C. Contribution to Science

Health effects of folic acid This work has had significant impact on appreciation of the role of folic acid in preventing neural tube defects, and in its potential role in homocysteine control and in both cancer risk and prevention. I acted as consultant to the Centers for Disease Control and Prevention, to the Spina Bifida Association of America and as advisor to the Food and Drug Administration during the period leading up to the mandatory fortification of enriched flour and grain products with synthetic folic acid. **Publications from my work in folic acid include:**

- **Beresford SA. How do we get enough folic acid to prevent some neural tube defects? Am J Public Health. 1994;84(3): 348-350. PMCID: PMC1614815.**
- **Boushey CJ, Beresford SA, Omenn GS, Motulsky AG. A quantitative assessment of plasma homocysteine as a risk factor for vascular disease. Probable benefits of increasing folic acid intakes. JAMA. 1995; 274(13):1049-1057. PubMed PMID: 7563456.**
- **Neuhouser ML, Beresford SA, Hickok DE, Monsen ER. Absorption of dietary and supplemental folate in women with prior pregnancies with neural tube defects and controls. J Am Coll Nutr. 1998; 17(6): 625-630. PubMed PMID: 9853543.**
- **Anderson CA, Beresford SA, McLerran D, Lampe JW, Deeb S, Feng Z, Motulsky AG. Response of serum and red blood cell folate concentrations to folic acid supplementation depends on methylenetetrahydrofolate reductase C677T genotype: results from a crossover trial. Mol Nutr Food Res. 2013;57(4):637-44. PMCID: PMC4132693.**

Women's health: As an investigator with the Women's Health Initiative and part of the leadership team in the early 2000s, I contributed to various seminal papers including the major trial finding regarding the overall adverse effects of hormone therapy in postmenopausal women, and one of the three main papers reporting the results of the dietary modification trial. A few of these are included here:

- Writing Group for the Women's Health Initiative Investigators (2002). Risks and Benefits of Estrogen plus Progestin in Healthy Postmenopausal Women: Principal results from the Women's Health Initiative Randomized Controlled Trial. JAMA 288 (3):321-333
- Howard B, Manson JE, Stefanick ML**, Beresford SAA,** Frank G, Jones B, Rodabough RJ, Snetselaar L, Thomson C, Tinker L, Vitolins M, Prentice R. (2006) Low-Fat Dietary Pattern and Weight Change Over 7 Years – the Women's Health Initiative Dietary Modification Trial JAMA 295:39-49.
- **Beresford SAA**, Johnson KC, Ritenbaugh C, et al. Low-Fat Dietary Pattern and Risk of Colorectal Cancer: The Women's Health Initiative Randomized Controlled Dietary Modification Trial. JAMA 2006;295:643-54
- Assaf AR, **Beresford SA**, Risica PM, Aragaki A, Brunner RL, Bowen DJ, Naughton M, Rosal MC, Snetselaar L, Wenger N. "Low-Fat Dietary Pattern Intervention and Health-Related Quality Of Life: The Women's Health Initiative Randomized Controlled Dietary Modification Trial." J Acad Nutr Diet. 2016;116(2):259-271.

Dietary behavior intervention. I have designed, directed or guided numerous group and individual randomized trials of dietary intervention, with a focus on those with socioeconomic disadvantage. Many of the studies used the worksite as the unit of randomization and of intervention, and long term changes were observed in fruit and vegetable intake:

- **Beresford SAA**, Curry S, Kristal A, Lazovich D, Feng A, Wagner EH A dietary intervention in primary care practice: The Eating Patterns Study Am J Publ Hlth 1997; 87:610-616.

- **Beresford SAA**, Thompson B, Feng Z, Christianson A, McLerran D, Patrick DL Seattle 5 a Day worksite program to increase fruit and vegetable consumption. Prev Med 2001;32 230-238.
- **Beresford SA**, Thompson B, Bishop S, Macintyre J, McLerran D, Yasui Y. Long-term fruit and vegetable change in worksites: Seattle 5 a Day follow-up. Am J Health Behav. 2010; 34(6):707-20.
- Kong A, **Beresford SA**, Alfano CM, Foster-Schubert KE, Neuhouser ML, Johnson DB, Duggan C, Wang CY, Xiao L, Bain CE, McTiernan A. Associations between Snacking and Weight Loss and Nutrient Intake among Postmenopausal Overweight to Obese Women in a Dietary Weight-Loss Intervention. J Am Diet Assoc. 2011; 111(12):1898-903. [PMC 3242470].

Obesity prevention. Building on randomized controlled studies in worksites on fruits and vegetables, my work expanded to include physical activity intervention as well as dietary intervention in the general population, to reduce the risk of obesity. The study of upstream factors of the nutrition environment and food policy is the current area of focus of my work.

- Harris JR, Hannon PA, **Beresford SA**, Linnan LA, McLellan DL Health promotion in smaller workplaces in the United States. Annu Rev Public Health 2014;35:327-342 [PMC in progress]
- Bowen D, Barrington WE, **Beresford SAA**. Identifying the effects of environmental and policy change interventions on healthy eating. Ann Rev of Public Health 2015;36:289-306 [PMC in progress]
- Barrington WE, **Beresford SA**, Koepsell TD, Duncan GE, Moudon AV. Worksite Neighborhood and Obesogenic Behaviors: Findings Among Employees in the Promoting Activity and Changes in Eating (PACE) Trial. Am J Prev Med. 2015; 48(1): 31-41 [PMC in progress]
- Hastert TA, Ruterbusch JJ, **Beresford SA**, Sheppard L, White E. "Contribution of health behaviors to the association between area-level socioeconomic status and cancer mortality." Soc Sci Med. 2016 Jan;148:52-8

Methods Development. Endpoints of behavioral change interventions are typically behavioral change. Measurement issues surrounding assessment of dietary behavior have continued to be a focus of my work, because of the importance of making inference from imperfect tools in the context of general population research. Some representative publications include:

- Patrick D, **Beresford S**, Ehreth J, Diehr P, Picciano J, Durham M, Hecht J, Grembowski D. Interpreting excess mortality in a prevention trial for older adults. International Journal of Epidemiology 1995;24(Suppl 1):S27-S33. PMID: 7558547.
- Neuhouser ML, Tinker L, Shaw PA, Schoeller D, Bingham SA, Horn LV, **Beresford SA**, Caan B, Thomson C, Satterfield S, Kuller L, Heiss G, Smit E, Sarto G, Ockene J, Stefanick ML, Assaf A, Runswick S, Prentice RL. Use of Recovery Biomarkers to Calibrate Nutrient Consumption Self-Reports in the Women's Health Initiative. Am J Epidemiol. 2008; 167(10):1247-59
- Prentice RL, Huang Y, Tinker L, **Beresford SAA**, Lampe JW, Neuhouser ML "Statistical Aspects of the Use of Biomarkers in Nutritional Epidemiology Research" Statistics in Biosciences 2009; 1(1): 112–123. PMC2762210
- Prentice RL, Shaw PA, Bingham SA, **Beresford SA**, Caan B, Neuhouser ML, Patterson RE, Stefanick ML, Satterfield S, Thomson CA, Snetselaar L, Thomas A, Tinker LF. Biomarker-calibrated Energy and Protein Consumption and Increased Cancer Risk Among Postmenopausal Women. Am J Epidemiol. 2009;169(8):977-989. [PMC2732977]