BIOGRAPHICAL SKETCH

NAME: Guenther, Patricia M

eRA COMMONS USER NAME: patriciaguenther

POSITION TITLE: Research Professor

EDUCATION/TRAINING

| INSTITUTION AND LOCATION | DEGREE | Completion Date | FIELD OF STUDY |
| --- | --- | --- | --- |
| Case Western Reserve University; Cleveland, OH | B.S. | 5/70 | Nutrition |
| Case Western Reserve University; Cleveland, OH | M.S. | 8/71 | Nutrition, Public Health Emphasis |
| University of Michigan Medical Center; Ann Arbor, MI | R.D. | 12/72 | Dietetic Internship |
| University of Maryland at College Park; College Park, MD | Ph.D. | 12/84 | Nutritional Science |
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# Personal Statement

In my role as a Research Professor, I have continued to develop and carry out research projects that advance dietary assessment methods. During my tenure at USDA’s Center for Nutrition Policy and Promotion and Agricultural Research Service, I successfully led projects that involved data analysis and interpretation, collaborated with other researchers at universities and at other federal agencies, and produced peer-reviewed publications, including the development and evaluation of the 2005 and 2010 versions of the Healthy Eating Index (HEI). Since then I led the development and evaluation of a similar tool to evaluate the quality of grocery purchases (Brewster PJ, Durward CM, Hurdle JF, Stoddard GJ, **Guenther PM**, 2018, The Grocery Purchase Quality Index-2016 performs similarly to the Healthy Eating Index-2015 in a national survey of household food purchases. *Journal of the Academy of Nutrition and Dietetics*, in press).

My 14 years of experience on the editorial board of the *Journal of the Academy of Nutrition and Dietetics*, a top-tier nutrition journal, makes me well-suited to ensure that any study to which I contribute meets the standards of the nutrition community and that the results will be practical

and useful.

As a federal employee I was ineligible to serve on federal advisory committees; however, I did serve on several important federal committees, including the Federal Steering Committee on Dietary Reference Intakes, the committee that wrote the 2010 Dietary Guidelines for Americans, and the committee that developed the nutrition objectives for Healthy People 2010. I also served as a staff member for the 2010 Federal Dietary Guidelines Advisory Committees.

# Positions and Honors

**Employment**

1972-1976 Clinical Dietitian, District of Columbia General Hospital, Washington, DC

1976-1978 Dietitian, Navy Food Service Systems Office, Washington, DC

1978-1996 Nutritionist, USDA Agricultural Research Service, Food Surveys Research Group, Hyattsville, MD

1996-2003 Independent consultant in nutrition and survey methodology, Salt Lake City, UT

2003-2013 Nutritionist, USDA Center for Nutrition Policy and Promotion, Alexandria, VA

2013- Principle Consultant, Guenther Consulting, Salt Lake City, UT

**Academic Appointments**

1989-1991 Adjunct Assistant Professor, University of Maryland at College Park, Dept. of Human Nutrition

1998-2013 Adjunct Associate Professor, University of Utah, Division of Nutrition

2014- Research Professor, University of Utah, Dept. of Nutrition and Integrative Physiology

2016- Adjunct Professor, University of Utah, Dept. of Biomedical Informatics

**Professional Memberships and Other Positions**

1972- Academy of Nutrition and Dietetics

1986- American Society for Nutrition

2004-2007 Board of Editors, *Journal of Nutrition Education and Behavior*

2004- Board of Editors, *Journal of the Academy of Nutrition and Dietetics*

2010-2017 Scientific Advisory Board, Onlife Health, Inc., a personal health coaching company

 2013- Ad hoc reviewer, *Journal of Nutrition, American Journal of Clinical Nutrition, American Journal of Preventive Medicine* and other peer-reviewed journals

**Recent Awards**

2005 USDA Merit Award for conceptual development of the revised Healthy

Eating Index

2006 USDA Merit Award for evaluation of the revised Healthy Eating Index

2008 USDA Merit Award for the application of the revised Healthy Eating Index

 2008 National Institutes of Health Merit for conceptualizing and implementing a model to estimate usual dietary intakes (team award)

2009 Mary P. Huddleson Award for best article in the *Journal of the American Dietetic Association* authored by a registered dietitian

2010 USDA Merit Award for the communication of the revised Healthy Eating Index

2010 Department of Health and Human Services Assistant Secretary for Health's Award for exemplary teamwork in supporting the scientific review of the 2010 Dietary Guidelines Advisory Committee

2011 Food and Drug Administration Commissioner’s Special Citation Award for exemplary interagency collaboration in establishing dietary intake objectives

and 10-year targets to improve Americans’ health through the Health People 2020 initiative

2012 National Institutes of Health Merit Award for the Measurement Error Webinar Series (team award)

2015 Elaine R. Monsen Award for Outstanding Research Literature for an outstanding body of published research in the field of dietetics, food, and nutrition

# Contribution to Science

1. Develop and Promote the Use of Measurement Error Models for Analyzing Dietary Data: One of the purposes of federal dietary surveys is to estimate the proportion of the population at risk for inadequate or excessive nutrient intake. In 1986 the National Academy of Sciences issued a report, commissioned by the USDA agency where I was employed, recommending improvements in survey design and statistical analysis to that end. The agency then entered into a cooperative agreement with Iowa State University (ISU) to develop and put into practice the proposed concepts. I was the project officer for that agreement and worked closely with the statisticians at ISU as the nutritionist on the team to develop and then promote what became known as the ISU method for estimating usual nutrient intake distributions from two 24-hr recalls. Particular points on these distributions, such as Estimated Average Requirements and Upper Limits, are used to estimate the proportions of the population at nutritional risk. This method works well for dietary components that are consumed nearly every day by nearly everyone, but not for episodically consumed foods, such as whole grains and seafood. The National Cancer Institute (NCI) took on that problem, and I was invited to join the effort and continue to work with that team. I brought the distributions of these episodically consumed foods to the attention of my colleagues at the USDA Center for Nutrition Policy and Promotion (CNPP), and they used the upper percentiles to judge what is feasible when they set the recommended amounts of various food groups in the widely used USDA Food Patterns.
2. **Guenther PM**, Kott PK, and Carriquiry AL, 1997, Development of an approach for estimating usual nutrient intake distributions at the population level. *Journal of Nutrition* 127:1106-1112. PMID: 9187624.
3. Dodd W, **Guenther PM**, Freedman LS, Subar AF, Kipnis V, Midthune D, Tooze, JA, and Krebs-Smith SM, 2006, Statistical methods for estimating usual intake of nutrients and foods: a review of the theory. *Journal of the American Dietetic Association* 106:1640-1650. PMCID: PMC3927552.
4. Krebs-Smith SM, **Guenther, PM**, Subar AF, Kirkpatrick SI, and Dodd W, 2010, Americans do not meet federal dietary recommendations. *Journal of Nutrition*, 140:1832-1838. PMCID: PMC2937576.
5. Zhang S, Midthune D, **Guenther PM**, Krebs-Smith SM, Kipnis V, Dodd KW, Buckman DW, Tooze JA, Freedman LS, and Carroll RJ, 2011, A new multivariate measurement error modelwith zero-inflated dietary data and its application to dietary assessment. *Annals of Applied Statistics* 5(2B):1456-1487. PMCID: PMC3145332.
6. Revise and Evaluate the Healthy Eating Index, a Measure of Overall Diet Quality: The original Healthy Eating Index (HEI), developed by CNPP to assess and monitor overall diet quality, was based on the 1990 Dietary Guidelines for Americans (DGA). By 2005 the DGA had evolved significantly, and CNPP invited the National Cancer Institute to participate in a revision of the HEI. I led the team that developed the HEI-2005 and also led the team that updated the HEI to comport with the 2010 DGA as well as the teams that conducted formal evaluations of validity and reliability. One of my specific contributions was to introduce the concept of measurement error in dietary data to both the development and evaluation processes. Both the HEI-2005 and HEI-2010 have been widely used in nutrition research and have advance the understanding of the relationship between overall diet quality and many health-related outcomes as well as to track changes in the quality of the diets of Americans. As a member of the Board of Editors of the *Journal of the Academy of Nutrition and Dietetics* and as an ad hoc reviewer for other journals, I have reviewed many papers that use the HEI and thereby guided the authors in appropriate use of the index.
7. **Guenther PM**, Reedy J, Krebs-Smith SM, 2008, Development of the Healthy Eating Index-2005. *Journal of the American Dietetic Association* 108:1896-1901. PMID: 18954580.
8. **Guenther PM**, Reedy J, Krebs-Smith SM, and Reeve, BB, 2008, Evaluation of the Healthy Eating Index-2005. *Journal of the American Dietetic Association* 108:1854-1864. PMID: 18954575.
9. **Guenther PM**, Casavale KO, Reedy J, Kirkpatrick SI, Hiza HAB, Kuczynski KJ, Kahle LL, Krebs-Smith SM, 2013, Update of the Healthy Eating Index: HEI-2010. *Journal of the Academy of Nutrition and Dietetics* 113:569-580. PMCID: PMC3810369.
10. **Guenther PM**, Kirkpatrick SI, Reedy J, Krebs-Smith SM, Buckman DW, Dodd KW, Casavale KO, and Carroll RJ, 2014, The Healthy Eating Index-2010 is a valid and reliable measure of diet quality according to the 2010 Dietary Guidelines for Americans. *Journal of Nutrition* 144:399-407. PMCID: PMC3927552.
11. Improve Dietary Data Collection Methods: Over the course of my career, I have worked to improve dietary data collection methods. I was the PI for the USDA Bridging Study that investigated the effects of improvements in data collection and processing procedures in dietary surveys. I was the Project Officer for the study, conducted by the Census Bureau, which resulted in the multiple-pass method for collecting 24-hour dietary recalls. I led the team that developed

the individual intake questionnaire for the Continuing Survey of Food Intakes by Individuals,

1994-1996. I was part of the early development team of NCI’s Automated Self-administered 24-hour Dietary Recall and am currently co-PI for a study to validate that tool for use by the low-income population.

1. Subar AF, Thompson FE, Potischman NA, Forsyth B, Buday R, Richards D, McNutt SW, Hull SG, **Guenther PM**, Schatzkin A, and Baranowski T, 2007, Formative research of a quick list for an automated, self-administered 24-hour dietary recall. *Journal of the American Dietetic Association* 107:1002-1007. PMID: 17524721.
2. **Guenther PM**, Cleveland LE, and Ingwersen, LA, 1998, Questionnaire Development and Data Collection Procedures. In: Cypel YS, and Tippett KS (eds.), Design and Operation of the Continuing Survey of Food Intakes by Individuals and the Diet and Health Knowledge Survey, 1994-96. NFS Report No. 96-1.
3. **Guenther PM**, DeMaio TJ, Ingwersen LA, and Berlin M, 1997, The multiple-pass approach for the 24-h recall in the Continuing Survey of Food Intakes by Individuals 1994-1996. *American Journal of Clinical Nutrition* 65:13S.
4. **Guenther PM**, Perloff BP, and Vizioli TL, 1994, Separating fact from artifact in changes in nutrient intake over time. *Journal of the American Dietetic Association* 94:270-275. PMID: 8120290.
5. Advance the Science Base of Federal Nutrition Policy: The Dietary Guidelines for Americans, set by the U.S. Departments of Agriculture and Health and Human Services, and the Dietary Reference Intakes, set by the Institute of Medicine, are the foundation of federal nutrition policy. They rest on a science base that is reviewed by expert advisory committees. My work has contributed to the formation of policy in several ways. My dissertation research was part of the science base for recommendation to “Choose Beverages and Foods That Limit Your Intake of Sugars” found in the 2000 Dietary Guidelines. As a member of the Federal Dietary Reference Intakes (DRIs) Steering Committee, I participated in the review of literature that justified a revision of the DRIs for vitamin D and calcium. As a staff member for the 2010 Dietary Guidelines Advisory Committee, I collaborated with Committee members to analyze, interpret, and report data for consideration by the Committee.
6. **Guenther PM**, Lyon JMG, and Appel, LJ, 2013, Modeling dietary patterns to assess sodium recommendations for nutrient adequacy. *American Journal of Clinical Nutrition* 97:842-847. PMID: 23446903.
7. **Guenther PM**, Ding EL, Rimm EB, 2013, Alcoholic beverage consumption by adults compared to Dietary Guidelines: Results of the National Health and Nutrition Examination Survey, 2007-2008. *Journal of the Academy of Nutrition and Dietetics* 113:546-550. PMID: 23415501.
8. Yetley EA, Brulé D, Cheney MC, Davis CD, Esslinger KA, Fischer PWF, Friedl KE, Greene-Finestone LS, **Guenther PM**, Klurfeld DM, L'Abbe MR, McMurry KY, Starke-Reed PE, and Trumbo PR, 2009, Dietary Reference Intakes for vitamin D: justification for a review of the 1997 values. *American Journal of Clinical Nutrition* 89:719-727. PCMID: PMC2667666.
9. **Guenther, PM**, 1986, Beverages in the diets of American teenagers. *Journal of the American Dietetic Association* 86:493-499. PMID: 3958400.

A complete list of published work is available in my curriculum vitae, a link to which is found at the top left of my faculty profile:

[https://faculty.utah.edu/u0242733PATRICIA\_M\_GUENTHER,\_PhD,\_RD/contact/index.hml](https://faculty.utah.edu/u0242733PATRICIA_M_GUENTHER%2C_PhD%2C_RD/contact/index.hml).

# Research Support

1. Ongoing Research Support

USDA Regional Nutrition Education Centers of Excellence Durward (PI) 9/1/15-2/28/19

“Multi-disciplinary Methods for Effective, Sustainable, and Scalable Evaluations of Nutrition

Education Programs”

The goal of this project is to develop tools for evaluating USDA’s large nutrition education programs, SNAP-Ed and EFNEP, using two new technologies, the mobile version of the Automated Self-administered 24-hour Recall and one that employs informatics to assess retail grocery purchases.

Role: Co-PI

R01 CA 215834-01A1 Bailey (PI) 6/15/2017-5/31/2019

“Development of a Total Nutrient Index”

The goal of this project is to develop a total nutrient index that represents nutrients from all sources: foods, beverages, and dietary supplements.

Role: Co-Investigator

1. Recently Completed Research Projects

USDA Regional Nutrition Education Center of Excellent-West grant Durward (PI) 7/15/15-7/14/17

“Evaluation of a novel, low cost, low burden, scalable technology for evaluating Expanded Food and Nutrition Education Program (EFNEP) and Supplemental Nutrition Assistance Program-Education (SNAP-Ed) Effectiveness”

The goal of this study was to evaluate a new technology for assessing the effectiveness of SNAP-Ed and EFNEP in an inexpensive and scalable way. The technology uses data provided directly by the retailer to measure the quality and cost of retail grocery purchases.

Role: Co-PI

R21 HL128958-01 Murtaugh (PI) 9/15/15-6/30/17

“Untangling Sodium, Energy, and Blood Pressure in Whites and African Americans”

The goal of this secondary data analysis was to elucidate the relationships among sodium intake, energy intake, and blood pressure in the DASH-Sodium trial.

Role: Co-PI

National Berry Crops Initiative Burton-Freeman (PI) 5/15/16-5/14/17

“Fruit Consumption and Associated Factors in the United States”

This study expanded the knowledge base about fruit consumption, especially berry consumption, in the US and explore the factors that may explain differences in fruit intake among sub-populations, including how attitudes about diet and health are related to fruit and berry consumption.

Role: Co-PI