

Contributors

Dr. Bruce W. Bennett is the research leader for strategy, force planning, and counterproliferation within RAND's International Security and Defense Policy Center. His work focuses on the future of warfare and military analysis, especially in light of new technologies, operational concepts, and threats. He is examining the operational and strategic implications of possible chemical, biological, and nuclear threats that could be posed in Korea and the Persian Gulf, and the character of the U.S. strategy required in response, with a focus on deterrence. He facilitated the Coral Breeze seminars on CBW for CINC Combined Forces Command (Korea), the Desert Breeze seminars on CBW for USCENTCOM, and parts of USCENTCOM's Eagle Resolve exercises with the Gulf States. He has worked on defenses against chemical and biological weapons in the CASPOD ACTD (Contamination Avoidance at Sea Ports of Debarkation), the RestOps ACTD (Restoration of Operations at airfields after CBW attack), and the subsequent USPACOM Counter-BW research effort. He has also worked on deterrence-based strategy, future force planning procedures, peacetime force requirements, and future threats and the military forces required to counter them.

Dr. Bennett received a Ph.D. in policy analysis from the RAND Graduate School and a B.S. in economics from the California Institute of Technology. He has served as an Adjunct Professor at the U.S. National War College, as an Adjunct Lecturer in the School of Public Health at the University of California at Los Angeles, and is a Professor of Policy Analysis in the RAND Graduate School.

Dr. Stephen F. Burgess is Deputy Chair of the Department of Strategy and International Security, Assistant Professor of International Security, Air War College, and an Associate of the USAF Counterproliferation Center (CPC). Previously, he was a faculty member at the University of Zambia, Vanderbilt University, and Hofstra University. Dr. Burgess completed his Ph.D. at Michigan State University, was a Fulbright-Hays fellow, and a Research Associate at the University of Zimbabwe. His two books are *Smallholders and Political Voice Zimbabwe*, University Press of America, 1997, and *The United Nations Under Boutros Boutros-Ghali, 1992-97*, Scarecrow Press, 2002. Dr. Burgess and Dr. Helen Purkitt collaborated on a monograph, *The Rollback of the South African Chemical*

and Biological Warfare Program for the CPC and the Institute of National Security Studies (INSS), U.S. Air Force Academy. They are writing a book, *South Africa and Weapons of Mass Destruction*, which will be published by Indiana University Press in 2004. Recently, Dr. Burgess completed research on “Arms Control and Missile Defense in South Asia” and “India’s Emerging Security Strategy and Defense Capabilities” for CPC and INSS.

Lieutenant Colonel Harry W. Conley is Chief of the Force Analysis Branch at Headquarters Air Combat Command (ACC), Langley Air Force Base, Virginia. He is responsible to the ACC commander for analytic studies that evaluate the effectiveness and efficiency of current and future Combat Air Force weapon systems. He is currently investigating the effectiveness of Air Force precision-guided weapons used in Operation Iraqi Freedom. Lt Col Conley is a graduate of the U.S Air Force’s Air War College, and holds a M.S. in Operations Research from the Georgia Institute of Technology, and a B.S. from the U.S. Air Force Academy. He won second place in the 2001 Chairman of the Joint Chiefs of Staff Strategy Essay contest for his paper entitled “Not With Impunity: Assessing U.S. Policy for Retaliating to a Chemical or Biological Attack.” His publications include: “Air Force 2025 Operational Analysis,” in *Military Operations Research*, Vol. 3, No. 4, 1997, and “Foundations 2025: A Value Model for Evaluating Future Air and Space Forces,” in *Management Science*, Vol. 44, No. 10, October, 1998.

Colonel Jim A. Davis is the Deputy Director of the USAF Counterproliferation Center. Previously, Colonel Davis was the Deputy Chair to the Department of Future Conflict Studies at Air War College and the AF Surgeon General's Chair to Air University. He also served as the Commander, 48th Aerospace Medicine Squadron at RAF Lakenheath, UK where he was responsible for the largest Aerospace Medicine Squadron in USAFE, which oversees flight medicine, optometry, preventive medicine, health promotion, public health, industrial hygiene, and bioenvironmental engineering. He provided support to USAFE fighters, European Tanker Task Force, and MOOTW in Europe, Africa, and the Middle East. He also served as UK Medical Intelligence Officer and USAFE Consultant for Public Health. Colonel Davis served 4 years in the U.S. Army Veterinary Corps, 6 years in private veterinary medicine, and has been in the Air Force since 1987. His areas of special interest include CBW,

bioterrorism, and occupational epidemiology. Colonel Davis has several academic degrees including a Doctorate of Veterinary Medicine from Texas A&M and a Doctorate of Public Health from the University of Texas. He is board certified with the American College of Veterinary Medicine and through his experience at Plum Island, New York, has become a Foreign Animal Disease Diagnostician.

Lieutenant Colonel Michael E. Dickey is the Deputy Commander, 99th Security Forces Group (ACC), Nellis Air Force Base Nevada. He is responsible for training, arming and equipping the 650+ person security group comprised of two operational security squadrons and one training squadron providing security, antiterrorism and force protection to Nellis AFB and the Air Warfare Center. Colonel Dickey enlisted in the USAF as a security specialist in 1973, and participated in the evacuations of Saigon, RVN, Phnom Phen Cambodia, and recovery of the SS Mayaguez before becoming an instructor at the USAF Security Police Academy. A 1979 distinguished graduate of Officer Training School, he has held a variety of leadership positions, from security shift commander through expeditionary support group commander. He has commanded four security forces squadrons; one training squadron, served as Deputy Commander, 820th Security Forces Group and as Commander, 366th Expeditionary Support Group during Operation ENDURING FREEDOM.

Charles C. Engel, Jr., MD, MPH, Lieutenant Colonel, Medical Corps, U.S. Army, is an Associate Professor & Assistant Chair (Research) of the Department of Psychiatry at the Uniformed Services University and the Director of the Department of Defense (DoD) Deployment Health Clinical Center at Walter Reed Army Medical Center. He is a psychiatrist-epidemiologist and an expert on population-based health care and clinical aspects of environmental risk communication for people with idiopathic symptom syndromes after war, terrorism, and disasters. Dr. Engel is a respected researcher who has coauthored over 60 scholarly articles including articles in JAMA, American Journal of Psychiatry, and Controlled Clinical Trials. He has served as co-PI on four nation-wide multicenter clinical trials testing the impact of various health care improvements for military and VA health care beneficiaries. The Deployment Health Clinical Center's mission is to improve post-deployment health care, and Dr. Engel is the DOD team leader for three DOD-VA clinical practice guidelines including post-deployment health

evaluation and management, medically unexplained symptoms, and major depressive disorder.

Carol S. Fullerton, Ph.D., is a Research Associate Professor and the Science Director, Center for the Study of Traumatic Stress, Department of Psychiatry, USUHS. Dr. Fullerton did her undergraduate work in Psychology at Alfred University, NY and her graduate training at the Institute for Child Study, University of Maryland. Dr. Fullerton was the Research Psychologist for the Adolescent & Child Division at Chestnut Lodge Hospital, Rockville, MD from its inception (1974) until 1986. She helped establish the research program and served as coordinator of research for the Adolescent and Child Division, Chestnut Lodge. Dr. Fullerton joined the faculty of the Department of Psychiatry at USUHS as a Postdoctoral Fellow in 1986.

Dr. Fullerton has published in the areas of posttraumatic stress response, the role of social support following trauma, and the stress on spouses of disaster workers. She has examined adolescents and families in long-term psychodynamic psychotherapy. She serves as consultant to disasters and is currently examining the acute and long-term responses to disaster and trauma. Her funding sources include: National Institute of Mental Health, the U.S. Army, the U.S. Air Force and USUHS. Dr. Fullerton was the recipient of the Meritorious Service Medal in 1990 for her consultation and research to the Sioux City, Iowa plane crash of 1989 and the recipient of the USUHS Exceptional Service Award. She is a Fellow of the American Orthopsychiatric Association, and a member and journal reviewer for the American Psychological Association and the International Society for Traumatic Stress Studies. Her research focuses on the role of social support in responses to trauma.

Harry C. Holloway, M.D. a 1958 graduate of the University of Oklahoma School of Medicine, spent 30 years in the U.S. Army Medical Corps. During this time, he was Chief of Neuropsychiatry at SEATO Medical Research Laboratory in Bangkok, Thailand; Director of Neuropsychiatry at Walter Reed Army Institute of Research; and Chairman of the Department of Psychiatry at Uniformed Services University of the Health Sciences (USUHS). He remained Psychiatry Chairman until 1990 when he became Deputy Dean and Acting Dean of the School of Medicine at USUHS. From August of 1992 until March of 1993 he served as Deputy Dean. Dr. Holloway was awarded the honorary

degree of Doctor of Military Medicine by USUHS in 1992. He has received the Legion of Merit and Defense Superior Service Medal.

Dr. Holloway has served as Chairman of the National Aeronautics and Space Administration (NASA) Aerospace Medicine Advisory Committee. Dr. Holloway served as the first Associate Administrator for the Office of Life and Microgravity Sciences and Applications at NASA from 1993 to 1996 and as Co-Director of the NASA Enterprise for the Human Exploration and Development of Space (HEDS). During his tenure, his office supported the integration of thirteen shuttle missions (including the first missions to Mir) and the development of the science facilities for the International Space Station. He has received three decorations from NASA: the NASA Medals for Leadership, Distinguished Public Service, and Distinguished Service.

Dr. Holloway is presently at the F. Edward Hébert School of Medicine where he serves as Professor of Psychiatry and Professor of Neuroscience and Assistant Chairman for Research in the Department of Psychiatry. He currently serves on the Gulf War Illness Advisory Committee of the Veterans Administration. Dr. Holloway is the author of over forty publications. He is Life Fellow of the American Psychiatric Association (APA) and has received the APA's Distinguished Psychiatrist Award.

Arnold Kaufmann, D.V.M., M.S., D.A.C.V.P., CAPT, USPHS (Ret), is currently a Senior Service Fellow with the Division of Emergency and Environmental Health Services, National Center for Environmental Health, Centers for Disease Control and Prevention (CDC), Atlanta, GA. Dr. Kaufmann is an infectious disease epidemiologist who has been associated with the CDC since 1963. His career has focused on the study of the epidemiology, pathology, clinical presentation, treatment and prevention of zoonotic diseases such as anthrax, brucellosis, tularemia, and plague in man and animals. These studies have been reported in more than 100 scientific and medical journal articles. Since 1995, Dr. Kaufmann has been involved in preparedness issues related to terrorism, such as the development of casualty projection models and training exercises. He was part of the team that documented the attempted use of *Bacillus anthracis* as a biological weapon by the Aum Shinrikyo.

Dr. Martin I. Meltzer is the Senior Health Economist, Office of Surveillance, Office of the Director, National Center for Infectious Diseases, Centers for Disease Control and Prevention (CDC) in Atlanta, GA.

He received a BSc Agric (Hons) from the University of Zimbabwe in 1982, and Masters and a Doctorate in Applied Economics from Cornell University, NY, in 1987 and 1990, respectively. His research interests include examining the cost-benefit and cost-effectiveness of various health interventions, and developing strategic plans and formulating policy guidelines and recommendations for the use of health technologies, such as vaccines. Much of his work is multi-disciplinary in nature and his research emphasizes “interfacing” between the biological and the social sciences. Examples of his more recent research include the modeling of potential responses to smallpox as a bioterrorist weapon, examining the economics of vaccinating restaurant foodhandlers against hepatitis A, evaluating the cost-effectiveness of Lyme disease vaccination, assessing the economic impact of pandemic influenza, modeling the economics of controlling raccoon rabies using an oral vaccine, assessing the global economic impact of dengue, and evaluating the economics of a planning and preparing for a bioterrorist attack.

Dr. Meltzer has published more than 100 publications, including approximately 60 articles in peer-reviewed journals, two U.S. patents and seven book chapters. He also led two teams, each of which produced software to help state and local public health officials plan and prepare for catastrophic infectious disease events. One program, FluAid, helps estimate the potential impact of the next influenza pandemic, and another, MaxiVac, helps officials plan a large-scale smallpox vaccination clinic. Among the honors accorded to him, Dr. Meltzer has been nominated four times for CDC’s Charles C. Shepard award, winning it in 2001, and has been awarded the James H. Nakano citation four times. He is an associate editor for *Emerging Infectious Diseases*, and has been a guest editor and a member of the editorial board for *Agriculture and Human Values*. For *The Lancet*, he helps co-ordinate reviews of manuscripts on health economics and has refereed manuscripts for 15 different journals. He also supervises a number of post-doctoral health economists at CDC.

Ann E. Norwood, LTC(P), MC, USA, received her A.B. (1976) in Psychobiology from Vassar College, and M.D. (1981) from the Uniformed Services University of the Health Sciences. She completed her residency in Psychiatry (1985) at Letterman Army Medical Center, San Francisco. She was the Chief of Psychiatry at Darnall Army Community Hospital, Ft. Hood, TX before coming to the University in 1988. Dr. Norwood currently serves as Associate Professor of Clinical Psychiatry and

Associate Chairman for the Department of Psychiatry. Her excellence in teaching has been recognized through the Nancy C.A. Roeske Award for Outstanding Medical Student Education given by the American Psychiatric Association. She is also the recipient of the William C. Porter Award given by the Association of the Military Surgeons of the United States for outstanding contributions to military psychiatry. Dr. Norwood's major research interest is in the area of psychiatric responses to trauma and disaster with a special focus on stressors affecting women in the military. An extension of traumatic stress, family violence, is also an active area of research.

Dr. Helen E. Purkitt obtained her Ph.D. in International Relations from the University of Southern California. She is a Professor of Political Science at the U.S. Naval Academy. Her research and teaching interests include African politics, environmental politics, international relations theory, and political decision-making. Past INSS/NARC sponsored research includes developing a system to monitor environmental threats in African regions (1997) and "The Politics of Denuclearization: The Case of South Africa" (1995). She is currently completing an on-line introductory Political Psychology textbook and a book-length manuscript on South Africa's past, present, and future defense policies. Recent publications include, "A Problem Centered Approach for Understanding Foreign Policy: Some Examples from U.S. Foreign Policy toward Southern Africa" in S. Nagel (Ed.) *Handbook of Global International Policy* (New York: Marcel Dekker, 2000), Editor, *Annual Editions: World Politics 00/01* (Dushkin/McGraw Hill, 2000); "Bridging Gaps: The Experiences of Two Members of the First Generation of Civilian Women Professors at USNA," in F. D'Amico and L. Weinstein (Eds.) *INSIDE/OUTSIDE: Women & the U.S. Military* (New York University Press, 1998); and, "Problem Representations and Political Expertise: Evidence from 'Think Aloud Protocols of South African Elites,'" in D. Sylvan and J.F. Voss (Eds.), *Problem Representation in International Relations* (Cambridge University Press, 1998).

George Schmid, M.D., M.Sc., CAPT, USPHS (Ret.), is an infectious diseases epidemiologist with the HIV/AIDS Department of the World Health Organization, Geneva, Switzerland. After receiving an M.D. degree from Northwestern University School of Medicine and subsequent training in family medicine, internal medicine, and infectious diseases, he

joined the Centers for Disease Control and Prevention (CDC) in 1979, working initially with bacterial zoonoses, followed by 18 years' experience in the field of sexually transmitted infections. Although maintaining an interest in zoonotic diseases, he is most actively working in the fields of reproductive tract infections, HIV infection, health economics, and evidence-based medicine.

Dr. Barry R. Schneider is the Director of the USAF Counterproliferation Center (CPC) at Maxwell AFB, and is also a Professor of International Relations at the Air War College. Dr. Schneider specializes in WMD counterproliferation and nonproliferation issues. He is the author of *Future War and Counterproliferation: U.S. Military Responses to NBC Proliferation Threats* (Praeger, 1999); Editor, *Middle East Security Issues, In the Shadow of Weapons of Mass Destruction Proliferation* (CPC, 1999); and contributor to and co-editor of *Know Thy Enemy: Profiles of Adversary Leaders and Their Strategic Cultures* (CPC, 2003), *The Gathering Biological Warfare Storm* (CPC, 2002), *Pulling back from the Nuclear Brink: Reducing and Countering Nuclear Threats* (Frank Cass Ltd., 1998), *Battlefield of the Future: 21st Century Warfare Issues* (Air University Press, 1998), *Missiles for the Nineties: ICBMs and Strategic Policy* (Westview, 1984), and *Current Issues in U.S. Defense Policy* (Praeger, 1976). He has served as a Foreign Affairs Officer (GS-14) and Public Affairs Officer (GS-15) at the U.S. Arms Control and Disarmament Agency, as a Congressional staffer on arms control and defense issues, and was a Senior Defense Analyst at The Harris Group and the National Institute for Public Policy. He has taught at the Air War College since 1993. As a faculty member he has taught Air War College core courses of instruction and elective courses such as International Rivals, Homeland Security Issues, International Flashpoints, Counterproliferation Issues, 21st Century Warfare Issues, and CBW Issues for the USAF. He has taught at six other colleges and universities, and has a Ph.D. in Political Science from Columbia University.

Robert J. Ursano, M.D., Col, USAF, MC, FS (Ret.), Professor of Psychiatry and Director, Center for the Study of Traumatic Stress, Uniformed Services University of the Health Sciences Bethesda, MD. Educated at the University of Notre Dame and Yale University School of Medicine, Dr. Ursano did his psychiatric training at Wilford Hall USAF Medical Center and Yale University. He is a retired Colonel in the United

States Air Force. He graduated from the Washington Psychoanalytic Institute and is on the teaching faculty of the Institute. In addition to serving on many advisory mental health committees, he is listed in Who's Who in America and Who's Who in Medicine and Health Care. He was the first Chairman of the American Psychiatric Association's Committee on Psychiatric Dimensions of Disaster. He has been the recipient of many prestigious awards and was an invited participant to the White House Mental Health conference in 1999. He has received the Department of Defense Humanitarian Service Award and the highest award of the International Society for Traumatic Stress Studies, the Lifetime Achievement Award, for outstanding and fundamental contributions to understanding traumatic stress. He also serves on mental health advisory boards of the University of Oklahoma, University of Oslo and Hadassah University dealing with terrorism and bioterrorism.

He has published over 200 articles in the areas of Post-Traumatic Stress Disorder and the psychological effects of terrorism, bioterrorism, traumatic events and disasters and combat. He and his team have completed studies on numerous disasters, disaster rescue workers, motor vehicle accident victims, family violence and Viet Nam, Desert Storm and Gulf War veterans. He was a national consultant for planning clinical care responses and research programs following the September 11th terrorist attacks and a member of the National Academy of Sciences, Institute of Medicine Committee on Psychological Consequences of Terrorism.

The Honorable R. James Woolsey, joined Booz Allen Hamilton in July, 2002, as a Vice President and officer in the firm's Global Assurance practice located in McLean, Virginia. Previously Mr. Woolsey was a partner at the law firm of Shea & Gardner in Washington, D.C., where he practiced for twenty-two years, on four occasions, beginning in 1973; his practice was in the fields of civil litigation and alternative dispute resolution. During the twelve years he has served in the U.S. Government, Mr. Woolsey held Presidential appointments in two Democratic and two Republican administrations. He was Director of Central Intelligence in 1993-95. He also served as: Ambassador to the Negotiation on Conventional Armed Forces in Europe (CFE), Vienna, 1989-1991; Under Secretary of the Navy, 1977-1979; and General Counsel to the U.S. Senate Committee on Armed Services, 1970-73. He was appointed by the President as Delegate at Large to the U.S.-Soviet Strategic Arms Reduction Talks (START) and Nuclear and Space Arms Talks (NST), and

served in that capacity on a part-time basis in Geneva, 1983-1986. As an officer in the U.S. Army he was an adviser on the U.S. Delegation to the Strategic Arms Limitation Talks (SALT I), Helsinki and Vienna, 1969-1970. Mr. Woolsey is currently: the Chairman of the Board of Freedom House, the Chairman of the Advisory Boards of the Clean Fuels Foundation and the New Uses Council, and a Trustee of the Center for Strategic & International Studies. Mr. Woolsey is presently a principal in the Homeland Security Fund of Paladin Capital Group and a member of the Board of Directors of four privately held companies, generally in fields related to infrastructure protection and resilience. Mr. Woolsey is a frequent contributor of articles to major publications, and from time to time gives public speeches and media interviews, on the subjects of foreign affairs, defense, energy, critical infrastructure protection and resilience, and intelligence.