# **Acknowledgments**

This document was prepared by the Education and Information Division (EID), Paul Schulte, Ph.D., Director. Thomas Lentz, Ph.D.; Kathleen MacMahon, D.V.M.; Ralph Zumwalde; and Clayton Doak were the principle authors of this document. Other members of the Document Development Branch, in particular Marie Haring Sweeney, Ph.D., were extremely helpful in providing technical reviews and comments.

For contributions to the technical content and review of this document, the authors gratefully acknowledge the following NIOSH personnel:

#### **Education and Information Division**

Heinz Ahlers, J.D. John Bailer, Ph.D. Jeff Bryant David Dankovic, Ph.D. **Jerome Flesch** Charles Geraci, Ph.D. Stephen Gilbert G. Kent Hatfield, Ph.D. Eileen Kuempel, Ph.D. Bonita Malit, M.D. Richard Niemeier, Ph.D. Ronald Schuler John Sheehy, Ph.D. **Randall Smith** Leslie Stavner, Ph.D. David Votaw Joann Wess John Whalen

## Division of Applied Research and Technology

Paul Baron, Ph.D. Kevin H. Dunn Joseph Fernback Laurence Reed Lloyd Stettler, Ph.D. Mark Toraason, Ph.D.

# Division of Surveillance, Hazard Evaluations, and Field Studies

Mitchell Singal, M.D.

#### **Division of Respiratory Disease Studies**

Donald Campbell Robert Castellan, M.D. Daniel Hewett Paul Hewett, Ph.D. Mark Hoover, Ph.D. Paul Middendorf, Ph.D. Ernest Moyer, Ph.D. John Parker, M.D. Lee Petsonk, M.D.

### **Health Effects Laboratory Division**

Vincent Castranova, Ph.D. Dan Lewis Kenneth Weber, Ph.D.

### **Pittsburgh Research Laboratory**

Andrew Cecala

#### **Office of the Director**

Frank Hearl, P.E. Anita Schill, Ph.D. Rosemary Sokas, M.D. The authors wish to thank Susan Afanuh, Vanessa Becks, Gino Fazio, Anne Hamilton, and Jane Weber for their editorial support and contributions to the design and layout of this document. Clerical support in preparing this document was provided by Judith Curless, Pamela Graydon, Rosmarie Hagedorn, Norma Lou Helton, and Kristina Wasmund.

Finally, special appreciation is expressed to the following individuals and organizations for serving as independent external reviewers and providing comments that contributed to the development of this document:

Chris Burley European Ceramic Fibres Industry Association Paris, France

John Cherrie, Ph.D. Liberty Safe Work Research Centre Aberdeen, United Kingdom

John Dement, Ph.D. Duke University Medical Center Durham, NC

William Kojola AFL-CIO, Safety and Health Department Washington, DC

David Lai, Ph.D. Office of Pollution Prevention and Toxics U.S. Environmental Protection Agency Washington, DC

Grace LeMasters, Ph.D. University of Cincinnati, College of Medicine Cincinnati, OH

Morton Lippmann, Ph.D. New York University, School of Medicine Tuxedo, NY

James Lockey, M.D. University of Cincinnati, College of Medicine Cincinnati, OH

Peter McClure, Ph.D. Syracuse Research Corporation North Syracuse, NY Eugene McConnell, D.V.M. ToxPath Raleigh, NC

National Insulation Association Alexandria, VA

Dennis O'Brien, Ph.D. United Automobile, Aerospace and Agricultural Implement Workers of America Detroit, MI

Refractory Ceramic Fibers Coalition Washington, DC

Carol Rice, Ph.D. University of Cincinnati, College of Medicine Cincinnati, OH

Jolanda Rijnkels, Ph.D. Health Council of the Netherlands Den Haag, The Netherlands

Scott Schneider Laborers' Health and Safety Fund of North America Washington, DC

Jay Turim, Ph.D. Sciences International, Inc. Alexandria, VA

Cindy Fraleigh Wheeler Office of Pollution Prevention and Toxics U.S. Environmental Protection Agency Washington, DC