

Future Directions for What We Eat in America—NHANES: The Integrated CSFII-NHANES

Future Directions for the Integrated CSFII-NHANES: What We Eat in America—NHANES¹

Johanna Dwyer,* Mary Frances Picciano^{†2} and Daniel J. Raiten[‡]

*Agricultural Research Service, U.S. Department of Agriculture, Washington DC 20250, [†]Office of Dietary Supplements and the [‡]Office of Prevention Research and International Programs, National Institutes of Health, U.S. Department of Health and Human Services, Bethesda, MD 20892

ABSTRACT The history of the integration of the dietary data collection from the National Health and Nutrition Examination Survey (NHANES) and the Continuing Survey of Food Intakes by Individuals (CSFII) is reviewed. The purposes and process of the workshop are presented. The three key topics of the workshop are summarized. The key roles of cosponsors and participants are acknowledged. *J. Nutr.* 133: 576S–581S, 2003.

KEY WORDS: • *What We Eat in America—NHANES* • *nutritional status* • *Office of Dietary Supplements* • *National Institutes of Health* • *Agricultural Research Service* • *U.S. Department of Agriculture*

Over the past three decades, the National Nutrition Monitoring and Related Research Program has evolved into a comprehensive system for providing needed data to guide nutrition research, policy and programmatic decisions. **Table 1** summarizes some of the many uses of such data and current needs of researchers and policy makers.

During the 1990s Congress repeatedly encouraged the Departments of Agriculture and Health and Human Services to merge the common food consumption elements of their respective surveys. An additional impetus was to maximize efficiency in the face of diminished purchasing power but level resources. In 1998 the National Center for Health Statistics (NCHS)³ of the Centers for Disease Control and Prevention (CDC) at the U.S. Department of Health and Human Services (DHHS) and the Agricultural Research Service (ARS) of the U.S. Department of Agriculture (USDA) signed a memorandum of understanding to

integrate the National Health and Nutrition Examination Survey (NHANES) and the USDA/ARS Continuing Survey of Food Intakes by Individuals (CSFII) dietary data collection activities into an integrated survey. Preparations for the integrated survey were completed between 1998 and 2001. A major step in its evolution was the development and testing of the USDA's new Automated Multiple Pass System to collect dietary recall and dietary questionnaire information. Additionally, ARS and NCHS staff worked together to integrate the NHANES and CSFII dietary intake questionnaires. Data users and collaborators were asked to comment on data needs during this process, and data user input is also planned for future survey activities. Early in 2002, ARS and NHCS signed a memorandum of understanding to further collaborate in data collection and implementation of the dietary portion of a single, continuous, population-based national nutrition survey. Data collection began in January 2002. With the integrated survey a reality and in the field, it seemed timely to discuss both the process and content of the data collection. Specific attention was directed to appropriate analysis and evaluation of the dietary aspects of the survey, including intakes of food, beverages and dietary supplements.

PURPOSE OF THE WORKSHOP AND KEY TOPICS

A workshop was convened to bring together representatives of the major stakeholder communities including federal agencies involved in research, surveillance and policy; academia; and others who are involved in the management and use of the dietary aspects of the survey. It reviewed progress on current survey methodology, data needs and the analyses required to capture usual dietary intake. The workshop goals were to develop recommendations on 1) how to best meet current and anticipated federal needs for dietary data on foods, nutrients, other food components and dietary supplements that are presently collected in the integrated dietary survey and 2) major needs and problems associated with the provision and use of

¹ From the workshop "Future Directions for the Integrated CSFII-NHANES: What We Eat in America—NHANES" held on June 20–21, 2002, in Rockville, MD. This workshop was sponsored by the Office of Dietary Supplements, National Institutes of Health, U.S. Department of Health and Human Services (DHHS) and the Agricultural Research Service, U.S. Department of Agriculture (USDA) and cosponsored by the National Institutes of Child Health and Development, National Institutes of Health, and the National Center for Health Statistics, Centers for Disease Control and Prevention, DHHS, and the Cooperative State Research, Education, and Extension Service and the Economic Research Service, USDA. Guest editors for this workshop were Johanna Dwyer, Agricultural Research Service, USDA; Mary Frances Picciano, Office of Dietary Supplements, National Institutes of Health, DHHS; and Daniel J. Raiten, Office of Prevention Research and International Programs, National Institute of Child Health and Human Development, National Institutes of Health, DHHS.

² To whom correspondence should be addressed.

E-mail: piccianm@od.nih.gov

³ Abbreviations used: ARS, Agricultural Research Service; CDC, Centers for Disease Control and Prevention; CFSAN, Center for Food Safety and Applied Nutrition; CSFII, Continuing Survey of Food Intakes by Individuals; DHHS, U.S. Department of Health and Human Services; FDA, Food and Drug Administration; NCHS, National Center for Health Statistics; NHANES, National Health and Nutrition Examination Survey; NIH, National Institutes of Health; ODS, Office of Dietary Supplements; USDA, U.S. Department of Agriculture.

TABLE 1

Uses of data from the National Nutrition Monitoring Program and Related Research Program¹

Public policy

Monitoring and surveillance

- Trends in food and nutrient intake (e.g., total fat and saturated fat intake, fruit and vegetable intake)
- Trends in the prevalence of disease and related risk factors (e.g., elevated serum cholesterol levels, hypertension, diabetes, overweight, obesity)
- Trends in food intake coupled with risk factors
- Trends in household food security
- Current and future safety of the food supply (e.g., monitoring the exposure to methylmercury in fish; pesticides in raw agricultural commodities; bacteria in drinking water and raw and processed ready-to-eat foods, such as hot dogs)
- Healthy People 2010 objectives for improving health
- Evaluation of whether intakes are consistent with the Dietary Guidelines for Americans
- Postmarket surveillance of intake of new products (e.g., infant formula, aspartame)
- Trends in dietary supplement use and composition
- Trends in dietary knowledge and behavior

Regulation

- Food biosecurity or safety (e.g., protection from pesticides, infection [e.g., *Salmonella enteritidis* in eggs], contaminants [e.g., mercury levels in seafood], food and color additives [the Food and Drug Administration's premarket approval process for food and color additives requires estimates of their probable daily intake])
- Food fortification policy (e.g., the U.S. Food and Drug Administration requiring that folic acid be added to specific flour, breads and other grains to help prevent neural tube defects)
- Food labeling (e.g., use of survey data to define what serving sizes should be on food labels, use of survey and composition data for decisions about the Nutrition Facts label and criteria for health and nutrient content claims)
- Dietary supplement labeling

Nutrition-related programs

- Dietary guidelines (i.e., development of Dietary Guidelines for Americans and the Food Guide Pyramid)
- Integrated health programs (e.g., National Cholesterol Education Program, National High Blood Pressure Education Program)
- Food assistance programs (i.e., food stamps; Supplemental Food Program for Women, Infants, and Children; school breakfast; school lunch)
- Private sector programs (e.g., programs by the Dairy Council and the National Osteoporosis Foundation)

Establishment of population-based (normative data) standards

- U.S. growth charts
- Nutritional biochemistry (biomarkers)
- Nutrient requirements through the life cycle (development and evaluation of Dietary Reference Intakes)

Scientific research

- Cross-sectional and longitudinal studies of relationships of food intake or dietary supplement use to nutrient status, health status, occurrence of disease and overall mortality (e.g., examination of fat-soluble diet components, common age-related degeneration diseases of the eye)
- Relationship between serum concentration of folate and neural tube defects or cardiovascular disease
- Identification of appropriate biomarkers of nutritional status
- Research to study welfare reform and food stamps
- Research to study factors contributing to food security

¹ Adapted from Briefel (1). Selected items are provided as examples of the extensive use of these data.

the desired data output for policy and research purposes and implications for improvements.

The workshop topics included the collection of intake data, food and dietary supplement composition databases and intake estimation. A steering committee consisting of representatives

from agencies involved in the national nutrition monitoring system was convened to help define the parameters and provide information for three working papers intended to serve as the point of reference for the workshop deliberations. The subjects of these working papers were 1) the collection of information on food and dietary supplements, 2) estimation of intakes from these data and 3) food and dietary supplement databases available for use in the integrated survey. For each topic, current procedures, policy and research needs; strengths and limitations of the current data collection process; and outstanding policy concerns and needs were discussed. During the workshop, participants developed recommendations on how to best meet major needs as outlined by the working papers on these topics. In addition, knowledge gaps and problems associated with providing the desired data output for policy and research purposes and implications for improvements were summarized.

Five experts from the nutrition research community shared their insights on workshop topics with attendees: Clifford Johnson, M.P.H., director, NHANES, NCHS, CDC, presented an excellent update on the status of What We Eat in America–NHANES. Catherine Woteki, Ph.D., dean of the College of Agriculture, Iowa State University, and chair of the American Society for Nutrition Sciences Task Force on National Nutrition Monitoring, provided an overview of the uses of the dietary component of the integrated survey in generating national nutrition policy. Suzanne P. Murphy, Ph.D., of the Cancer Research Center, University of Hawaii, provided perspectives on the collection of intake data. Alicia Carriquiry, Ph.D., professor of statistics and associate provost at the Iowa State University, spoke on estimating intakes, and Gary Beecher, Ph.D., ARS, USDA (retired) described food and dietary supplement composition databases.

Nutritional status is assessed not only by dietary intake but also by biochemical, anthropometric, clinical and functional indicators. The great value of the NHANES survey is that it provides a fuller picture of nutritional status than can be obtained from dietary intakes alone. Each method of assessing nutritional status has its strengths and weaknesses, and a combination of available methods provides the most complete picture. Moreover, NHANES provides information on a representative sample of the civilian, noninstitutionalized population and thus a benchmark for the nutritional status of U.S. citizens on a continuing basis.

The first topic of the workshop was the collection of food and dietary supplement intake data. Food intake data have been collected for many years. The methods are well developed and the Automated Multiple Pass System overcomes some of the problems of underestimation of previously used methods (2). The collection of information on dietary supplements is a recent addition and the effectiveness of current methods is being continually assessed. Research is still needed on appropriate methods for collecting dietary supplement information so that it can be merged with data on food composition to obtain total intakes of nutrients and other bioactive constituents of interest. The patterns of use and motivations for consuming dietary supplements may differ from those involved in food selection and patterns of food intake, and research is also needed on these issues.

The second topic focused on the estimation of dietary intakes of nutrients and other bioactive substances. The National Institutes of Health (NIH) mission is to foster research to extend healthy life and reduce the burden of illness and disability; it requires quantitative estimates of daily intakes of bioactive constituents from foods and dietary supplements for nutrition research studies assessing interventions for prevent-

ing and treating diseases. The U.S. Food and Drug Administration (FDA) mission focuses on protecting public health by ensuring the safety of the food supply. The mission of the Center for Food Safety and Applied Nutrition (CFSA) of the FDA focuses on promoting and protecting the public's health by ensuring that the nation's food supply is safe, wholesome, sanitary and honestly labeled. The USDA mission is to provide an adequate, safe and wholesome food supply at an affordable cost. It needs estimates of intakes of food, nutrients and other bioactive substances to assess the appropriateness of the food supply and to plan how best to provide essential nutrients and other substances citizens require for health.

The estimation of total dietary intakes includes data on both foods and dietary supplements, but methods for their data collection differ. The completeness of the analytical data available also varies by constituent and by source. What will be available in the integrated survey is more complete than ever before, but important gaps remain. Many methodological issues must be considered in merging these data and using them to obtain useful, accurate and reliable estimates of usual intakes. There is a need to explore what is currently being done and to consider further research on alternative strategies for collecting and merging the data.

The final topic focused on food and dietary supplement composition databases that are available for analyzing the data from the integrated survey. Information on the chemical composition of foods and dietary supplements is necessary for sound estimates of dietary intake of nutrients and other bioactive food components. Analytical data are most complete for the nutrients in foods, but the completeness is variable. Data on the nutrients in dietary supplements are based on label statements, but no broad-based verification of dietary supplement ingredients currently exists. Other bioactive substances of health significance in foods and dietary supplements are also of interest; available data are incomplete because resources and analytical methodologies are often limited. More research is necessary to fill these gaps. The National Food and Nutrient Analysis Program provides the framework for a comprehensive revision of food composition data in 1000 commonly consumed foods for critical nutrients. The framework may also be applicable to the analysis of dietary supplements and bioactive substances other than nutrients.

Our deliberations were further enlightened by a panel discussion on making the case for maximizing the uses of the combined survey. Sally Squires, M.S., health and medical writer for the *Washington Post*; Mary Crist Erwin of Porter Novelli; and Nancy Chapman, M.S., R.D., of Chapman Associates provided communication perspectives. Grace Ostenson, Ph.D., former professional staff director for the Science Committee, U.S. House of Representatives, and Kate Gorton, M.S., professional staff member of the Committee on Education and the Workforce, U.S. House of Representatives, provided Congressional perspectives.

SPONSORS

The workshop was cosponsored by the two federal agencies responsible for conducting the integrated survey: DHHS and USDA. Included in the DHHS supporting consortium were the Office of Dietary Supplements (ODS) and the National Institute of Child Health and Development at NIH and the NCHS at CDC. Representatives of the FDA and the Environmental Protection Agency also served on the steering committee and as participants. Within the USDA, ARS led the effort, the Cooperative State Research Education and Extension Service and the Economic Research Service partic-

TABLE 2

Workshop steering committee members¹

P. Peter Basiotis PhD	Center for Nutrition Policy and Promotion, USDA
Mary M. Bender PhD	Center for Food Safety and Applied Nutrition, FDA, DHHS
Bernadette K. Bindewald MS, MPH	National Center for Health Statistics, CDC, DHHS
Alicia L. Carriquiry PhD	Iowa State University
Anne K. Courtney PhD	Food Safety and Inspection Service, USDA
Nancy T. Crane MPH, RD	Center for Food Safety and Applied Nutrition, FDA, DHHS
Kevin W. Dodd PhD	National Cancer Institute, NIH, DHHS
Johanna Dwyer DSc, RD	Agricultural Research Service, USDA
Katie Egan BS, RD	Center for Food Safety and Applied Nutrition, FDA, DHHS
Kathleen C. Ellwood PhD	Agricultural Research Service, USDA
Susan E. Gebhardt MS	Agricultural Research Service, USDA
Joanne F. Guthrie PhD, MPH, RD	Economic Research Service, USDA
James M. Harnly PhD	Agricultural Research Service, USDA
Joanne M. Holden MS	Agricultural Research Service, USDA
Clifford Johnson MPH	National Center for Health Statistics, CDC, DHHS
Joseph Judd PhD	Agricultural Research Service, USDA
Insun Kim DPH	National Center for Health Statistics, CDC, DHHS
Susan M. Krebs-Smith PhD, MPH	National Cancer Institute, NIH, DHHS
Paul M. Kuznesof PhD	Center for Food Safety and Applied Nutrition, FDA, DHHS
Carol E. Lang MS	Office of Pesticide Programs, EPA
Margaret McDowell MPH	National Center for Health Statistics, CDC, DHHS
Alanna Moshfegh MS, RD	Agricultural Research Service, USDA
Pamela R. Pehrsson PhD	Agricultural Research Service, USDA
Mary Frances Picciano PhD	Office of Dietary Supplements, NIH, DHHS
Kathy Radimer PhD	National Center for Health Statistics, CDC, DHHS
Daniel Raiten PhD	National Institute of Child Health and Human Development, NIH, DHHS
Amy F. Subar PhD	National Cancer Institute, NIH, DHHS
Christine A. Swanson PhD	Office of Dietary Supplements, NIH, DHHS
Wayne R. Wolf PhD	Agricultural Research Service, USDA
Elizabeth Yetley PhD	Center for Food Safety and Applied Nutrition, FDA, DHHS

¹ Abbreviations: CDC, Centers for Disease Control and Prevention; DHHS, U.S. Department of Health and Human Services; EPA, Environmental Protection Agency; FDA, Food and Drug Administration; NIH, National Institutes of Health; USDA, U.S. Department of Agriculture.

ipated as cosponsors and participants. Representatives from USDA's Center for Nutrition Policy and Promotion, Food Safety and Inspection Service and Food and Nutrition Service attended as participants in the workshop.

ACKNOWLEDGMENTS

Special thanks for their support are due to Edward B. Knipping, Ph.D., acting administrator of ARS; Caird Rexroad, Jr, Ph.D., acting deputy administrator of ARS; Joseph Spence, Ph.D., acting associate deputy administrator Animal Production, Product Value and Safety, National Program Staff, ARS; Paul Coates, Ph.D., director of ODS; Edward J. Sondik, Ph.D., director of NCHS; and Christine Taylor, Ph.D., director of the Office of Nutritional Products, Labeling, and Dietary Supplements, CFSAN.

The workshop was a team effort, with many individuals contributing to its success.

For 6 mo before the workshop, the steering committee met monthly by conference call to shape the issues to be addressed and gather and provide information for the background papers to the editors. Steering committee members were also active participants at the workshop. Steering committee members are listed in **Table 2**. We thank them for their many helpful contributions.

During the workshop each topic was thoroughly reviewed by two discussion groups led by co-chairs who also summarized the discussions. They included Margaret McDowell, M.P.H., NCHS, CDC; Alanna Moshfegh, M.S., R.D., ARS, USDA; Daniel Raiten, Ph.D., National Institute of Child Health and Human Development; Christine Swanson, ODS, NIH; Barbara Winters, Ph.D., Marywood University; and Helen Wright, Ph.D., Pennsylvania State University, on collection of food and dietary supplement intakes. Peter Basiotis, Ph.D., Center for Nutrition Policy and Promotion, USDA; Kevin Dodd, Ph.D., National Cancer Institute, NIH; Joanne Guthrie,

Ph.D., M.P.H., R.D., Economic Research Service, USDA; and Katherine Ralston, Ph.D., Economic Research Service, USDA, were group leaders for intake estimation. Bernadette Bindewald, M.S., M.P.H., NCHS, CDC; James Harnly, Ph.D., ARS, USDA; Joanne Holden, M.S., ARS, USDA; and Leila Saldanha Ph.D., R.D., Consumer Healthcare Products Association, led discussions on food and dietary supplement data and databases. We thank them.

Finally, we were fortunate to have the additional assistance of a highly knowledgeable group of additional participants from professional organizations and the community of researchers and users of the survey. Their insights and participation further enriched the deliberations. A complete list of workshop participants is given in the **Appendix**.

Throughout the process of organizing the workshop, the help of Jody Engel, M.A., scientific events and conferences coordinator, ODS, NIH, was invaluable. We also thank Charlene Brown and Amy Odegard, ARS, USDA, for help with technical details. The expert assistance of Judith Dickson, M.S., ELS(D), Science Editing, with this publication is acknowledged with thanks.

LITERATURE CITED

1. Briefel, R. R. (2001) Nutrition monitoring in the United States. In: Present Knowledge in Nutrition (Bowman, B. A. & Russell, R. M., eds.), pp. 617–635. ILSI Press, Washington, DC.
2. Conway, J. M., Ingwersen, L. A. & Moshfegh A. (2001) Effectiveness of the USDA 5-Step Multiple-Pass Method to Assess Food Intake in Obese and Non-obese Women. Available at <http://www.nal.usda.gov/ttic/tektran/data/000012/92/0000129284.html> (accessed September 23, 2002).

APPENDIX

*Workshop participants***Richard Allison PhD**

Executive Director
American Society for Nutritional Sciences

David Baer PhD

Research Physiologist
Diet and Human Performance Laboratory
Agricultural Research Service, USDA

P. Peter Basiotis PhD

Economist and Director
Center for Nutrition Policy and Promotion, USDA

Gary R. Beecher PhD

Consultant

Mary M. Bender PhD

Team Leader
Database Management and Evaluation Team
Center for Food Safety and Applied Nutrition, FDA, DHHS

Odilia I. Bermudez MPH, PhD

Scientist
Jean Mayer USDA Human Nutr Res Ctr on Aging
Tufts University

Bernadette K. Bindewald MS, MPH

National Center for Health Statistics, CDC, DHHS

Margaret L. Bogle PhD

Executive Director
Delta NRI
Food Safety and Inspection Service, USDA

Alicia L. Carriquiry PhD

Professor of Statistics and Associate Provost
Iowa State University

Catherine M. Champagne PhD

Associate Professor
Pennington Biomedical Research Center

Nancy Chapman MS, RD

Chapman Associates

Mary Christ Erwin

Director
Porter Novelli

Paul Coates PhD

Director
Office of Dietary Supplements, NIH, DHHS

Gerald Combs, Jr. PhD

Director
Grand Forks Human Nutrition Research Center
Agricultural Research Service, USDA

Joan Conway PhD

Research Chemist
Diet and Human Performance Laboratory
Agricultural Research Service, USDA

Becky Costello PhD

Deputy Director
Office of Dietary Supplements, NIH, DHHS

Anne K. Courtney PhD

AAAS Risk Policy Fellow
Office of Public Health and Science
Food Safety and Inspection Service, USDA

Nancy T. Crane MPH, RD

Division of Nutrition Science and Policy
Center for Food Safety and Applied Nutrition, FDA, DHHS

Barbara Devaney PhD

Mathematica Policy Research

Judith Dickson MS

Science Editing, Inc.

Kevin W. Dodd PhD

Research Scientist
National Cancer Institute, NIH, DHHS

Johanna Dwyer DSc, RD

Assistant Administrator, Human Nutrition
Agricultural Research Service, USDA

Katie Egan BS, RD

Consumer Safety Officer
Division of Risk Assessment
Center for Food Safety and Applied Nutrition, FDA, DHHS

Alison L. Eldridge PhD, RD

Manager, Dietary Intake Research
Bell Inst Health and Nutrition
General Mills

Jody Engel MA

Scientific Events & Conferences Coordinator
Office of Dietary Supplements, NIH, DHHS

APPENDIX (continued)

Workshop participants

Abby G. Ershow ScD

Nutrition Program Officer
Division of Heart and Vascular Diseases
National Heart, Lung and Blood Institute, NIH, DHHS

Kenneth D. Fisher PhD

K D Consultants

Richard Forshee PhD

Research Assistant Professor
Virginia Tech Center for Food and Nutrition Policy

Susan E. Gebhardt MS

Nutritionist
Agricultural Research Service, USDA

Deborah Gibson

Manager, Canadian Nat'l Food & Nutrition Surveillance System
Office of Nutrition Policy and Promotion
Health Products and Food Branch, Health Canada

Katherine J. Gorton MS

Professional Staff
Committee on Education and the Workforce
US House of Representatives

Janet L. Greger PhD

Dean & Vice Provost
Whetten Graduate Center
University of Connecticut

Joanne F. Guthrie PhD, MPH, RD

Economic Research Service, USDA

Pamela S. Haines DrPH, RD

Associate Professor, Chair, Nutrition MPH Program
Department of Nutrition, School of Public Health
University of North Carolina at Chapel Hill

James M. Harnly PhD

Research Leader, Food Composition
Beltsville Human Nutrition Research Center
Agricultural Research Service, USDA

Suzanne Harris PhD

International Life Sciences Institute, NA

James T. Heimbach PhD

Principal
ENVIRON Intl Corp

Jay Hirschman MPH, CNS

Director, Special Nutrition Staff
Office of Analysis, Nutrition and Evaluation
Food and Nutrition Service, USDA

Joanne M. Holden MS

Research Leader, Nutrient Data Laboratory
Beltsville Human Nutrition Research Center
Agricultural Research Service, USDA

Van S. Hubbard MD, PhD

Director-NIH Division of Nutrition Research Coordination
Chief, Nutritional Sciences Branch
National Institute of Diabetes, Digestive and Kidney Diseases, NIH,
DHHS

Janet R. Hunt PhD, RD

Research Nutritionist
Grand Forks Human Nutr Res Ctr
Agricultural Research Service, USDA

Clifford Johnson MPH

Director, NHANES Program
National Center for Health Statistics, CDC, DHHS

Wendy L. Johnson-Taylor PhD, MPH, RD

Public Health Nutrition and Health Policy Advisor
Division of Nutrition Research Coordination, NIH, DHHS

Joseph Judd PhD

Acting Director
Diet and Human Performance Laboratory
Beltsville Human Nutrition Research Center
Agricultural Research Service, USDA

Insun Kim DPH

Epidemiologist
National Center for Health Statistics, CDC, DHHS

Jim Krebs-Smith MPH

Nutritionist, HNRIM System Coordinator
Division of Nutrition Research Coordination
National Institute of Diabetes, Digestive and Kidney Diseases, NIH,
DHHS

Susan M. Krebs-Smith PhD, MPH

Chief
Risk Factor Monitoring and Methods Branch
National Cancer Institute, NIH, DHHS

Molly Kretsch PhD

Research Physiologist
Western Human Nutrition Research Center
Agricultural Research Service, USDA

Penny Kris-Etherton PhD

Distinguished Professor of Nutrition
Department of Nutrition
Pennsylvania State University

Doris Kuehn

Information Specialist
Food and Nutrition Information Center
National Agricultural Library
Agricultural Research Service, USDA

Carol E. Lang MS

Biologist
Health Effects Division/Chemical Exposure Branch
Office of Pesticide Programs, EPA

Hyoung Lee PhD

Chemist
Office of Food Additive Safety
Center for Food Safety and Applied Nutrition, FDA, DHHS

Nancy Lewis PhD

Professor
University of Nebraska

Catherine Loria PhD, MS, MA

Epidemiologist
Division of Epidemiology and Clinical Applications
National Heart, Lung, and Blood Institute, NIH, DHHS

Jennifer H. Madans PhD

Associate Director for Science
National Center for Health Statistics, CDC, DHHS

Margaret McDowell MPH, RD

Health Statistician
National Center for Health Statistics, CDC, DHHS

John Milner PhD

Chief
Nutritional Science Research Group
National Cancer Institute, NIH, DHHS

Diane Mitchell MS, RD

Coordinator, Diet Assessment Center
Department of Nutrition
Pennsylvania State University

Alanna Moshfegh MS, RD

Research Leader, Survey Research Group
Beltsville Human Nutrition Research Center
Agricultural Research Service, USDA

Mary M. Murphy MS, RD

Manager
ENVIRON International Corporation

Suzanne P. Murphy PhD

Nutrition Researcher
Cancer Research Center
University of Hawaii

Grace L. Ostenso PhD

Former Staff Director, Subcommittee Scientist
U.S. House of Representatives

Pamela R. Pehrsson PhD

Research Scientist
Nutrient Data Laboratory
Beltsville Human Nutrition Research Center
Agricultural Research Service, USDA

APPENDIX (continued)*Workshop participants***Jean Pennington PhD, RD**

Research Nutritionist
Division of Nutrition Research Coordination, NIH, DHHS

Mary Frances Picciano PhD

Senior Nutrition Research Scientist
Office of Dietary Supplements, NIH, DHHS

Maria G. Pisa MS, LS

Associate Director for Public Services
National Agricultural Library, USDA

Mary Poos PhD

Senior Project Officer
Food and Nutrition Board, Institute of Medicine
National Academy of Sciences

Daniel Raiten PhD

Office Prevention Research and International Programs
National Institute of Child Health and Human Development, NIH,
DHHS

Katherine Ralston PhD

Agricultural Economist
Diet, Safety and Health Economics Branch
Economic Research Service, USDA

Leila G. Saldanha PhD, RD

Vice President
Nutritional Sciences
Consumer Healthcare Products Association

Etta A. Saltos PhD, RD

Program Director, Nutrition and Food Safety
Cooperative State Research Education and Extension
Service/National Research Initiative, USDA

Pippa Simpson PhD

Professor and Director of Satisfaction Group
Care and Clinical Pharmacology
University of Arkansas for Medical Sciences

Patricia Smith

Senior Research Associate
Virginia Tech Center for Food and Nutrition Policy

Ann W. Sorenson PhD

Head
Department of Nutrition and Food Science
Utah State University

Sally Squires, MS

Health and Medical Writer
Washington Post

Desiré Stapley

Food and Nutrition Information Center
National Agricultural Library
Agricultural Research Service, USDA

Amy F. Subar PhD

Nutritionist
National Cancer Institute, NIH, DHHS

Christine A. Swanson PhD

Program Director for Dietary Supplements Research Centers
Office of Dietary Supplements, NIH, DHHS

Christine L. Taylor PhD

Director
Office of Nutritional Products, Labeling and Dietary Supplements,
FDA, DHHS

Susan Welsh PhD

National Program Leader, Human Nutrition
Cooperative State Research Education and Extension Service
Agricultural Research Service, USDA

Barbara Winters PhD

Nutrition Department
Marywood University

Wayne R. Wolf PhD

Beltsville Human Nutrition Research Center
Agricultural Research Service, USDA

Catherine E. Woteki PhD

Dean
College of Agriculture
Iowa State University

Helen Wright PhD

Professor of Nutrition
Department of Nutrition
Pennsylvania State University

Ann L. Yaktine PhD

Program Officer
Food and Nutrition Board, Institute of Medicine
National Academy of Sciences