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Education

Ph.D.; Environmental Health (major); Microbiology (minor), University of Minnesota, 1972  
M.S.; Environmental Health, University of Minnesota, 1966  
Bachelor of Civil Engineering, University of Virginia, 1961

Uniformed Service

Captain (Retired), U.S. Public Health Service Commissioned Corps, Active Duty: 1961 to 1989

Professional Experience

President and Founding Partner June 2006 to Present  
Proven Practices, LLC  
Bethesda, Maryland 20817-3431

Director of Laboratory Safety 1989 to April 2006  
Howard Hughes Medical Institute  
Chevy Chase, Maryland 20815-6789

Director, Division of Engineering Services 1987 to 1989  
Office of Research Services, National Institutes of Health

Director, WHO Collaborating Centre for Applied Biosafety Programmes and Research 1983 to 1987

Director, Division of Safety 1979 to 1987  
Office of Research Services, National Institutes of Health

Director, Office of Research Safety 1974 to 1979  
National Cancer Institute, National Institutes of Health

Other Professional Experience

Member, Defense Science Board Task Force on Biosafety and Security Program for Research Involving Biological Select Agents and Toxins, Department of Defense, 2008.

Member, Committee on Prudent Practices, National Research Council of The National Academies, 2008.  
Member, Committee on Assuring the Safety of the Defense Department Mail, National Research Council of The National Academies, 2003.

Member, Recombinant DNA Advisory Committee, National Institutes of Health, 2002 to 2005.

Member, Committee on Research Standards and Practices to Prevent the Destructive Application of Biotechnology, National Research Council, 2002 to 2003.

Member, Committee on the Design, Construction, and Renovation of Laboratory Facilities, National Research Council, 1997 to 2000.

Chair, Committee on Occupational Health and Safety, Institute of Laboratory Animal Resources, National Research Council, 1993 to 1996.

Member, Committee on Prudent Practices for Handling, Storage, and Disposal of Chemicals in Laboratories, National Research Council, 1992 to 1995.

Member, Committee on Hazardous Biological Substances in the Laboratory, National Research Council, 1985 to 1989.

Commissioner, Oaks Landfill Advisory Commission, Montgomery County, Maryland, 1985 to 1988.

Adjunct Professor, Department of Parasitology and Laboratory Practice, University of North Carolina, 1980 to 1987.

Advisor, Special Program on Safety Measures in Microbiology, World Health Organization (WHO), 1978 to 1987.

Member, Industrial Practices Subcommittee of the Federal Interagency Advisory Committee on Recombinant DNA Research, 1980.

#### Professional Society Memberships

American Association for the Advancement of Science

American Biological Safety Association (President 1991)

American Chemical Society

American Industrial Hygiene Association

Commissioned Officers Association

#### Professional Honors and Awards

Arnold G. Wedum Distinguished Achievement Award, American Biological Safety Association, 2004.

Distinguished Service to Safety Award, National Safety Council, 2004.

Fellow, American Chemical Society, Division of Chemical Health and Safety, 2003.

Howard Fawcett Chemical Health and Safety Award, American Chemical Society, 2000.

The Chris Statue, *Safety in the Research Laboratory: Emergency Response*, 43rd Annual Columbus Film and Video Festival, 1995.

Golden Eagle, *Practicing Safe Science*, The Council on International Nontheatrical Events, 1995.

Golden Eagle, *Controlling Your Risks: HIV in the Research Laboratory*, The Council on International Nontheatrical Events, 1994.

Bronze Medal, *Practicing Safe Science*, The New York Festivals, 1993.

Bond Lecturer, 1989, University of Minnesota, School of Public Health.

Distinguished Service Medal, USPHS, DHHS, 1989.

President's Award, 1987, American Biological Safety Association.

Meritorious Service Medal, USPHS, DHHS, 1983.

Wedum Lecturer, 1982, American Biological Safety Association.

Meritorious Service Medal, USPHS, DHEW, 1977.

Commendation Medal, USPHS, DHEW, 1972.

#### Recent Invited Keynote Addresses

23rd Annual College and University Hazardous Waste Conference, 2005.

Massachusetts Society for Medical Research Workshop on Harmonization of IACUCs & IBCs...Finding Common Ground, 2004.

8th National Symposium on Biosafety, Centers for Disease Control and Prevention, 2004.

50th Annual Meeting, Campus Safety, Health, and Environmental Management Association, 2003.  
IBCs in a Changing Research Landscape: A Policy Conference, National Institutes of Health, 2001.

#### Publications

Barkley, W.E. and Mickelson, C.A., Laboratory Safety, *Methods for General and Molecular Bacteriology*, Ed., Reddy, C.A., American Society for Microbiology, Washington, D.C., p. 997, 2007.

*Biosafety in Microbiological and Biomedical Laboratories*, Ed., Wilson, D.E. and Chosewood, L.C., Guest Ed., Barkley, W.E., U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institutes of Health. Washington: US Government Printing Office; Washington: 2007

*Biotechnology Research in an Age of Terrorism*, National Research Council of the National Academies, National Academy Press, Washington, D.C., 2004.

DiBerardinis, L., First, M., Prat, E., Smith, T., Warfield, C.A, Carpenter, P., Cook, L., Walters, D., Flynn, M., Galson, E., Greenley, P., Hitchings, D., Knutson, G., Price, J., Baum, J., Burton, J., Finucane, M., Ghidoni, D., Konigsberg, J., Lyons, M., Memarzadeh, F., Norton, D., Schuyler, G., Zboralski, J., and Barkley, W.E., Report of the Howard Hughes Medical Institute's Workshop on the Performance of Laboratory Chemical Hoods, *Am. Ind. Hyg. Assoc. J.* 64:228-237 (2003).

Schwebach, J. R., Chen, B., Glatman-Freedman, A., Casadevall, A., McKinney, J. D., Harb, J. L., McGuire, P. J., Barkley, W. E., Bloom, B. R., and Jacobs, W. R. Jr., Infection of Mice with Aerosolized *Mycobacterium tuberculosis*: Use of a Nose-Only Apparatus for Delivery of Low Doses of Inocula and Design of an Ultrasafe Facility, *Applied and Environmental Microbiology*, 68:4646-4649 (2002).

Barkley, W.E., Safe Experimentation in Biomedical Research, *Chemical Health & Safety*, March/April 2001.

McKinney, R. W., Barkley, W.E. and Wedum, A.G., The Hazard of Infectious Agents in Microbiologic Laboratories, *Disinfection, Sterilization and Preservation*, 5th ed., Ed., Block, S.S., Lippincott Williams & Wilkins, Philadelphia, PA., p. 1115, 2001.

*Laboratory Design, Renovation and Construction: Participants, Process and Product*, National Research Council, National Academy Press, Washington, D.C., 2000.

Greenley, P.L., Billings, C.E., DiBerardinis, L.J., Edwards, R.W., and Barkley, W.E., Containment Testing of Laboratory Hoods in the As Used Condition, *Applied Occupational and Environmental Health*, February 2000.

Barkley, W.E., Predicting Biocontainment Requirements for the Future, *JABSA*, Vol. 3, No. 2, 1998.

Barkley, W.E., Mouth Pipetting: A Threat More Difficult to Eradicate Than Small Pox, *JABSA*, Vol. 2, No. 2, 1997.

*Occupational Health and Safety in the Care and Use of Research Animals*, National Research

Council, National Academy Press, Washington, D.C., 1997.

Barkley, W.E., The Contributions of Dr. Arnold G. Wedum to the Virus Cancer Program of the National Cancer Institute, *JABSA*, Vol. 2, No. 1, 1997.

Schiager, K.J., McDougall, M.M., Christman, E.A., Party, E., Ring, J., Carlson, D.E., Warfield, C.A. and Barkley, W.E., Consensus Radiation Protection Practices for Academic Research Institutions, *Health Physics*. August 1996.

O'Brien, S.L., McDougall, M.M., and Barkley, W.E., Howard Hughes Medical Institute Dose Assessment Survey, *Health Physics*. July 1996.

Barkley, W.E. and Riley, C.T., Safety Considerations in Biopolymer Facilities, *ABRF News*, March 1996.

Barkley, W.E., In Celebration of Dr. Arnold G. Wedum's Legacy, *JABSA*, Vol. 1, No. 1, 1996.

*Prudent Practices in the Laboratory: Handling and Disposal of Chemicals*, National Research Council, National Academy Press, Washington, D.C., 1995.

Barkley, W.E. and Kubica, G.P., Biological Safety in the Experimental Tuberculosis Laboratory, *Tuberculosis: Pathogenesis, Protection, and Control*, Ed., Bloom, B.R., American Society for Microbiology, Washington, D.C., p. 61, 1994.

Barkley, W.E. and Richardson, J.H., Laboratory Safety, *Methods for General and Molecular Bacteriology*, Ed., Gerhardt, P., American Society for Microbiology, Washington, D.C., p. 715, 1994.

McKinney, R. W., Barkley, W.E. and Wedum, A.G., The Hazard of Infectious Agents in Microbiologic Laboratories. *Disinfection, Sterilization and Preservation*, 4th ed., Ed., Block, S.S., Lea and Febiger, Philadelphia, PA., p. 749, 1991.

Lunsford, E.G. and Barkley, W.E., Biohazard Containment, *Handbook of Facilities Planning*, Ed., Ruys, T., Van Nostrand Reinhold, New York, N.Y., p. 620, 1990.

Barkley, W.E., Attitude and Understanding: The Human Elements of Emergency Response, *Managing Hazardous Materials Emergencies in Biomedical Research Facilities*, U.S. Department of Health and Human Services, USPHS, National Institutes of Health, March 1990.

*Biosafety in the Laboratory: Prudent Practices for the Handling and Disposal of Infectious Materials*, National Research Council, National Academy Press, Washington, D.C., 1989.

Weiss, S.H., Goedert, J., Gartner, S., Popovic, M., Waters, D., Markham, P., Veronese, F., Gail, M., Barkley, W.E., et.al., Risk of Human Immunodeficiency Virus (HIV-1) Infection Among Laboratory Workers, *Science*, January 1988.

*Laboratory Safety: Principles and Practices*, Ed., Miller, B.M., Groschel, D.H.M., Richardson, J.H., Vesley, D., Housewright, R.D., and Barkley, W.E., American Society for Microbiology, Washington, D.C., 1986.

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Richardson, J.H. and Barkley, W.E., Biological Safety in the Clinical Laboratory, *Manual of Clinical Microbiology*, Ed., Lennette, E.H., Balows, A., Hausler, W.J., Jr. and Shadomy, H.J., American Society for Microbiology, Washington, D.C., p. 138, 1985.

Ashboren, D., Barkley, E., et.al., Health Impact of Biotechnology, Report on a WHO Working Group, Dublin 9-12 Nov. 1982, *Swiss Biotech*, October 1984.

*Biosafety in Microbiological and Biomedical Laboratories*, Ed., Richardson, J.H. and Barkley, W.E., U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institutes of Health. Washington: US Government Printing Office; HHS pub no (CDC) 84-8395; 1984.

Barkley, W.E. and Richardson, J.H., Control of Biohazards Associated with the Use of Experimental Animals. *Laboratory Animal Medicine*, Ed., Fox, J.G., Cohen, B.J. and Loew, F.M., Academic Press, New York, p. 595, 1984.

Barkley, W.E., Toxicology Laboratory Worker Health and Safety, *Concepts in Toxicology*, Ed., F. Homburger, Cambridge, MA., Vol. 1, p. 59, 1984.

Barkley, W.E. and Wedum, A.G. and McKinney, R.W. The Hazard of Infectious Agents in Microbiological Laboratories. *Disinfection, Sterilization and Preservation*, 3rd ed., Ed., Block, S.S., Lea and Febiger, Philadelphia, PA., p. 740, 1983.

Barkley, W.E., Engineering Controls for Recombinant DNA Technology, *Genetic Engineering and the Engineer*, National Academy Press, Washington, D.C., p. 19, 1982.

Barkley, W.E., Engineering Controls for Recombinant DNA Technology, *Genetic Engineering and the Engineer*, National Academy Press, Washington, D.C., p. 19, 1982.

Barkley, W.E., Containment and Disinfection, *Manual of Methods for General Bacteriology*, Ed., Gerhardt, P., American Society for Microbiology, Washington, D.C., p. 487, 1981.

West, D.L., Twardzik, D.R., McKinney, R.W., Barkley, W.E., and Hellman, A., Identification, Analysis and Control of Biohazards in Viral Cancer Research, *Laboratory Safety*, Ed., Fuscaldo, A.A., Erlick, B.J., Hindman, B., Academic Press, New York, p. 167, 1980.

Barkley, W. E., *PI Physical Containment*, Recombinant DNA Technical Bulletin, U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, Vol. 2, No.4, 1980.

Barkley, W.E., et.al. *Laboratory Safety Monograph*, U.S. Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, 1979.

Barkley, W.E., Safety Considerations in the Cell Culture Laboratory, *Methods in Enzymology*, Ed., Jakoby, W.B. and Pastan, I.H. Academic Press, New York, p. 36, 1979.

Barkley, W.E., Abilities and Limitations of Architectural and Engineering Features in Controlling Biohazards in Animal Facilities, *Laboratory Animal Housing*, National Academy of Science, Washington, D.C., p. 158, 1978.

Barkley, W. E. and Wedum, A. G., The Hazard of Infectious Agents in Microbiological Laboratories,

*Disinfection, Sterilization and Preservation*, 2nd ed., Ed., Block, S.S., Lea and Febiger, Philadelphia, PA., p. 740, 1978.

Chatigny, M.A., Barkley, W.E. and Vogl, W.A., Aerosol Biohazard in Microbiological Laboratories and How it is Affected by Air Conditioning Systems, *ASHRAE Transactions*, 1974, Vol. 80, Part 1.

Barkley, W.E., Facilities and Equipment for Virus Containment. *Biohazards in Biological Research*, Ed., Hellman, A., Oxman, M.N., and Pollack, R. Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, p. 327, 1973.

Wedum, A.G., Barkley, W.E. and Hellman, A., Handling of Infectious Agents, *J. Amer. Vet. Med. Assoc.*, Vol. 161: 1557, 1972.