a senior research scientist at a small US biotechnology company that is a subsidiary of a larger firm that specializes in the discovery, analysis, and manufacture of proteins to be used in new applications. After receiving a PhD in biochemistry, this individual began a career in industry and research that has stretched over twenty-five years. This expert has worked in several research positions at a large US chemical corporation with well over a billion dollars in annual sales where his research concentrated in the field of polymers for biomedical applications. Prior to joining industry, he held research positions in two different research institutes of the National Institutes of Health. His bibliography contains more than eighty published pieces, he holds over ten patents, and he is a member of several professional associations.

**Industry Expert 4** is president and chief executive officer of a small US biotechnology company focusing on novel therapeutics for the pharmaceutical and dietary supplement industry. The firm is a wholly-owned subsidiary of a privately held international company that sells cosmetics and supplements overseas. This individual holds a PhD in microbiology.