

Final Progress Report for Research Projects Funded by Health Research Grants

Instructions: Please complete all of the items as instructed. Do not delete instructions. Do not leave any items blank; responses must be provided for all items. If your response to an item is “None”, please specify “None” as your response. “Not applicable” is not an acceptable response for any of the items. There is no limit to the length of your response to any question. Responses should be single-spaced, no smaller than 12-point type. The report **must be completed using MS Word**. Submitted reports must be Word documents; they should not be converted to pdf format. Questions? Contact Health Research Program staff at 717-783-2548.

1. **Grantee Institution:** Albert Einstein Healthcare Network
2. **Reporting Period (start and end date of grant award period):** 1/1/2010 – 12/31/2012
3. **Grant Contact Person (First Name, M.I., Last Name, Degrees):** Mary Klein, PhD
4. **Grant Contact Person’s Telephone Number:** 215-456-7216
5. **Grant SAP Number:** 4100050886
6. **Project Number and Title of Research Project:** 1 – A Feasibility Study of Fruit and Vegetable Consumption in Low Income Communities
7. **Start and End Date of Research Project:** 1/1/2010 – 5/1/2012
8. **Name of Principal Investigator for the Research Project:** Etienne Phipps, PhD
9. **Research Project Expenses.**

9(A) Please provide the total amount of health research grant funds spent on this project for the entire duration of the grant, including indirect costs and any interest earned that was spent:

\$41,750

9(B) Provide the last names (include first initial if multiple individuals with the same last name are listed) of **all** persons who worked on this research project and were supported with health research funds. Include position titles (Principal Investigator, Graduate Assistant, Post-doctoral Fellow, etc.), percent of effort on project and total health research funds expended for the position. For multiple year projects, if percent of effort varied from year to year, report in the % of Effort column the effort by year 1, 2, 3, etc. of the project (x% Yr 1; z% Yr 2-3).

Last Name	Position Title	% of Effort on Project	Cost
Phipps, Etienne J.	Principal Investigator	22%	\$8,125
Braitman, Leonard	Statistician	22%	\$2,915
Stites, Shana	Data Manager	22%	\$4,938
Kulick, Erin	Research Manager	22%	\$2150
Carlson, Jordan	Research Assistant	22%	\$3500

9(C) Provide the names of **all** persons who worked on this research project, but who *were not* supported with health research funds. Include position titles (Research Assistant, Administrative Assistant, etc.) and percent of effort on project. For multiple year projects, if percent of effort varied from year to year, report in the % of Effort column the effort by year 1, 2, 3, etc. of the project (x% Yr 1; z% Yr 2-3).

Last Name	Position Title	% of Effort on Project
Esprit	Administrator	1%

9(D) Provide a list of **all** scientific equipment purchased as part of this research grant, a short description of the value (benefit) derived by the institution from this equipment, and the cost of the equipment.

Type of Scientific Equipment	Value Derived	Cost
None		

10. Co-funding of Research Project during Health Research Grant Award Period. Did this research project receive funding from any other source during the project period when it was supported by the health research grant?

Yes _____ No X _____

If yes, please indicate the source and amount of other funds:

11. Leveraging of Additional Funds

11(A) As a result of the health research funds provided for this research project, were you able to apply for and/or obtain funding from other sources to continue or expand the research?

Yes X _____ No _____

If yes, please list the applications submitted (column A), the funding agency (National Institutes of Health—NIH, or other source in column B), the month and year when the application was submitted (column C), and the amount of funds requested (column D). If you have received a notice that the grant will be funded, please indicate the amount of funds to be awarded (column E). If the grant was not funded, insert “not funded” in column E.

Do not include funding from your own institution or from CURE (tobacco settlement funds). Do not include grants submitted prior to the start date of the grant as shown in Question 2. If you list grants submitted within 1-6 months of the start date of this grant, add a statement below the table indicating how the data/results from this project were used to secure that grant.

A. Title of research project on grant application	B. Funding agency (check those that apply)	C. Month and Year Submitted	D. Amount of funds requested:	E. Amount of funds to be awarded:
Examining rewards-based incentives for fruit and vegetable purchases by lower income families	<input type="checkbox"/> NIH <input type="checkbox"/> Other federal (specify:____) <input checked="" type="checkbox"/> Nonfederal source (specify: Robert Wood Johnson Foundation (RWJF))	09/2010	\$168,489	\$168,489
Shifting Sugar Sweetened Beverage (SSB) Purchases with Financial Incentives	<input type="checkbox"/> NIH <input type="checkbox"/> Other federal (specify:____) <input checked="" type="checkbox"/> Nonfederal source (specify: __RWJF__)	05/2012	\$165,513	\$Not funded
Food Purchasing Practices of Family Caregivers in Philadelphia	<input type="checkbox"/> NIH <input type="checkbox"/> Other federal (specify:____) <input checked="" type="checkbox"/> Nonfederal : University of Pennsylvania (Subcontract) under African American Collaborative Obesity Research Network (AACORN) grant from the Robert Wood Johnson Foundation)	03/2012	\$20,000	\$20,000

11(B) Are you planning to apply for additional funding in the future to continue or expand the research?

Yes X No _____

If yes, please describe your plans:

We have been asked by the program staff from the City of Philadelphia Department of Public Health (Get Healthy Philly Program) to partner with them on a grant application to Robert Wood Johnson Foundation to evaluate a city-wide supermarket program to increase sales of healthy foods. We plan to apply for additional funding as part of the African American Collaborative Research Network as well. Based on our experience with the methodologies used in this feasibility study, we have expanded our research healthy eating to include work site research. (Funding for our work site research has been obtained from Kynett Foundation and Albert Einstein Society). We plan to continue to build this area as well.

12. Future of Research Project. What are the future plans for this research project?

We are currently engaged in additional analysis of our data as part of an investigation into purchase of obesity preventing and obesity promoting foods by lower income households.

13. New Investigator Training and Development. Did students participate in project supported internships or graduate or post-graduate training for at least one semester or one summer?

Yes _____ No X

If yes, how many students? Please specify in the tables below:

	Undergraduate	Masters	Pre-doc	Post-doc
Male				
Female				
Unknown				
Total				

	Undergraduate	Masters	Pre-doc	Post-doc
Hispanic				
Non-Hispanic				
Unknown				
Total				

	Undergraduate	Masters	Pre-doc	Post-doc
White				
Black				
Asian				
Other				
Unknown				
Total				

14. Recruitment of Out-of-State Researchers. Did you bring researchers into Pennsylvania to carry out this research project?

Yes _____ No X _____

If yes, please list the name and degree of each researcher and his/her previous affiliation:

15. Impact on Research Capacity and Quality. Did the health research project enhance the quality and/or capacity of research at your institution?

Yes X _____ No _____

If yes, describe how improvements in infrastructure, the addition of new investigators, and other resources have led to more and better research.

This project strengthened the research skills of the new junior investigators as well as developed the skills of the senior investigators. As a result, we have been able to design additional research studies, and bring in extramural funds, contributing to developing the quality and research capacity at our institution.

16. Collaboration, business and community involvement.

16(A) Did the health research funds lead to collaboration with research partners outside of your institution (e.g., entire university, entire hospital system)?

Yes X _____ No _____

If yes, please describe the collaborations:

We have an active collaboration with the University of Pennsylvania (Center for Clinical Epidemiology and Biostatistics) and Arcadia University as a result of this project.

16(B) Did the research project result in commercial development of any research products?

Yes _____ No X _____

If yes, please describe commercial development activities that resulted from the research project:

16(C) Did the research lead to new involvement with the community?

Yes X _____ No _____

If yes, please describe involvement with community groups that resulted from the research project:

As a result of this we have been consulting with community organizations that are involved in increasing access to healthy foods in low income communities. We are involved in helping them to design outcomes evaluations. They include: Philabundance, Greener Partners, the Jewish Community Center (Philadelphia) – Food Pantry, Seeds for Learning, and the City of Philadelphia, Department of Public Health.

17. Progress in Achieving Research Goals, Objectives and Aims.

List the project goals, objectives and specific aims (as contained in the grant agreement). Summarize the progress made in achieving these goals, objectives and aims for the period that the project was funded (i.e., from project start date through end date). Indicate whether or not each goal/objective/aim was achieved; if something was not achieved, note the reasons why. Describe the methods used. If changes were made to the research goals/objectives/aims, methods, design or timeline since the original grant application was submitted, please describe the changes. Provide detailed results of the project. Include evidence of the data that was generated and analyzed, and provide tables, graphs, and figures of the data. List published abstracts, poster presentations and scientific meeting presentations at the end of the summary of progress; peer-reviewed publications should be listed under item 20.

This response should be a DETAILED report of the methods and findings. It is not sufficient to state that the work was completed. Insufficient information may result in an unfavorable performance review, which may jeopardize future funding. If research findings are pending publication you must still include enough detail for the expert peer reviewers to evaluate the progress during the course of the project.

Health research grants funded under the Tobacco Settlement Act will be evaluated via a performance review by an expert panel of researchers and clinicians who will assess project work using this Final Progress Report, all project Annual Reports and the project's strategic plan. After the final performance review of each project is complete, approximately 12-16 months after the end of the grant, this Final Progress Report, as well as the Final Performance Review Report containing the comments of the expert review panel, and the grantee's written response to the Final Performance Review Report, will be posted on the CURE Web site.

There is no limit to the length of your response. Responses must be single-spaced below, no smaller than 12-point type. If you cut and paste text from a publication, be sure symbols print properly, e.g., the Greek symbol for alpha (α) and beta (β) should not print as boxes (□) and include the appropriate citation(s). DO NOT DELETE THESE INSTRUCTIONS.

Project Aims:

1. To collect pilot data on purchase and consumption of fruits and vegetables in a low-income community and assess the feasibility of our research methods. Specifically we will assess:

- a) Our ability to recruit and retain 15-25 adult grocery store shoppers for the pilot study.
- b) The use of frequent shopper cards as a reliable method of recording food purchases for research purposes based on electronically transferred supermarket data to our research office.
- c) The feasibility of collecting self-report food consumption data and its relationship to purchase data.

We achieved these goals. Because of the interest in the study, we were able to recruit 30 participants for the study. We were able to work with the data analyst at the study store to successfully develop and implement data transfer procedures and analyze these data for research purposes. In our analysis, we were able to integrate individual and store level data and demonstrate our results in accepted manuscripts for publication in peer reviewed journals.

2. To examine which individual and household characteristics are independent predictors of greater purchases of fruits and vegetables (e.g., education, income, gender and SES of the primary shopper, household characteristics, zip code and enrollment in the Supplemental Nutritional Assistance Program (SNAP)).

This aim was achieved in our analytic work which we describe in detail under results.

3. To assess whether incentives in the form of fruit and vegetable coupons can be used as an intervention to encourage family members to buy more healthy foods.

We were able to investigate this aim in our analysis. In our results section, we provide details about this important issue.

The study used a three phase design: baseline supermarket purchase history from enrollment/consent back to a minimum of four weeks prior; a four week incentive period during which time study coupons to purchase fruit and vegetables and healthy eating materials were provided; and a four week follow-up period (post intervention). The primary outcome was number of servings of fresh fruit and vegetables purchased per week. The hypothesis was that participants would purchase more fruit and vegetables during the intervention phase compared with baseline. Supermarket purchases were tracked from participants' loyalty cards. Surveys were conducted at the beginning and at the end of the trial. Baseline surveys were used to obtain information about the individual and household, and availability of fruit and vegetables in the home. Baseline surveys were conducted in-person and via telephone. Follow-up surveys obtained participant feedback about the study experience and re-confirmed specific information provided at baseline (e.g., household size). Follow-up surveys were conducted via telephone or mailed to participants who were unreachable by telephone.

This research project resulted in two manuscripts being accepted for publication in peer-reviewed journals. The statistical analyses for the study were quite complex. Each publication focused on a different study question (predictors of purchases and evaluating the impact of the intervention).

We describe the methods and results addressing the aim of identifying predictors associated greater purchases below.

Methods: (Aim 2)

Because household shopping history data for participants with different dates of study entry were retrieved back to a fixed date (April 1, 2010), statistical methods were used that accommodated households' different study times. Bivariate and multivariable Poisson regressions with a log link and robust standard errors were used to investigate which household composition and resource characteristics were associated with the study outcomes. Robust standard errors adjusted for both the clustering of data for different transactions from the same household and for the overdispersion of the outcomes (variance greater than the mean). Variables either with $p < 0.05$ in bivariate analyses or necessary for control of potential confounding were included in the multivariable models. All multivariable results were expressed as incidence rate ratios (IRRs), 95% confidence intervals (95%CI) and p values. Using those multivariable models, separate post-hoc statistical tests assessed if the study outcomes were greater in households with more children after controlling for household size. A value of 0.05 was used as the criterion for statistical significance. Because of the exploratory nature of the data analyses, they were not corrected for multiple comparisons. Improper (i.e., over-) adjustment for multiple comparisons can lead to type 2 errors. To reduce the likelihood of type 1 errors, robust standard errors were used in the multivariable models; this generally increases p values and widens confidence intervals. Statistical analyses were performed using Stata version 11.0 (College Station, TX), SAS version 8.0 (SAS Institute Inc, Cary, NC), and PASW version 17.0 (Chicago, 2010).

Results

Twenty nine participant households were enrolled in the study. The primary shoppers for the household had a mean age of 42 (SD 14.3) years and were mostly female (93%) and African American (86%). The mean household size was 4.4 persons and the mean number of children in the household was 2.3. Most participants (72%) reported household incomes of \$25,000 or less. Forty eight percent were currently enrolled in the Supplemental Nutritional Assistance Program [SNAP] and 31% were enrolled in Women Infant and Children [WIC].

Fresh Fruit and Vegetable Purchases: Two hundred and nine store transactions were extracted from the study market's point-of-sale system using the participants' loyalty card numbers as unique identifiers. Three of the 30 households (10%, 95%CI 2% to 27%) bought no fresh fruit or vegetables during the entire study period. Servings of fresh fruit and vegetables purchased per week ranged from 0 to 21.2, with a mean of 4.0 ± 5.1 and a median of 2.9. There was great variability in weekly expenditures for fresh fruit and vegetables (range 0 to \$11.88). But the majority of households ($16/30 = 53\%$) spent on average less than one dollar per week

Covariates Not Associated With Either Study Outcome: In bivariate analyses, neither the number of servings nor expenditures for fresh fruit and vegetables were associated with any of the

following: living at or below 100% of poverty, household income, number of adults in the household, enrollment in WIC or SNAP, or with the age or education of the primary shopper (all $p \geq 0.08$, Table 2).

Number of Servings of Fresh Fruit and Vegetables: The average number of servings of fresh fruit and vegetables purchased per week was higher in families with more children and in families with wider age ranges of children in the household. In bivariate analysis, the average number of servings of fresh produce purchased per week was 60% higher (IRR=1.6, $p=0.008$, Table 2) per each additional child. The average number of servings of fresh fruit and vegetables purchased per week was 10% higher (IRR=1.1, $p=0.02$) per each additional year in the age range of the children.

In a multivariable analysis, the average number of fresh produce servings purchased per week was 50% higher (IRR=1.5, 95% CI 1.1 to 2.0, $p=0.008$) per each additional child, controlling for the number of adults in the household and the age range of children in the household. The average number of servings of fresh produce purchased per week was 10% higher (IRR= 1.10, 95% CI 1.001 to 1.16, $p=0.045$) per each additional year in the age range of the children, controlling for the number of those children and the number of adults living in the household.

Our second set of analyses focused on the impact of the intervention on purchases.

The methods and results are described below.

Methods (Aim 3)

To assess whether purchases of fresh fruit and fresh vegetables increased from the baseline to the intervention period, we compared the average number of servings per week bought by the households that had store transactions during both periods. Because the differences were not always normally distributed, we used a robust modification of a paired t test and computed bootstrap 95% confidence intervals [95% CI]. Specifically, they were bias-corrected 95% CIs constructed using 1000 bootstrap re-samples. To assess whether there was any maintenance after the incentive was withdrawn, similar analyses were performed comparing the follow-up to the baseline period.

Descriptive statistics were used to summarize data from the baseline and follow-up surveys. Responses to open-ended survey questions were first read separately by two members of the research team (EJP, SLW) and then categorized and coded. Results were discussed prior to finalizing categories of responses.

All statistical tests were two sided and p values less than 0.05 were considered statistically significant. Statistical analyses were performed using Stata version 11.0 (College Station, TX), SAS version 8.0 (SAS Institute Inc, Cary, NC), and SPSS/PASW version 17.0 (Chicago, 2010).

Results

Fresh fruit purchases in the intervention and baseline periods. The 25 households that shopped during the intervention period purchased an average of 6.4 servings of fresh fruit per week compared to 1.7 servings during baseline. The average weekly purchases of fresh fruit increased

by 4.7 (95% CI, 1.9 to 8.1) from the baseline to the intervention period. During the entire study period, bananas, strawberries, grapes, apples and oranges (in that order) were the most frequently purchased fruit (data not shown).

Fresh vegetable purchases in the intervention and baseline periods. The 25 households (that shopped during the intervention period) bought an average of 4.5 servings of fresh vegetables per week during that period and 2.7 servings during baseline. That increase of 1.8 servings (95% CI, -0.8 to 4.0) did not reach statistical significance. Onions, tomatoes, bell peppers, carrots, and bagged salad kits, in that order, were the most frequently purchased vegetables during the entire study period.

Fresh produce purchases in the follow-up period. The 23 households that shopped during the follow-up period bought an average of 4.1 servings of fresh fruit per week compared to 2.0 servings during baseline. Accordingly, those households averaged 2.1 (95% CI, 0.03 to 4.5) more fresh fruit serving purchases per week during follow-up than in baseline. The average number of servings of fresh vegetables in both the baseline and follow-up periods was approximately 1.9 per week.

Participant Feedback. To obtain feedback from participants, a total of 56 calls and 13 mailings were made between August 19 and September 24, 2010. This resulted in the completion of 22 of 29 surveys (response rate of 76%). Most participants (90%) agreed or strongly agreed that being part of the study positively influenced their purchasing of fruits and vegetables. The main reasons provided by respondents were that: 1) they were able to buy healthier fresh produce and that 2) the financial assistance of the coupons allowed for more choice in shopping. Upon elaboration, participants reported that they were able to: switch from buying canned fruit and vegetables to fresh, try new [fresh] fruit and vegetables, or be more selective in buying fresh fruit and vegetables. Participants were asked if they had any problems using the coupons during the study period. The most frequently mentioned problems with coupon use were that the participant: 1) lost or forgot to bring the coupons to the store, and 2) was not able to use the coupon within the designated week (each response mentioned by at least 50% of respondents). Store-related problems such as the supermarket personnel not knowing how to accept the coupons as payment were mentioned by two respondents.

Poster Presentations:

Etienne Phipps, PhD, Shana Stites, MA, MS, Samantha Wallace, MPH, Leonard E. Braitman, PhD, A Pilot Study on the Use of Incentives to Increase Fruit and Vegetable Consumption in Low Income Households. Research Recognition Day, Albert Einstein Healthcare Network, May 2011.

Etienne Phipps, PhD, Samantha Wallace, MPH, Shana Stites, MA, MS, Brook Singletary, MSW, Saul Axelrod, PhD, BCBA-D, Leonard E. Braitman, PhD. Social Validity of Coupon Incentives to Drive Increased Purchase and Consumption of Fruits and Vegetables among Lower Income Households. Annual Meeting of the American Public Health Association, November, 2011.

18. Extent of Clinical Activities Initiated and Completed. Items 18(A) and 18(B) should be completed for all research projects. If the project was restricted to secondary analysis of clinical data or data analysis of clinical research, then responses to 18(A) and 18(B) should be “No.”

18(A) Did you initiate a study that involved the testing of treatment, prevention or diagnostic procedures on human subjects?

Yes
 No

18(B) Did you complete a study that involved the testing of treatment, prevention or diagnostic procedures on human subjects?

Yes
 No

If “Yes” to either 18(A) or 18(B), items 18(C) – (F) must also be completed. (Do NOT complete 18(C-F) if 18(A) and 18(B) are both “No.”)

18(C) How many hospital and health care professionals were involved in the research project?

_____ Number of hospital and health care professionals involved in the research project

18(D) How many subjects were included in the study compared to targeted goals?

15-25 Number of subjects originally targeted to be included in the study
30 Number of subjects enrolled in the study

Note: Studies that fall dramatically short on recruitment are encouraged to provide the details of their recruitment efforts in Item 17, Progress in Achieving Research Goals, Objectives and Aims. For example, the number of eligible subjects approached, the number that refused to participate and the reasons for refusal. Without this information it is difficult to discern whether eligibility criteria were too restrictive or the study simply did not appeal to subjects.

18(E) How many subjects were enrolled in the study by gender, ethnicity and race?

Gender:

3 Males
27 Females
_____ Unknown

Ethnicity:

3 Latinos or Hispanics
27 Not Latinos or Hispanics
_____ Unknown

Race:

American Indian or Alaska Native

Asian

Blacks or African American

Native Hawaiian or Other Pacific Islander

White

Other, specify: Self-reported as Latino and were reported as such

Unknown

18(F) Where was the research study conducted? (List the county where the research study was conducted. If the treatment, prevention and diagnostic tests were offered in more than one county, list all of the counties where the research study was conducted.)

Philadelphia County.

19. Human Embryonic Stem Cell Research. Item 19(A) should be completed for all research projects. If the research project involved human embryonic stem cells, items 19(B) and 19(C) must also be completed.

19(A) Did this project involve, in any capacity, human embryonic stem cells?

Yes

No

19(B) Were these stem cell lines NIH-approved lines that were derived outside of Pennsylvania?

Yes

No

19(C) Please describe how this project involved human embryonic stem cells:

20. Articles Submitted to Peer-Reviewed Publications.

20(A) Identify all publications that resulted from the research performed during the funding period and that have been submitted to peer-reviewed publications. Do not list journal abstracts or presentations at professional meetings; abstract and meeting presentations should be listed at the end of item 17. **Include only those publications that acknowledge the Pennsylvania Department of Health as a funding source** (as required in the grant agreement). List the title of the journal article, the authors, the name of the peer-reviewed publication, the month and year when it was submitted, and the status of publication (submitted for publication, accepted for publication or published.). Submit an electronic copy of each publication or paper submitted for publication, listed in the table, in a PDF version 5.0.5 (or greater) format, 1,200 dpi. Filenames for each publication should include

the number of the research project, the last name of the PI, the number of the publication and an abbreviated research project title. For example, if you submit two publications for PI Smith for the “Cognition and MRI in Older Adults” research project (Project 1), and two publications for PI Zhang for the “Lung Cancer” research project (Project 3), the filenames should be:

- Project 1 – Smith – Publication 1 – Cognition and MRI
- Project 1 – Smith – Publication 2 – Cognition and MRI
- Project 3 – Zhang – Publication 1 – Lung Cancer
- Project 3 – Zhang – Publication 2 – Lung Cancer

If the publication is not available electronically, provide 5 paper copies of the publication.

Note: The grant agreement requires that recipients acknowledge the Pennsylvania Department of Health funding in all publications. Please ensure that all publications listed acknowledge the Department of Health funding. If a publication does not acknowledge the funding from the Commonwealth, do not list the publication.

Title of Journal Article:	Authors:	Name of Peer-reviewed Publication:	Month and Year Submitted:	Publication Status (check appropriate box below):
1. Fresh Fruit and Vegetable Purchases in an Urban Supermarket by Low-income Households.	Phipps EJ, Stites SD, Wallace SL, Braitman LE	Journal of Nutrition Education and Behavior	06/2011	<input type="checkbox"/> Submitted <input type="checkbox"/> Accepted <input checked="" type="checkbox"/> Published
2. The use of financial incentives to increase fresh fruit and vegetable purchases in lower income households: Results of a pilot study.	Phipps E, Braitman L, Stites S, Wallace SL, Singletary S, Hunt L.	Journal of Health Care for the Poor and Underserved	02/2012	<input type="checkbox"/> Submitted <input checked="" type="checkbox"/> Accepted <input type="checkbox"/> Published

20(B) Based on this project, are you planning to submit articles to peer-reviewed publications in the future?

Yes X No _____

If yes, please describe your plans:

Currently doing additional analysis as part of a collaboration with University of Pennsylvania researchers that includes data collected from this study.

21. Changes in Outcome, Impact and Effectiveness Attributable to the Research Project.

Describe the outcome, impact, and effectiveness of the research project by summarizing its

impact on the incidence of disease, death from disease, stage of disease at time of diagnosis, or other relevant measures of outcome, impact or effectiveness of the research project. If there were no changes, insert “None”; do not use “Not applicable.” Responses must be single-spaced below, and no smaller than 12-point type. **DO NOT DELETE THESE INSTRUCTIONS.** There is no limit to the length of your response.

This was a feasibility study focused on increasing purchase of fruit and vegetables and the use of financial incentives to promote purchase of these food groups. Impact of the project from the participant perspective revealed that the overwhelming majority (90%) agreed or strongly agreed that their purchasing of fruits and vegetables was positively influenced by study participation. They bought healthier fresh produce and that was facilitated by the financial incentive. Participants were able to switch from buying canned fruit and vegetables to fresh, try new [fresh] fruit and vegetables, and being more selective in buying fresh fruit and vegetables.

Another measure of impact is the change in the amounts purchased from baseline to intervention. Here we see both fruit and vegetables increased as a result of the intervention. This is an important measure of impact. We reported that those increases were not, however sustained once the incentive was stopped. The research project did demonstrate the potential effectiveness of financial incentives to change or improve purchase patterns in lower income households and the need to study longer term incentive use to improve longer term results.

22. Major Discoveries, New Drugs, and New Approaches for Prevention Diagnosis and Treatment. Describe major discoveries, new drugs, and new approaches for prevention, diagnosis and treatment that are attributable to the completed research project. If there were no major discoveries, drugs or approaches, insert “None”; do not use “Not applicable.” Responses must be single-spaced below, and no smaller than 12-point type. **DO NOT DELETE THESE INSTRUCTIONS.** There is no limit to the length of your response.

None

23. Inventions, Patents and Commercial Development Opportunities.

23(A) Were any inventions, which may be patentable or otherwise protectable under Title 35 of the United States Code, conceived or first actually reduced to practice in the performance of work under this health research grant? Yes _____ No X

If “Yes” to 23(A), complete items a – g below for each invention. (Do NOT complete items a - g if 23(A) is “No.”)

a. Title of Invention:

b. Name of Inventor(s):

c. Technical Description of Invention (describe nature, purpose, operation and physical, chemical, biological or electrical characteristics of the invention):

d. Was a patent filed for the invention conceived or first actually reduced to practice in the performance of work under this health research grant?

Yes_____ No____

If yes, indicate date patent was filed:

e. Was a patent issued for the invention conceived or first actually reduced to practice in the performance of work under this health research grant?

Yes_____ No____

If yes, indicate number of patent, title and date issued:

Patent number:

Title of patent:

Date issued:

f. Were any licenses granted for the patent obtained as a result of work performed under this health research grant? Yes_____ No____

If yes, how many licenses were granted?_____

g. Were any commercial development activities taken to develop the invention into a commercial product or service for manufacture or sale? Yes___ No____

If yes, describe the commercial development activities:

23(B) Based on the results of this project, are you planning to file for any licenses or patents, or undertake any commercial development opportunities in the future?

Yes_____ No__X_____

If yes, please describe your plans:

24. Key Investigator Qualifications. Briefly describe the education, research interests and experience and professional commitments of the Principal Investigator and all other key investigators. In place of narrative you may insert the NIH biosketch form here; however, please limit each biosketch to 1-2 pages. *For Nonformula grants only – include information for only those key investigators whose biosketches were not included in the original grant application.*

BIOGRAPHICAL SKETCH

NAME Etienne Juarez Phipps	POSITION TITLE Associate Professor of Medicine Director, Einstein Center for Urban Health Policy and Research Director, Medical Ethics Consultation Service
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EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of California, Berkeley, CA	B.A.	1973	Anthropology
University of Madrid, Madrid, Spain		1972, 1974	Cultural Anthropology
Philadelphia Child Guidance, Philadelphia, PA	Certificate	1979	Marital/Family Therapy
University of Pennsylvania, Philadelphia, PA	Ph.D.	1980	Folklore/Anthropology

A. Positions and Honors

- 1981-1987 Instructor, University of Medicine and Dentistry of New Jersey, Stratford, NJ
Assistant Professor, Medicine, Temple University School of Medicine, Philadelphia, PA
Director, Medical Ethics and Behavioral Sciences, Albert Einstein Healthcare Network
- 1987-1996 (AEHN), Philadelphia, PA
- 1996-1999 Associate Professor, Medicine, Temple University School of Medicine, Philadelphia, PA
Director, Ethics and Health Policy Initiatives, AEHN, Philadelphia, PA
- 2000-Present Associate Professor, Medicine, Thomas Jefferson University/Jefferson Health System, Philadelphia, PA
- 2001-Present Director, Einstein Center for Urban Health Policy and Research, AEHN, Philadelphia, PA
Director, Medical Ethics Consultation Service, AEHN, Philadelphia, PA
Adjunct Scientist, Moss Rehabilitation Research Institute, Philadelphia, PA
- 2010-Present Population Health Associate, Jefferson School of Population Health, Philadelphia, PA.

Adhoc Reviewer, The Gerontologist, Annals of Oncology, Journal of Palliative Medicine, Journal of Palliative Care, Social Science and Medicine, Journal of Health Care for the Poor and Underserved, Journal of the National Medical Association, Psycho-Oncology, Clinical Medicine: Oncology, Journal of Psychosomatic Research, International Journal of Behavioral Medicine, British Journal of Cancer, Journal of Immigrant and Minority Health, Journal of Nutrition Education and Behavior, Preventing Chronic Disease
Editorial Board, Jefferson Health Systems Health Policy Newsletter

B. Selected Publications (from 90)

True G, **Phipps E**, Braitman L, Harralson T, Harris D, Tester W. Treatment Preferences and Advance Care Planning at End of Life: The Role of Ethnicity and Spiritual Coping in Cancer Patients. *American Journal of Behavioral Medicine*.

Phipps E, Braitman L. Family Caregiver Satisfaction with Care at End of Life: Report from the Cultural Variations Study (CVAS). *American Journal of Hospice and Medicine*: 21(5):340-343; 2004.

Phipps E, Harris D, Braitman LE, Tester W, Madison-Thompson N, True G. Who Enrolls in Observational End of Life Research? Report from the Cultural Variations in Approaches to End of Life Study (CVAS). *Journal of Palliative Medicine* 8(1):115-119:2005.

True G, **Phipps E**, Braitman L, Harralson T, Harris D, Tester W. Treatment preferences and advance care planning at end of life: the role of ethnicity and spiritual coping in cancer patients. *Ann Behav Med.* 2005 Oct;30(2):174-9.

Phipps E., Quinn J, Madison Thompson N, Ackler J. Pomerantz S, Tester W. Patient and Industry Barriers to Pain Control in Low Income Cancer Patients. *Issues in Clinical Oncology* 2005: November/December: 36-39.

Phipps, E., Braitman L, Stites S, Leighton, J. Quality of Life and Symptom Attribution to Colon Cancer in Long Term Colon Cancer Survivors. *Journal of Evaluation in Clinical Practice* 2008: 14(2): 254-258.

Phipps E, Madison N, Pomerantz S, Klein M. Identifying and Assessing Interests and Concerns of Priority Populations for Work-Site Programs to Promote Physical Activity. *Health Promotion and Practice* **2008**:

first published online on June 6, 2008 on line, in press.

Phipps E, Madison N, Polansky M, Tester W. The Importance of Patient Participation in Second-Line Chemotherapy Decisions: Perspectives of African American Patients. *Journal of the National Medical Association* 2008:100(12):1434-1441.

Kumanyika S, Fassbender J, **Phipps E**, Tan-Torres S, Localio R , Morales K, Sarwer D, Harralson T, Allison K, Wesby L, Kessler R, Tsai, A, Wadden, T. Design, Recruitment and Start Up of a Primary Care Weight Loss Trial Targeting African American and Hispanic Adults. *Contemporary Clinical Trials* (2010), doi:10.1016/j.cct.2010.11.002.

Kumanyika, S, Fassbender J, Sarwer D, **Phipps E**, Allison K, Localio R, Morales K, , Wesby L, Harralson T, , Kessler R, Tan-Torres, S, , Tsai, A, Wadden, T. One-Year Results of the Think Health! Study of Weight Management in Primary Care Practices. *Obesity* online publication 3 November 2011. doi:10.1038/oby.2011.329

Phipps E, Turkel M, Mackenzie E, Urrea C. "He thought the lady in the door was the lady in the window": A qualitative study of patient identification practices. *Joint Commission of Patient Safety and Quality* March 2012 38(3):127-134.

Phipps, E, Stites S, Wallace S, Braitman, L. Fresh fruit and vegetable purchases in an urban supermarket by low income households. Accepted for publication May 4, 2012 *Journal of Nutrition Education and Behavior*.

Phipps, E, Wallace S, Stites S, Uplinger, N, Singletary S, Brook, Hunt, L, Axelrod, S, Glanz, K, Braitman, LE. Using rewards based incentives to increase purchase of fruit and vegetables in lower income households: design and startup of a randomized trial. *Public Health Nutrition*, Available on CJO doi:10.1017/S1368980012004934

Phipps, EJ, Braitman, LE, Stites, SD, Wallace SL, Singletary, SB, Hunt, LH. The use of financial incentives to increase fresh fruit and vegetable purchases in lower income households: Results of a pilot study. Accepted for publication 7/11/12. *Journal of Health Care for the Poor and Underserved*.

C. Selected Ongoing Research Support

Phipps (PI)

University of Pennsylvania (sub contract) University of Pennsylvania (Subcontract) under African American Collaborative Obesity Research Network (AACORN) grant from the Robert Wood Johnson Foundation;

Principal Investigator: Shiriki Kumanyika, PhD

Food Purchasing Practices of Family Caregivers in Philadelphia

1/02/13-/06/01/13

This project examines food purchases and associated expenditures of two study groups involved in research studies conducted by the Einstein PI.

Phipps (PI)

Albert Einstein Society

What to eat for lunch? A Pilot study

01/15/12-12/31/13

This pilot study tests the use of a pre-ordering system with hospital employees with the goal of increasing mindful eating and healthier eating at work.

Phipps (PI)

Edna Kynette Foundation

Mindful Eating at Work

03/01/12-02/28/13

The funding adds cardiovascular measures to assess outcomes in the above study,

Phipps (PI)

Robert Wood Johnson Foundation

11/01/10-6/1/12*

Examining Rewards-Based Incentives for Fruit and Vegetable Purchases by Lower-Income Families

This goal of this randomized trial is to test the use of financial incentives to promote purchase of fruit and vegetables in low income households. *We are completing full study manuscript at this time.

BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Leonard E. Braitman, Ph.D.	Biostatistician Albert Einstein Healthcare Network

EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Temple University	B.A.	1962	Mathematics
Temple University	M.A.	1969	Mathematics
University of Chicago	M.A.	1973	Sociology
University of Chicago	Ph.D.	1980	Sociology

Positions and Honors

1980-1983	Assistant Professor of Medicine, Temple University, Philadelphia, PA
1983- 2010	Statistical Editor, <i>Annals of Internal Medicine</i>
1987-1991	Assistant Director of Biostatistics Unit, University of Pennsylvania Cancer Center, Philadelphia, PA
1992- Present	Biostatistician, Office for Research and Technology Development, Albert Einstein Healthcare Network, Philadelphia, PA

Selected peer reviewed articles

Phipps, E, Stites S, Wallace S, **Braitman, L.** Fresh fruit and vegetable purchases in an urban supermarket by low income households. Accepted for publication May 4, 2012 Journal of Nutrition Education and Behavior.

Phipps, E, Wallace S, Stites S, Uplinger, N, Singletary S, Brook, Hunt, L, Axelrod, S, Glanz, K, **Braitman, LE.**

Using rewards based incentives to increase purchase of fruit and vegetables in lower income households: design and startup of a randomized trial. Public Health Nutrition, Available on CJO doi:10.1017/S1368980012004934

Phipps, EJ, **Braitman, LE,** Stites, SD, Wallace SL, Singletary, SB, Hunt, LH. The use of financial incentives to increase fresh fruit and vegetable purchases in lower income households: Results of a pilot study. Accepted for publication 7/11/12. Journal of Health Care for the Poor and Underserved.

Klein MG, **Braitman LE,** Costello R, Keenan MA, Esquenazi A. Actual and Perceived Activity Levels in Polio Survivors and Older Controls: A Longitudinal Study. Archives of Physical Medicine and Rehabilitation, 2008; 89:297-303.

Friedenberg F, Pungpapong S, Zaeri N, **Braitman LE.** The Impact of Diabetes and Obesity on Liver Histology in Patients with Hepatitis C. Diabetes, Obesity and Metabolism 2003; 5:150-5.

Edelsohn GA, **Braitman LE,** Rabinovitch H, Sheves P, Melendez A. Predictors of Urgency in a Pediatric Psychiatric Emergency Service. J Am Acad Child Adolesc Psychiatry 2003; 42:1197-1202.

Phipps E, True G, Harris D, Chong U, Tester W, Chavin SI, **Braitman LE.** Approaching the End of Life: Attitudes, Preferences and Behaviors of African-American and White Patients and their Family Caregivers. J Clinical Oncology 2003; 21:549-54.

Braitman LE, Rosenbaum PR. Rare Outcomes, Common treatments: Analytic Strategies using Propensity Scores. Ann Intern Med. 2002; 137: 693-5.

Maraj S, Jacobs LE, Kung SC, Raja R, Krishnasamy P, Maraj R, **Braitman LE**, Kotler MN. Epidemiology and Outcome of Infective Endocarditis in Hemodialysis Patients. Am J Med Sci. 2002; 324: 254-260.

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Porter RS, Nester BA, **Braitman LE**, Geary U, Dalsey WC. Intravenous Magnesium is Ineffective in Adult Asthma. European J Emerg Med. 2001; 8: 9-15.

Freidenberg F, Fernandez A, Sorondo B, Fazili J, **Braitman LE**, Geller A. The Proximal Shift in the Distribution of Colon cancer is Independent of Age and Gender. Journal of Applied Research in Clinical and Experimental Therapeutics. Spring 2001; 1:1-7.

Fazili J, Ilagan M, Phipps T, **Braitman LE**, Levine G. How Gastroenterologists Inform Patients of Results after Lower Endoscopy. Amer J Gastroenterology 2001; 96: 2085-91.

Manzarbeitia C, Reich D, Rothstein KD, **Braitman LE**, Levin S, Mun SJ. Tacrolimus Conversion Improves Hyperlipidemic States in Stable Liver Transplant Recipients. Liver Transplantation 2001; 7:93-9.

Goldstein M, Levine GM, **Braitman LE**. The Costs Associated with Termination of a Nutrition Support Nurse. J Parenter Enteral Nutr. 2000; 24:323-7.

Braitman LE. Confidence intervals assess both clinical and statistical significance. Ann Intern Med. 1991; 114:515-7.

Clark WH Jr, Elder DE, Guerry D 4th, **Braitman LE**, Trock BJ, Schultz D, Synnesvedt M, Halpern AC. Model predicting survival in stage I melanoma based on tumor progression. J Natl Cancer Inst. 1989; 81: 1893-1904.

Braitman LE. Confidence intervals extract clinically useful information from data. Ann Intern Med. 1988; 108: 296-298.

Braitman LE. Statistical power analysis in medical research. Ann Intern Med. 1983; 99: 269-271.

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BOOK CHAPTERS

Braitman LE. Confidence interval Estimates and Significance Tests for Percentages. In Munro BH, Page EB. Statistical Methods for Health Care Research, 3rd ed. Philadelphia: Lippincott-Raven Publishers 1997: 84-96.

Silverberg M, Tama AR, Wallner S, **Braitman LE**. Primary care delivery system for pregnant adolescents. In Virgo JM (ed.) Exploring new vistas in health care. International health economics and management institute. 1985: 311-318.

Munro BH, Jacobsen BS, **Braitman LE**. Introduction to Inferential Statistics and Hypothesis Testing. In Statistical Methods for Health Care Research, 3rd ed. Philadelphia: Lippincott-Raven Publishers 1997: 53-83.

BIOGRAPHICAL SKETCH

NAME Shana Stites		POSITION TITLE Research Analyst Einstein Medical Center	
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Cedar Crest College, Bethlehem, Pennsylvania	B.S.	1996-2000	Pre-Med, Psychology
Lehigh University, Bethlehem, Pennsylvania	M.A.	2002-2004	Sociology
Chestnut Hill College, Philadelphia, Pennsylvania	M.S.	2006-2008	Psychology
Chestnut Hill College, Philadelphia, Pennsylvania	Psy.D.	2006-2012	Psychology

A. Positions and Honors.

- 2000-2005 Bethlehem Health Bureau *Public Health Preparedness Coordinator/Epidemiology Manager, Bethlehem, PA*
- 2003-2004 Consultant, Community Health Services St. Luke's Hospital and Health Network, Bethlehem, PA
- 2005-Present Data Analyst, Center for Urban Health Policy and Research, Einstein Medical Center, Philadelphia, PA
- 2011 – 2012 Psychology Intern, VA Medical Center, Philadelphia, PA

Honors (selected)

2002 Scholarly Achievement Award, Best Research Paper by a Graduate, Society for Applied Sociology, "Completed suicide among individuals with multiple emergency dispatches".

B. Selected Publications

Phipps, EJ, Wallace, SL, **Stites, SD**, Uplinger, N, Singletary, SB, Hunt, L, Axelrod, S, Glanz, K, Braitman, LE. Using Rewards-Based Incentives to Increase Purchase of Fruit and Vegetables in Lower - Income Households: Design and Start up of a Randomized Trial. Accepted for publication 8/24/12. *Public Health Nutrition*. , Available on CJO doi:10.1017/S1368980012004934

Phipps E J., **Stites SD**, Wallace S L, Braitman L E. Fresh fruit and vegetable purchases in an urban supermarket by low income households. Accepted for publication 4/23/12. *Journal of Nutrition Education and Behavior*.

Phipps, EJ, Braitman, LE, **Stites, SD**, Wallace SL, Singletary, SB, Hunt, LH. The use of financial incentives to increase fresh fruit and vegetable purchases in lower income households: Results of a pilot study. Accepted for publication 7/11/12. *Journal of Health Care for the Poor and Underserved*.

Phipps, E., Braitman, L., **Stites, S.**, Leighton, J. (2008). Quality of Life and Symptom Attribution to Colon Cancer in Long Term Colon Cancer Survivors. *Journal of Evaluation in Clinical Practice*, 14(2), 254-258.

C. Research Support

Ongoing Research Support

Phipps (PI) 01/02/13-/06/01/13
 University of Pennsylvania (sub contract) University of Pennsylvania (Subcontract)
 under African American Collaborative Obesity Research Network (AACORN) grant
 from the Robert Wood Johnson Foundation;
 Principal Investigator: Shiriki Kumanyika, PhD
 Food Purchasing Practices of Family Caregivers in Philadelphia

This project examines food purchases and associated expenditures of two study groups involved in research studies conducted by the Einstein PI.

Phipps (PI)

Robert Wood Johnson Foundation

11/01/10-6/1/12*

Examining Rewards-Based Incentives for Fruit and Vegetable Purchases by Lower-Income Families

This goal of this randomized trial is to test the use of financial incentives to promote purchase of fruit and vegetables in low income households. *We are completing full study manuscript at this time.

Role: Data analyst

Phipps (PI)

Albert Einstein Society

01/15/12-12/31/13

What to eat for lunch? A pilot study to improve healthier eating at work

This is a pilot study will test the feasibility and potential effectiveness of a novel approach to improve food choices by employees about what to eat for lunch. The study draws on principles from the field of behavioral economics and behavioral change. We will test the effectiveness of the intervention with 30 employees (study participants) who are overweight or obese.

Role: Data analyst

Phipps (PI)

Edna Kynette Foundation

Mindful Eating at Work

03/01/12-02/28/13

The funding adds cardiovascular measures to assess outcomes in the above study,