A. Summary of Progress toward the achievement of the originally stated aims
This study has been completed and the original study aim was achieved. The aim of this 3 phase pilot study was to examine the feasibility of an intervention for migrant farmworker families, Dietary Intake and Nutritional Education (DINE), and its effect on child dietary intake and body mass index (BMI) and BMI percentiles (BMIp) for age and gender.

B. List of Significant Results
The aim of the DINE study was to develop a culturally sensitive health promotion education intervention on healthy eating and healthy weight for migrant farmworker mothers. Past research has shown that the children of migrant farmworkers display high rates (52%) of overweight and obesity. The DINE study had 3 phases. The first phase (2008) was descriptive, and informed the research team about levels of acculturation, self-efficacy, food security, children’s attainment of the recommended MyPyramid food group servings for age and gender, and also children’s anthropometric measurements to calculate BMI and BMI-p. Sample size was 30 parents (mostly mothers) and 43 children. Phase 1 also pilot tested the use of audio-enhanced personal digital assistants (PDAs) for data collection. Phase 2 (2009) of the study focused on the development of the health promotion intervention objectives, education materials. In addition, it included the creation of a comic book to be used as a reinforcement of the lessons learned in the intervention. This comic book, “Small changes, Big results,” was in English on one side and Spanish on the flip side. Phase 2 also pilot tested the use of audio-enhanced tablet computers for completion of a food frequency survey with 13 mothers. Phase 3 (2010) was the testing of the effectiveness of the developed DINE intervention. Six migrant camps in Ohio and Michigan were engaged in the study; 3 for the intervention group (n=34), and 3 for the comparison group (n=25). Total sample of children was 92. The DINE teaching units were visual, hands-on and interactive, and were conducted in Spanish. The use of an audio-enhanced tablet computer (ATC) was re-tested after further modified in response to 2009 pilot testing. Results confirmed that the feasibility of conducting research in this vulnerable and itinerant population has challenges and many lessons were learned. Migrant families have low levels of food security and acculturation, and levels of self-efficacy were unremarkable. Children do not meet the recommendations of food group servings for age and gender, and approximately 50% of children can be classified as overweight or obese. The use of technology in data collection was tested, seen with audio-enhanced PDAs and tablet computers, and data qualities were impressive. Having surveys read to the participants with audio-enhanced technology enabled Spanish speaking mothers with low levels of education to become active research participants. Results from the DINE study were obtained that indicate the methodology of conducting health promotion classes at the migrant camps was feasible and acceptable to participants. The average attendance of the mothers to the 2 data collections and 3 health promotion classes for the intervention group was 65% with a group site range of 45% to 93%. The comparison group participated in baseline and end of summer data collections with a group attendance of 64% with a range of 30% to 100%. Some migrant camps were more conducive to the conduct of the teaching units. The target children with mothers in the intervention group had BMI and BMI-p decreases and percent of children in overweight or obese BMI categories decreased with BMI categories approaching significance $p=.054$. The comparison group showed increases in means in BMI, BMI-p and percent of children in the overweight and obese category. In a larger sample that included potential half-siblings the means of pre and post BMI, BMI% and BMI category increased in the comparison group, but all decreased in the intervention group. The intervention group had a significant ($p=.006$) decrease in BMI, and BMI category ($p=.009$). The intervention group had a greater impact in girls ($n=15$) with decreases in
BMI (.001), BMI% (.002), and BMI overweight or obese category (.014); boys (n=10) were non-significant. No change was seen in the attainment of recommended food group servings. In January 2011 we sent out a booster intervention to the 33 mothers who provided us with an address to receive information, asking them to provide a height and weight for the child, and the name of the farm they would be working at in summer 2011. Six envelopes were returned as undeliverable. None were returned with information. The use of a booster mailed intervention was not successful and it is suspected that forwarding mail addresses change or past study participants are reluctant to return an inquiry.

C. List of Publications


