Anna Laurin Harrison
College of Agriculture and Life Sciences Undergraduate Research Scholars Program
GA 4000
DIS in Agriculture
Dr. Sylvia Byrd[1], Faculty Mentor
Collaborators: L. Downey, DrPH[2], D. Buys, PhD, MSPH[1], R. Mathews, MPH.[1]
Spring 2015

Effects of a Week-long Cooking Camp on Self-efficacy of Dietary Behavior and Food Preparation Skills in Children

ABSTRACT

Over the last three decades consumption of foods eaten or prepared outside the home increased and conversely less time was spent preparing meals at home. These trends combined with increased prevalence of diet and lifestyle-related chronic diseases focus the need for edible education, meal planning, purchasing ingredients, food preparation skills, and nutritional meals. Cooking camps are effective interventions for improving nutritional status and eating behaviors of children.

Fun with Food, a weeklong summer camp aimed at increasing self-efficacy in food preparation skills, at Mississippi State University has been offered for the last eight years. Twenty 8-13 year olds in 2014 Fun with Food summer camp participated in a pre-survey administered the first day of camp, as well as a 9-month follow up survey. IRB approval was obtained. Application of Social Cognitive Theory as it relates to self-efficacy of food preparation and dietary behavior change was utilized. Self-efficacy was measured by standardized questions reflecting the level of confidence in performing a food- or kitchen-related task.

The pre- and follow up surveys were analyzed for changes in self-efficacy of food preparation and dietary behaviors resulting from participation in Fun with Food Camp. Sixty percent of camp participants were females. Prior to attending camp, only thirty-five percent of participants were confident in their ability to follow a recipe without help. Sixty percent of participants were not sure they could eat a half cup of vegetables or one serving of whole grains at home most days. Data revealed that involving children in food preparation can positively affect self-efficacy and dietary behaviors.

Additional research is needed to determine if food-preparation skills translate to sustainable and healthier food choices.

[1]Food Science, Nutrition, and Health Promotion, [2]School of Human Sciences, Mississippi State University, Mississippi State, MS.

LITERATURE REVIEW

Childhood obesity and overweight are issues that have gained global attention in the 21st century. The problem has been attributed to an excess of caloric availability and intake. However, diet quality overall, including fruit and vegetable consumption, is of concern. The diet quality of the population is measured by United States Department of Agriculture's Healthy Eating Index. The Healthy Eating Index-2010 results found that the categories of Greens and Beans and Whole Grains had the lowest scores when held to national standards (14-18% and 16-18%, respectively). Though significant improvement was seen in adequacy of Total Fruit and Whole Fruit and reduced empty calorie intake, the total score (47-50%) remained far lower than the recommendations set forth by USDA. Children consuming more vegetables and whole grains in place of empty calories like solid fat and sugar could accomplish further improvement in total score (*Diet Quality of Children Age 2-17 Years as Measured by the Healthy Eating Index-2010*, 2013).

Fast food has been found to be the greatest contributor to this excess in energy intake and calories consumed away from home. Researchers at the University of North Carolina at Chapel Hill conducted a study which analyzed the impact of location of food consumption and preparation upon the diets of children using data from the 1977-1978 Nationwide Food Consumption Survey, 1989-1991 and 1994-1998 Continuing Survey of Food Intake by Individuals, and 2003-2006 NHANES. It was determined that the increased energy intake by children over the last thirty years was associated with the increase of calories consumed outside of the home. These results further justify the need for food preparation instruction with children in order to improve diet quality (Poti & Popkin, 2011).

Parenting and feeding trends have shown to be influential in a child's eating habits and development of food preferences. Modeling eating behaviors is evidence to be beneficial in creating dietary behaviors that will last in to adulthood. These studies have focused primarily on pre-school age children. One study found in a preschools and daycare convenience sample (n=465) that parents and children eating the same home-cooked meals at the same time resulted in greater vegetable consumption among the children (Sweetman, McGowan, Croker, & Cooke, 2011). It has also been suggested that young children are more likely to try new foods after observing their caregiver eat the same food. This collection of research suggests that parenting styles and child-feeding practices may be indicative of risk for overweight or obesity, and will be used in the future as an intervention strategy (Stang & Loth, 2011). Family-based behavioral intervention is considered to be a non-diet approach and has resulted in improved weight status among adolescent participants (Hoelscher, Kirk, Ritchie, & Cunningham-Sabo, 2013).

Children and adolescents may benefit indirectly from adults' food preparation abilities. Clemson University's *Cooking with a Chef* trained food service professionals in creative food preparation techniques that could make school meals containing heathy ingredients more appealing to children. Participants completed five sessions and a questionnaire used as a pre and post-survey. The theoretical approach to this program was Social Cognitive Theory (SCT) and resulted in increase in confidence with a variety

of food preparation techniques as well as improved attitudes towards trying new recipes (Condrasky, Sharp, & Carter, 2014).

Intervention strategies for children are heavily evaluated for effectiveness and validity. Theory-driven interventions usually measure psychosocial variables such as self-efficacy. In the case of cooking camps, knowledge gained and behavior change may also be assessed. There are limited, published evaluations and descriptive studies for camps such as these. However, a handful of programs such as the *4-H Healthy Living Project* at the University of California Cooperative Extension have been thoroughly evaluated based on theory, food preparation instruction, behavior change, and self-efficacy. This was a pilot study for youth participants (n=82) which included two quantitative evaluation methods (pre and post-tests), a food photo journal, and a qualitative method as well. A four item survey evaluating nutrition behaviors was completed by participants before and after the six-week program which consisted of six sessions of hands-on cooking, a nutrition activity, a physical activity, congregate mealtime, and reflective writing. Youth also compiled a food photo journal at home for one week during the first and fifth week of the program. This was found to be an ineffective way to log behaviors due to poor documentation by the participants. The pre- and post-surveys, however, proved to be effective in documenting outcomes with this pilot study. The authors stated that the six-week time period of intervention and evaluation could not measure sustainable behavior change. Additional outcomes that were not captured included how much the children enjoy or dislike cooking, self-efficacy in food preparation, interest in trying new foods, and if behaviors changed as a result of activities done in class. The study reflected the need to tailor instruments for the target population and curriculum in order to yield useful data that will measure the desired knowledge and behavior outcomes (Matthiessen et al, 2011).

Another cooking camp intervention was Oregon State University's *Culinary Camp.* Beets, Swanger, Wilcox, & Cardinal (2007) stated that the purpose of this *Culinary Camp* was to "increase the number of times young adolescents prepared meals at home and to improve their attitudes, self-efficacy, behavioral expectancies, knowledge, perceived cooking ability, and perceptions of parents' worry regarding cooking." *Culinary Camp* used experiential learning as its theoretical framework which involved development of food preparation skills. The pilot program was conducted in the summer of 2006. Baseline and one-week post-assessments were collected using a survey that focused on cooking behaviors as well as psychosocial modality such as attitudes towards cooking, self-efficacy, knowledge, and perceptions about personal cooking ability. The primary goal of *Culinary Camp* was to see increased meal preparation, however, this was not accomplished. Overall, though, the participants gained useful cooking skills in an innovative fashion. The authors suggest that future studies incorporate a parent component in order to encourage them to allow children to be active in food preparation at home (Beets, Swanger, Wilcox, & Cardinal, 2007).

Pennsylvania State University's program *Cooking like a Chef* is a week-long camp for pre-adolescent children which involves hands-on culinary nutrition sessions with the aim to increase cooking confidence that will translate in to healthy eating habits. Pre- and post-questionnaires were completed by participants (n=97) which quantified children's cooking confidence, nutritional knowledge, and food preparation skills. The

study revealed that the camp was influential in children making healthier food choices and having positive attitudes towards food due to their new-found knowledge of food and cooking (Condrasky, Dixon, Corr, & Sharp, 2012).

A systematic review of eight cooking education program frameworks and outcomes evaluated influence on children's report food preparation skills, dietary intake, cooking confidence, fruit and vegetable preferences, attitudes towards food and cooking, and food-related knowledge (Hersch, Perdue, Ambroz, & Boucher, 2014). The findings concluded that such cooking programs may have positive impact on children's nutrition behaviors, knowledge, and attitudes. Though the evidence demonstrates the benefits of such programs, literature describing ideal program length and the sustained effects is lacking.

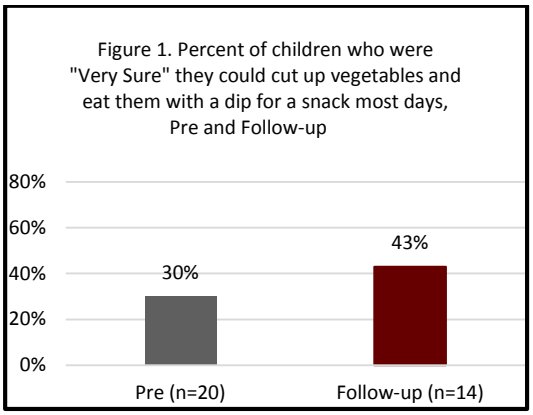
Through perusing the literature, it is evident that child nutrition interventions focusing on food preparation skills, nutrition knowledge, and self-efficacy of dietary behaviors are increasingly prevalent and in continuous development. The major goals in the United States of reducing excessive energy intake, especially from junk foods and added sugars, and increasing fruit and vegetable consumption have potential to be met through cooking instruction as well as modeling behaviors.

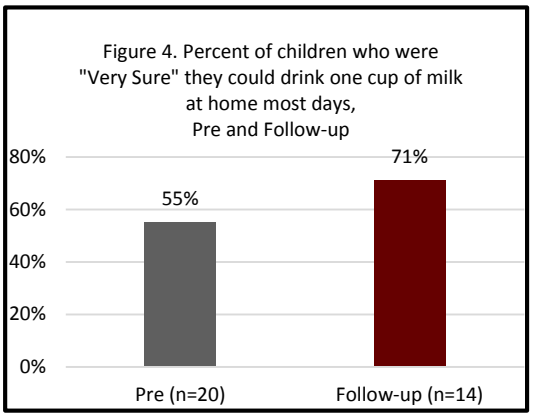
Fun with Food at Mississippi State University

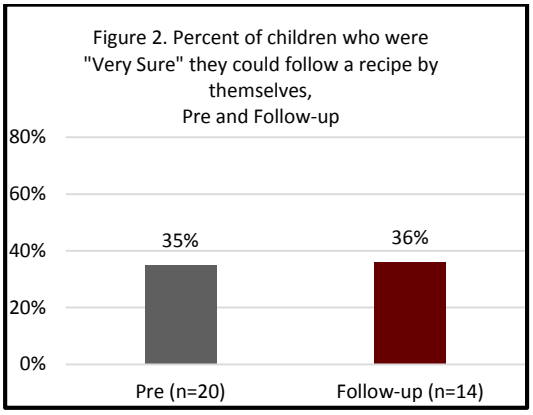
The purpose of this study was to compare the reporting of self-efficacy and dietary behaviors of 2014 campers prior to camp and what they report after camp. Specifically, in this camp, participants learned how to cut and measure ingredients, follow a recipe and basic kitchen skills. Understanding the impact of a camp such as *Fun with Food* provides evidence that children need this type of training to be self-sufficient and to make choices as adults.

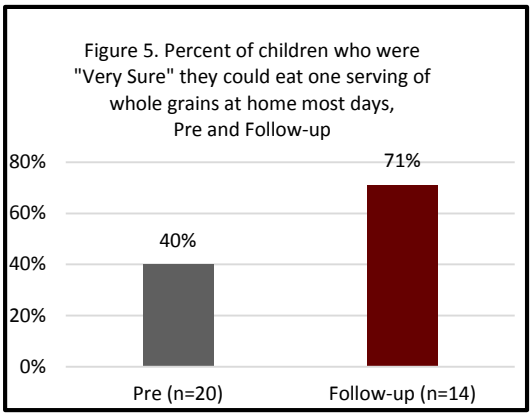
Increasing self-efficacy in food-preparation is a goal of *Fun with Food* camp. Dr. Pajares (2002) states that, " researchers have established that self-efficacy beliefs and behavior changes and outcomes are highly correlated and that self-efficacy is an excellent predictor of behavior self-efficacy has proven to be a more consistent predictor of behavior outcomes than have any other motivational constructs." In addition, modeling behaviors are a component of this, in that one can relate to and learn from another performing a task. This proves to increase self-efficacy of the observer as well as increase the likelihood that he or she will attempt to perform that behavior or task. This theory has been applied to children as they observe food preparation and dietary behaviors while participating in *Fun with Food* camp at Mississippi State University.

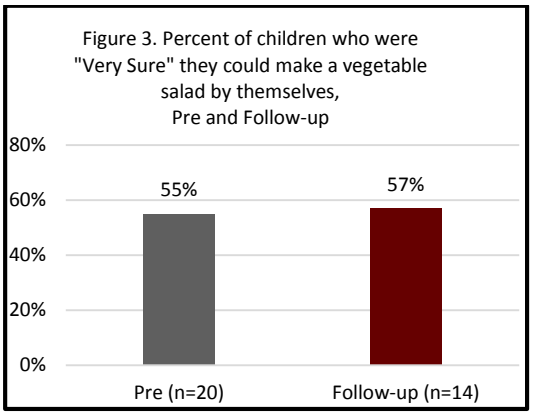
SUMMARY OF FINDINGS

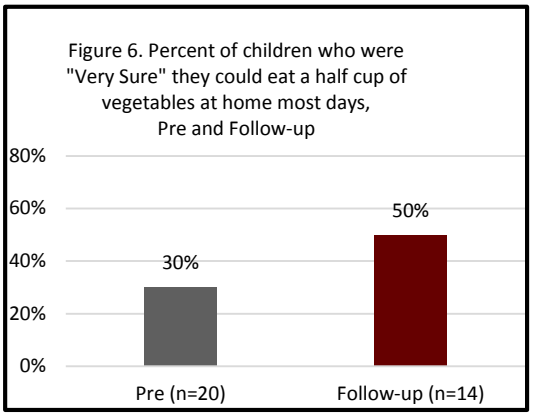












Application of the Social Cognitive Theory as it relates to self-efficacy of food preparation and dietary behavior change was used to develop a survey[1] of 28 items. The study was approved by the MSU Institutional Review Board. In 2014, 20 eight- to thirteen-year-olds participated in *Fun with Food* summer camp. A pre-survey was administered the first day of camp. A nine-month follow-up survey was mailed to campers. Self-efficacy was measured by six standardized items reflecting the level of confidence in performing a dietary behavior or food preparation skill. Children rated themselves as either “Very Sure”, “A Little Sure” or “Not at all Sure.” The scale was collapsed to show the difference in how many children were “Very Sure” before and

after camp for this project. Descriptive statistics were run for the pre and follow-up surveys. Confidence intervals were constructed and compared. The analysis was conducted in IBM SPSS 22.

The results revealed the food preparation skills and dietary behaviors children feel the most confident performing after participation in *Fun with Food* camp. Dietary intake and recommendations to increase consumption of vegetables, whole grains, and dairy are tenants of the camp curriculum. There were no statistically significant differences ($p < 0.05$) for the six items investigated between the pre and follow-up surveys, as indicated by overlapping 95% Confidence Intervals. However, it is notable the percent of children who were "Very Sure" about vegetable, whole grain, and dairy consumption increased after camp participation. Confidence in vegetable, whole grain, and dairy consumption (Figures 4-6) showed greater increase than confidence of food preparation (Figures 1-3). A limitation of this study was sample size (n=20). Anecdotal reports suggest sustained change in some participants and merits additional study.

STUDENT EXPERIENCES

As an undergraduate student in Food Science, Nutrition, and Health Promotion, I have taken classes that focus on the research process and research methods. Since becoming an undergraduate research scholar in the College of Agriculture and Life Sciences, this information has come alive and increased my confidence in conducting research. Dietetics is a research-based, evidence-based practice. By participating in the CALS Undergraduate Research Scholars program, I gained experience that would not be plausible in the classroom and maximized the effectiveness I can have as a future health professional. Acting as principal investigator in this project gave me the opportunity to learn about research in my field from the ground up.

Before the project was received as a MAFES-funded student research project, I met with my collaborators (with the exception of Ms. Mathews who had not yet started her doctoral studies) and faculty mentor to discuss the prospect of developing a project related to 2014 *Fun with Food* camp at Mississippi State University. At this time, I was acting as *Fun with Food* camp coordinator. Thus, I became extremely familiar with camp goals, objectives, curriculum, and planning. This was beneficial in writing the research proposal and in the development of the evaluation instrument. Camp was held on June 16-20. I saw first-hand how cooking instruction and basic nutrition lessons were reinforced with the children and the impact on their confidence in the kitchen. Naturally, my interest in a research project about *Fun with Food* increased after camp. A proposal was written and I applied for the CALS Undergraduate Research Scholars Program.

Upon acceptance, I got to work on a review of literature and a timeline for my project. This was my first, practical experience in development of a true research project. One of my favorite parts of undergraduate research was exploring the literature and finding myself fascinated by the trails that led from one study to another. The literature review was a critical part of this project as I was better able to discuss and

explain the rationale of *Fun with Food* camp, the importance of conducting the study, and compare it to similar programs.

Most of the fall semester was centered on development of the survey. Though it seemed at first to be an uncomplicated task, I soon discovered the great amount of thought and analysis required. The benefit of my collaborators' input in that process is immeasurable. My personal experience in *Fun with Food* camp proved to be valuable in writing the survey because I was familiar with the objectives and had witnessed the subtle, yet notable, increase in confidence level of the campers in the kitchen and their willingness to try new foods.

In the spring semester, the focus was survey printing and administration. In contrast to the previous semester, this process was much more detailed. Due to the nature of the research (children as subjects) IRB approval had to be obtained for the project. I worked with my faculty mentor and collaborators to ensure appropriate methods would be utilized in the administration of the survey and maintenance of the results after analysis. I learned a great deal by going through the IRB application, which involved multiple revisions and consultation with IRB compliance officers. I used the registration database from 2014 *Fun with Food* camp to develop the mailing list and print labels, as well as individualize the surveys in hopes of increasing the response rate. In addition, we included a parent survey for non-research purposes to gain insight for an after-school *Fun with Food* program and future *Fun with Food* summer camps. I obtained IRB approval for a procedure modification in order to follow-up with reminders to the parents about the survey via email. During this time, I also submitted abstracts for poster presentation at the Undergraduate Research Symposium and the Food and Nutrition Conference & Expo in Nashville (October 3-6, 2015).

Analysis was an area in which I definitely lacked experience, but desired to learn more as it will be a critical skill in graduate studies and dietetic practice. With assistance from Ms. Mathews, a doctoral student and research collaborator, I developed a much better understanding of statistical analysis. I was able to contribute to the analysis by doing some data entry. When data entry was completed, we ran descriptive statistics and reviewed the results together. It was a good experience to hear the input of each of my collaborators in a round-table discussion of the results.

After thorough analysis, I drafted a poster for the Undergraduate Research Symposium. It took many hours to finalize the design and text for the poster. I practiced my presentation before the C.H.A.N.G.E. (Community Health and Applied Nutrition Group Exchange), a research-oriented group in the Department of Food Science, Nutrition, and Health Promotion consisting of undergraduate researchers and research assistants, graduate students, and professors. Receiving their feed-back, though tough, provided thought-provoking questions to consider before presenting at the symposium.

On the day of the symposium, my aptitude for speaking in front of others has never been higher. Because my direct involvement with the research, I was able to

explain and discuss my project with enthusiasm and without hesitation. The presentation experience was the most rewarding moment of my undergraduate career.

In conclusion, my experience as a CALS Undergraduate Research Scholar proved to be substantially beneficial and has impacted my future academic endeavors as well as career aspirations. I will continue be involved with and support research in my field, and be grateful for the opportunity provided by Mississippi State University and the College of Agriculture and Life Sciences to enrich my educational experience.

LEARNING OUTCOMES

- As a result of completing the Undergraduate Research Scholars Program, the student is able to **write a research proposal**.
- As a result of completing the Undergraduate Research Scholars Program, the student can **conduct a research project**.
- As a result of completing the Undergraduate Research Scholars Program, the student can **design an instrument for program evaluation**.
- As a result of completing the Undergraduate Research Scholars Program, the student can **compile a review of literature**.
- As a result of completing the Undergraduate Research Scholars Program, the student **learned and applied ethical research methods.**
- As a result of completing the Undergraduate Research Scholars Program, the student **gained experience in data entry, management, and analysis**.
- As a result of completing the Undergraduate Research Scholars Program, the student can **prepare and present results of a research project** at a research symposium.

DELIVERABLES

- 3rd Place Poster, Social Sciences category, MSU Undergraduate Research Symposium
- Appended:
    - Instrument for measurement of self-efficacy of dietary behavior and food preparation skills in participants of *Fun with Food* camp 2014
    - Abstracts submissions
    - Poster presentation

*Appended documents are in chronological order.

WORKS CITED

Beets, Michael W., Swanger, Karen, Wilcox, Douglas R., & Cardinal, Bradley J. (2007). Using Hands-on Demonstrations to Promote Cooking Behaviors with Young Adolescents: The Culinary Camp Summer Cooking Program. *Journal of Nutrition Education and Behavior, 39*(5), 288-289. doi: http://dx.doi.org/10.1016/j.jneb.2007.05.002

Condrasky, M. D., Dixon, E., Corr, A., & Sharp, J. (2012). Culinary Nutrition Skill Development of Pre-Adolescent Cooking Camp Participants. *Journal of the Academy of Nutrition and Dietetics, 112*(9, Supplement), A50. doi: http://dx.doi.org/10.1016/j.jand.2012.06.178

Condrasky, M. D., Sharp, J. L., & Carter, C. (2014). Cooking with a Chef Training with School Food Service Professionals. *Journal of the Academy of Nutrition and Dietetics, 114*(9, Supplement), A60. doi: http://dx.doi.org/10.1016/j.jand.2014.06.196

Diet Quality of Children Age 2-17 Years as Measured by the Healthy Eating Index-2010. (2013).

Hersch, Derek, Perdue, Laura, Ambroz, Teresa, & Boucher, Jackie L. (2014). The Impact of Cooking Classes on Food-Related Preferences, Attitudes, and Behaviors of School-Aged Children: A Systematic Review of the Evidence, 2003-2014. *Preventing Chronic Disease, 11*, E193. doi: 10.5888/pcd11.140267

Hoelscher, Deanna M., Kirk, Shelley, Ritchie, Lorrene, & Cunningham-Sabo, Leslie. (2013). Position of the Academy of Nutrition and Dietetics: Interventions for the Prevention and Treatment of Pediatric Overweight and Obesity. *Journal of the Academy of Nutrition and Dietetics, 113*(10), 1375-1394. doi: http://dx.doi.org/10.1016/j.jand.2013.08.004

Matthiessen, T., Horowitz, M., Neelon, M., Smith, D., & Kaiser, L. (2011). Insights from an Evaluation of a Healthy Living Project. *Advances in youth development: Research and evaluation from the University of California Cooperative Extension (2001 - 2010).* Subramaniam, A., Heck, K., Carlos, R. & Junge, S. (Eds.). University of California Agriculture and Natural Resource. 58-69.

Pajares, Frank (2002). *Overview of social cognitive theory and of self-efficacy*. Retrieved October 1, 2014. http://www.emory.edu/EDUCATION/mfp/eff.html

Poti, Jennifer M., & Popkin, Barry M. (2011). Trends in Energy Intake among US Children by Eating Location and Food Source, 1977-2006. *Journal of the American Dietetic Association, 111*(8), 1156-1164. doi: http://dx.doi.org/10.1016/j.jada.2011.05.007

Stang, Jamie, & Loth, Katie A. (2011). Parenting Style and Child Feeding Practices: Potential Mitigating Factors in the Etiology of Childhood Obesity. *Journal of the American Dietetic Association, 111*(9), 1301-1305. doi: http://dx.doi.org/10.1016/j.jada.2011.06.010

Sweetman, Claire, McGowan, Laura, Croker, Helen, & Cooke, Lucy. (2011). Characteristics of Family Mealtimes Affecting Children's Vegetable Consumption and Liking. *Journal of the American Dietetic Association, 111*(2), 269-273. doi: http://dx.doi.org/10.1016/j.jada.2010.10.050

CALS / MAFES Undergraduate Research Program
Faculty Application

PROJECT TITLE: Effects of a week-long cooking camp on self-efficacy of dietary behavior and food preparation skills in children

UNDERGRADUATE MENTOR: Sylvia H. Byrd
Departmental/Unit Affiliation: **Food Science, Nutrition and Health Promotion**
Email: **shb5@msstate.edu**

PROJECT ABSTRACT

The increasing prevalence of diet and lifestyle related chronic diseases in the United States has led many interested in prevention to diverse solutions. The most practical, but capital intensive solution involves teaching individuals about food: how to plan meals, purchase ingredients and prepare nutritional meals for themselves and their families. The growing number of adult and child-focused programs nationwide indicate the need for effective and innovative programs to be validated and standardized for dissemination. The goal of this undergraduate research project is to assess changes in children's behavior and self-efficacy resulting from participation in week-long farm to table cooking camp.

In 2007, the inaugural *Fun with Food* summer cooking camp was conducted at Mississippi State University for children entering third through sixth grade. For almost a decade, the camp has empowered over 200 children to practice food preparation skills and food safety as well as given them the farm to table experiences to want to embrace their new knowledge. In order to assess the effectiveness of *Fun with Food* camp, program evaluation tools must be developed for current and future camp participants. The purpose of the larger study is to develop tools and assess prior cohorts' change in self-efficacy of nutrition behavior and food preparation skills and overall program quality and effectiveness.

Research and Extension faculty are collaborating to develop program evaluation tools including surveys for previous camp participants and their parents to complete. The participant survey will be used to measure changes in self-efficacy of dietary behaviors and food preparation skills using multiple methodologies. The parent survey will be used to assess perceived behavior changes of their child after camp. Because there are eight years of campers, long-term measures will be meaningful in measuring program effectiveness.

Results of this study will be integral in providing data for proposals in conjunction with the MSU Foundation and Infinite Impact Campaign to receive funding from the Kroger Foundation and other stakeholders. Additionally, results will be utilized to guide the development of an after school curriculum for integration into 4-H Healthy Living curricula.

Anticipated Outcomes/Impacts: The undergraduate student will have the opportunity to collaborate with Research, Extension and Teaching faculty, conduct a literature review, assist with development of program evaluation surveys, collect and analysis data and present findings at a professional meeting. In addition, results from the project will be utilized to obtain additional funding to conduct a "Train the Trainer" for Extension Agents and Science teachers in MS.

Proposals should be emailed to wburger@cfr.msstate.edu no later than August 15, 201 4.

CALS / MAFES Undergraduate Research Program

Student Application

STUDENT NAME: Anna Laurin Harrison
MSU STUDENT ID: alh715
EMAIL: alh715@msstate.edu
DEPARTMENT: Food Science, Nutrition, Health Promotion
DEGREE PROGRAM: Nutrition
CLASS STATUS (sophomore, junior, senior): Senior
GPA: 3.48
Are you a previous CALS/MAFES URSP participant? (Yes/No): No

After completing a Bachelor of Science in Food Science, Nutrition, and Health Promotion at Mississippi State, I plan to continue my education through a combined dietetic internship (DI) and Masters of Science degree in Nutrition or a related field, which will prepare me for the requirements to become a Registered Dietitian. The education I have received at Mississippi State University will be beneficial toward being a graduate student, dietitian, and representative of Mississippi State.

Professionally, I would like to gain a minimum of five years of experience in research-oriented clinical care. This type of dietetic practice would broaden my knowledge and practice for my career. My long-term goal is to develop resources for and work with families who wish to tailor their lifestyle to become more healthful and balanced through individualized meal-planning. Of special interest is promoting healthy eating among children through hands-on cooking instruction and educating about food using all of our senses.

"Fun with Food Camp" was launched by Dr. Sylvia Byrd in 2007 and over three-hundred children have participated over the last eight years. The mission of this camp is to provide an opportunity for children to be involved with food from the farm to the table. The week is action-packed with the children cooking, taking field trips to local food producers, and learning from professionals including chefs and farmers. As camp Coordinator of "Fun with Food Camp" this summer, I observed the effectiveness of cooking instruction and "farm-to-table" approach with children. By getting a glimpse at where food comes from and the multitude of ways it can be enjoyed, they are encouraged to be mindful of what they consume. I believe that such programs encourage children to try more foods, increase whole fruit and vegetable intake, and can yield overall healthful eating habits for them and their families. By participating in a program such as "Fun with Food Camp", children are motivated and empowered to prepare healthful food and share their knowledge with others. The assumption is that as the children's cooking skills develop, so will their self-efficacy. Therefore, they will be more resolved to practice what they have learned. I plan to complete a literature review, collect, and analyze data to support the value of cooking instruction for children.

Participating in the Undergraduate Research Scholars Program will strengthen my research abilities and provide experience in instrument development for program evaluation. In addition, this opportunity will increase my competitiveness in the dietetic internship application process. Research and evidence-based practice is key in the field of Dietetics, thus, this undergraduate research experience will greatly enhance my aptitude as a student and future dietitian.

Faculty Mentor: Dr. Sylvia Byrd

Email this application and resume to Dr. Carolyn Huntington (chuntington@ads.msstate.edu) no later than September 15, 2013

Undergraduate Research Scholar Program
Meeting 9.29.14 (Brainstorm)
Rahel & Anna Laurin

"Effects of a Week-long Cooking Camp on Self-Efficacy of Dietary Behavior and Food Preparation Skills in Children"

My Research Goals:

- **Evaluate the curriculum** by comparing/contrasting the Learning Objectives and outcomes.
- **Determine the effectiveness** of a week-long camp as evidenced by behavior modification & increased self-efficacy in food preparation, and/or positive dietary habits.
- **Develop an instrument** that will provide a comprehensive & replicable analysis of the effectiveness of Fun with Food Camp, and can be utilized in similar programs.
- _____
  _____
- _____
  _____

Data Collection:

- We are working on consolidating (moving in to one document) the registration information (name, age, gender, etc) from 2007-2014.
- 2010's registration information is inaccessible.

Research Questions:

- Based on the Learning Objectives in the Fun with Food Camp curriculum, have campers' dietary behaviors changed? And/or are they exhibiting positive dietary habits?
- Does the curriculum and the Fun with Food Camp experience influence children's dietary habits?
- Does the curriculum and the Fun with Food Camp experience increase children's' self-efficacy in food preparation and food choices?
- Are long-term (2007-2008 campers) behavior changes a result or attributed to Fun with Food Camp? Or another medium such as public education, other camps, familial influence, etc.?
- _____
  _____
- _____
  _____
- _____
  _____
- _____
  _____

Potential Methods for Survey Administration & Data Analysis:

1. Administer a post-survey to only the older age group (i.e. those who attended Food Camp in 2007-2008)
    a. Pros:
        i. Long-term evaluation. Does Food Camp continue to influence behaviors and has it improved self-efficacy?
        ii. The survey could be tailored to older age group, rather than writing two surveys for young & old.
    b. Cons:
        i. We lose further potential research by leaving out data from younger age group
        ii. Will these young adults be able to link their current dietary behaviors and self-efficacy to the Fun with Food Camp Experience after a 7 year period?
2. Pre-/post- survey design, administered to all former campers
    a. Pros:
        i. More data to analyze
    b. Cons:
        i. Survey development for wide range of age groups
        ii. Do we have pre-surveys from all years of camp?
3. Post- only survey/data analysis design
    a. Pros:
        i. The survey could be tailored to reflect our research questions and goals.
    b. Cons:
        i. Chance of missing a comparative analysis between the pre- and post- survey. But would there be time?
4. 2013-2014 repeated post
    a. Pros:
        i. Evaluate changes over a shorter period of time
    b. Cons:
        i. Not a lot of time for survey development, administration, and analysis

MAFES Undergraduate Research Scholar Program

Effects of a week-long cooking camp on self-efficacy of dietary behavior and food preparation skills in children

Timeline

Anna Laurin Harrison

Week #	Dates
1	October 6-10
2	October 13-17
	FNCE • *Timeline and Budget* ○ *Deadline: Wednesday, October 22*
3	October 27-31 • *Literature Review* ○ *Deadline: Friday, November 7*
4	November 3-7 • *Literature Review revisions* • *Meeting with Dr. Byrd & Rahel*
5	November 10-14 • *Meeting with Dr. Downey – Wednesday, 3:30 PM: instrument review* • *MAS Abstract submission* ○ *Deadline: Friday, November 14*
6	November 17-21 • *Review of Literature, Instrument, Collect information to send out surveys*
	Thanksgiving
7	January 5-9 • *Send out survey to children* *Deadline: Friday, January 9*
8	January 12-16 • Methods/Data Collection
9	January 20-23 • Methods/Data Collection
10	January 26-30 • Methods/Data Collection
11	February 2-6 • Data entry
12	February 9-13 • Data analysis
13	February 16-20 • Data analysis
14	February 23-27 • *MAS Meeting* ○ *Thursday & Friday, February 26 & 27*
15	March 2-6
	Spring Break
16	March 16-20
17	March 23-27
18	March 30-April 3

19	April 6-10
20	April 13-17
21	April 20-24

MAFES Undergraduate Research Scholar Program

Effect of a week-long cooking camp on self-efficacy of dietary behaviors and food preparation skills in children

Budget, October 27, 2014

Anna Laurin Harrison
alh715
904-874-032

Total Funding	$5,000.00
Expenses – Mentor travel/supplies	-$500.00
	$4,500.00
Expenses – Supplies	-$500.00
	$4,000.00
Expenses – Incentives	-$200.00
	$3,800.00
Expenses – Student travel/supplies	-$1,700.00
	$2,100.00
Student stipend	-$2,100

21 wks
10 hrs/week
210 hrs total
$10.00/hr = $2,100

Approved: 3/16/15 Expires: 2/01/20
IRB # 15-073

MISSISSIPPI STATE UNIVERSITY

Department of Food Science, Nutrition, and Health Promotion

<Date>

<Address>

Dear <Name of Parents>,

I hope <Name of Child> is having a great school year and is enjoying being in the kitchen. The *Fun with Food* 2014 summer camp staff at Mississippi State University loved getting to spend the week with <Name of Child>. We also hope it was a wonderful experience for <Name of Child>. The camp had many wonderful moments and great times that made the *Fun with Food* 2014 summer camp one to always remember.

My name is Anna Laurin Harrison and I was the *Fun with Food* 2014 Summer Camp Coordinator. I am currently an undergraduate research fellow in the Food Science, Nutrition, and Health Promotion department and plan to graduate in May with a B.S. in Nutrition. As a research fellow, I am required to complete a project under my advisor, Dr. Sylvia Byrd. The purpose of my research project is to collect data on the impact of children's participation in *Fun with Food* 2014 summer camp on dietary behavior and food preparation skills. On the first day of summer camp, children completed a questionnaire to provide information on their eating habits and food preparation skills. We have developed a follow-up survey for <Name of Child> to complete. Data from the first questionnaire and this follow up survey will be analyzed together for the research project. Responses will be kept confidential and will be stored on a password protected, university computer. Names will be replaced by code so there are no identifiers associated with the data.

The follow up survey is completely voluntary and your child may refuse to answer any questions or discontinue participation at any time. No risks are anticipated from participation in this survey. Completion of the follow up survey by your child indicates consent for your child to participate and their assent. If <Name of Child> does not want to complete the follow up survey they are not required to do so. However, if you agree for <Name of Child> to participate in this research project, please have <Name of child> complete the survey, and return the completed survey in the enclosed self-addressed stamped envelope by <Date>. A five dollar gift card to Walmart will be mailed to <Name of Child> for returning the completed survey.

In addition, we have included a brief follow up survey for parents on pages 2 and 3 of this booklet for feedback on the program. The parent survey is not for research purposes and data will not be analyzed for this research project. Please complete and return in the enclosed self-addressed stamped envelope after your child has completed their survey on pages 4-8. If <Name of Child> does not wish to complete the survey, you may still return this booklet with the completed parent survey. If you have any questions or concern, please contact Anna Laurin Harrison at alh715@msstate.edu or Dr. Byrd at 662-325-0919 or shb5@msstate.edu.

Sincerely,

Anna Laurin Harrison

Sylvia H. Byrd

Enclosure: Self-addressed stamped envelope

BOX 9805●MISSISSIPPI STATE, MS 39762-9805●PHONE 662.325.3200●www.mstate.edu/dept/fsnhp

Fun with Food 2014 Parent Follow up Survey

Dear Parent:

Because your child participated in the *Fun with Food* summer camp program in June 2014, we would like to learn your perspective on the program. If you had more than one child participate in 2014, please fill out a survey for each child.

This survey is voluntary. If you do not want to fill out the survey, you do not need to. **However, we hope you will take a few minutes to fill it out because your feedback is important to us** and will help us make improvements to the program.

This survey is confidential. Your answers will be summarized into reports to help improve *Fun with Food*. Please answer all of the questions as honestly as you can. If you are uncomfortable answering a question, you may leave it blank.

This is not a test. There are no right or wrong answers, and your answers will not affect your child's future participation in any way.

Thank you for your help! If you have any questions, you may contact Ms. Rahel Mathews, PhD student rm933@msstate.edu or Dr. Sylvia Byrd at shb5@msstate.edu, Professor in Food Science, Nutrition and Health Promotion and Director of *Fun with Food*.

Section I: Your child's participation in the Fun with Food program.

1. **How many years has your child participated in *Fun with Food*?** (Mark one box ☒.)
   - ☐ 2014 was his/her first year
   - ☐ 2014 was his/her second year
   - ☐ Three or more years

2. **Please indicate to what extent you agree or disagree that your child's experience in *Fun with Food* has resulted in the following outcomes.** (Select one response in each row by marking the appropriate box ☒.)

As a result of participating in *Fun with Food* program…	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
He/she learned the foods that he/she should eat every day.	☐	☐	☐	☐	☐
He/she learned what makes up a balanced diet.	☐	☐	☐	☐	☐
He/she learned why it is important for him/her to eat a healthy diet.	☐	☐	☐	☐	☐
He/she learned how to make healthy food choices.	☐	☐	☐	☐	☐
He/she eats chooses to eat more fruits and vegetables.	☐	☐	☐	☐	☐
He/she chooses to eat more whole grains.	☐	☐	☐	☐	☐
He/she chooses to drink more water.	☐	☐	☐	☐	☐
He/she encourages the family to buy local and seasonal foods.	☐	☐	☐	☐	☐
He/she encourages the family to eat meals together.	☐	☐	☐	☐	☐

PLEASE CONTINUE ON NEXT PAGE

Section II: Tell us what you think

3. **What did you like about the *Fun with Food* summer camp?**

   _____
   _____

4. **Do you have any suggestions for improving *Fun with Food* summer camp? If so, please share.**

   _____
   _____

5. **How did you hear about *Fun with Food*? (check all that apply)**
   - ☐ A friend
   - ☐ MSU website
   - ☐ Newspaper
   - ☐ Brochure/Flyer
   - ☐ Other: _____

6. **Please check the following ways you would like to receive follow-up information from *Fun with Food* summer camp. (Check all that apply)**
   - ☐ Website
   - ☐ Facebook
   - ☐ Flyer
   - ☐ Email newsletter

7. **May we contact you to participate in a focus group about children and food choices?**
   - ☐ Yes
   - ☐ No

Section III: Future *Fun with Food* efforts

Thanks to new funding from Kroger's, Dr. Byrd envisions expanding the *Fun with Food* program to an after school program for 4th and 5th grade students which would meet once a week throughout the school year. The program would be held on MSU's campus and children would be taken to campus by bus. There would be a nominal fee for registration around $25-$50. If your child is older, you may still provide input as you understand this age group.

8. **Would you be interested in your child attending a *Fun with Food* after-school program, located at the MSU campus?**
   - ☐ Yes
   - ☐ No – Please go to Question 11
   - ☐ I am not sure

9. **If yes, please indicate your preferred day(s) of the week for *Fun with Food* after-school program.**
   - ☐ Monday
   - ☐ Tuesday
   - ☐ Wednesday
   - ☐ Thursday
   - ☐ Friday
   - ☐ I do not have a preferred day of the week

10. **If yes, would you be interested in attending a *Fun with Food* activity along with your child?**
    - ☐ Yes
    - ☐ No
    - ☐ I am not sure

11. **What barriers would keep your child from participating in a *Fun with Food* after-school program?**

    _____
    _____

Thank you for participating in the survey.

MISSISSIPPI STATE UNIVERSITY

CAMPER FOLLOW UP SURVEY

Your Name: _____ Birthdate: _____
(Last) (First) (Month/Day/Year)

1. Circle: Boy / Girl

2. Which of the groups do you consider yourself to belong to? (Check all that apply)
   _____White / Non-Hispanic _____ African-American
   _____ Asian _____ Other: _____
   _____ Latino/Hispanic

3. What is your height? _____ feet, _____ inches

4. What is your weight? _____ pounds

5. About how many minutes each day do you exercise? _____

Section 1: ABOUT ME[1]

Please mark an X in the box of your answer like this ☒. Please mark only one box. There are no wrong answers.

1.	How much do you like to try new foods?	A lot ☐	A little ☐	Do not like to try new foods ☐	Really do not like to try new foods ☐	Don't know ☐
2.	How much do you like to cook?	A lot ☐	A little ☐	Do not like to cook ☐	Really do not like to cook ☐	Don't know – have never cooked ☐
3.	How much do you like to wash dishes?	A lot ☐	A little ☐	Do not like to wash dishes ☐	Really do not like to wash dishes ☐	Don't know – have never washed dishes ☐
4.	How would you rate yourself as a cook?	Great! ☐	Good ☐	Okay ☐	Not so good ☐	Don't know – have never tried cooking ☐

Continued on the next page…

Section 2: WHAT I DO[1]

Please mark one answer.

1. I drink milk with meals.	Every day ☐	Most days ☐	Sometimes ☐	Not very often ☐	Never ☐
2. I eat more than one kind of vegetable.	Every day ☐	Most days ☐	Sometimes ☐	Not very often ☐	Never ☐
3. I eat more than one kind of fruit.	Every day ☐	Most days ☐	Sometimes ☐	Not very often ☐	Never ☐
4. I drink sweetened beverages like soda, Gatorade, or Kool-Aid.	Every day ☐	Most days ☐	Sometimes ☐	Not very often ☐	Never ☐
5. I helped prepare a meal at home last week.	Every day ☐	Most days ☐	Sometimes ☐	Not very often ☐	Never ☐
6. I prepared a snack at home last week.	Every day ☐	Most days ☐	Sometimes ☐	Not very often ☐	Never ☐

Section 3: WHAT I KNOW

Please mark one answer.

1. Which food groups should be on half of your plate?	Grains ☐	Vegetables & Fruit ☐	Dessert ☐	Milk ☐	Meat or beans ☐
2. Which of the following is <u>not</u> a whole grain?	Popcorn ☐	Whole wheat bread ☐	White Rice ☐	Oatmeal ☐	Brown rice ☐
3. Which of the following is <u>not</u> a physical activity?	Playing a relay game ☐	Watching TV ☐	Dancing ☐	Playing soccer ☐	Walking to school ☐
4. What is the <u>best</u> way to get your hands really clean?	Rinse them with cold water ☐	Wash them with soap and warm water ☐	Rinse them with hot water ☐	Use hand sanitizer ☐	Wipe them with a towel ☐
5. At "Fun with Food" camp, I learned that food begins in a…	Grocery store ☐	Garden or Farm ☐	Restaurant ☐	Refrigerator ☐	Pantry at Home ☐

Please mark one answer.

1. Washing your hands before cooking keeps you from getting sick.	True ☐	False ☐	Not sure ☐
2. MyPlate can be used as a guide to plan a balanced meal.	True ☐	False ☐	Not sure ☐
3. Kids need at least an hour of physical activity every day to be healthy.	True ☐	False ☐	Not sure ☐
4. You can use color to choose a variety of fruits and vegetables every day.	True ☐	False ☐	Not sure ☐

Continued on the next page…

Section 4: How Sure[2]

Please mark one answer. How sure are you that you can…

1. Make a vegetable salad with help from a grown-up?	Not at all sure ☐	A little sure ☐	Very sure ☐
2. Make a vegetable salad all by myself?	Not at all sure ☐	A little sure ☐	Very sure ☐
3. Make a fruit salad with help from a grown-up?	Not at all sure ☐	A little sure ☐	Very sure ☐
4. Make a fruit salad all by myself?	Not at all sure ☐	A little sure ☐	Very sure ☐
5. Follow a recipe with help from a grown-up?	Not at all sure ☐	A little sure ☐	Very sure ☐
6. Follow a recipe all by myself?	Not at all sure ☐	A little sure ☐	Very sure ☐
7. Cut up vegetables and eat them with a dip for a snack at least once a week?	Not at all sure ☐	A little sure ☐	Very sure ☐
8. Cut up vegetables and eat them with a dip for a snack most days?	Not at all sure ☐	A little sure ☐	Very sure ☐
9. Eat a half cup of fruit at home once a week?	Not at all sure ☐	A little sure ☐	Very sure ☐
10. Eat a half cup of fruit at home most days?	Not at all sure ☐	A little sure ☐	Very sure ☐
11. Eat one and a half cups of fruit at home once a week?	Not at all sure ☐	A little sure ☐	Very sure ☐
12. Eat one and a half cups of fruit at home most days?	Not at all sure ☐	A little sure ☐	Very sure ☐
13. Eat a half cup of vegetables at home once a week?	Not at all sure ☐	A little sure ☐	Very sure ☐
14. Eat a half cup of vegetables at home most days?	Not at all sure ☐	A little sure ☐	Very sure ☐

Continued on the next page…

Please mark one answer. How sure are you that you can…

15. Eat two and a half cups of vegetables at home once a week?	Not at all sure ☐	A little sure ☐	Very sure ☐
16. Eat two and a half cups of vegetables at home most days?	Not at all sure ☐	A little sure ☐	Very sure ☐
17. Eat one serving of whole grains at home once a week?	Not at all sure ☐	A little sure ☐	Very sure ☐
18. Eat one serving of whole grains at home most days?	Not at all sure ☐	A little sure ☐	Very sure ☐
19. Eat six servings of whole grains at home once a week?	Not at all sure ☐	A little sure ☐	Very sure ☐
20. Eat six servings of whole grains at home most days?	Not at all sure ☐	A little sure ☐	Very sure ☐
21. Drink one cup of milk at home once a week?	Not at all sure ☐	A little sure ☐	Very sure ☐
22. Drink one cup of milk at home most days?	Not at all sure ☐	A little sure ☐	Very sure ☐
23. Drink three cups of milk at home once a week?	Not at all sure ☐	A little sure ☐	Very sure ☐
24. Drink three cups of milk at home most days?	Not at all sure ☐	A little sure ☐	Very sure ☐
25. Walk, bike, or be very physically active for 30 minutes once a week?	Not at all sure ☐	A little sure ☐	Very sure ☐
26. Walk, bike, or be very physically active for 30 minutes most days?	Not at all sure ☐	A little sure ☐	Very sure ☐
27. Walk, bike, or be very physically active for 60 minutes once a week?	Not at all sure ☐	A little sure ☐	Very sure ☐
28. Walk, bike, or be very physically active for 60 minutes most days?	Not at all sure ☐	A little sure ☐	Very sure ☐

Continued on the next page…

Section 5: Healthy Choices[3]

Please mark one answer. How hard would it be for you to…

1.	Eat fruit for a snack	Not hard at all ☐	A little hard ☐	Very hard ☐
2.	Eat vegetables for a snack	Not hard at all ☐	A little hard ☐	Very hard ☐
3.	Choose water instead of soda or Kool-Aid when you are thirsty	Not hard at all ☐	A little hard ☐	Very hard ☐
4.	Drink milk or water instead of a sweet drink	Not hard at all ☐	A little hard ☐	Very hard ☐
5.	Choose a small instead of a large order of French fries	Not hard at all ☐	A little hard ☐	Very hard ☐
6.	Eat smaller servings of high fat foods like French fries, chips, snack cakes, cookies, or ice cream	Not hard at all ☐	A little hard ☐	Very hard ☐
7.	Eat a low-fat snack like pretzels instead of chips	Not hard at all ☐	A little hard ☐	Very hard ☐
8.	Drink less soda, Gatorade, or Kool-Aid	Not hard at all ☐	A little hard ☐	Very hard ☐

Section 6: Because I went to "Fun with Food" camp…[3]

1.	I learned the foods that I should eat every day.	Strongly agree ☐	Agree ☐	Disagree ☐	Strongly disagree ☐
2.	I learned what makes up a balanced diet.	Strongly agree ☐	Agree ☐	Disagree ☐	Strongly disagree ☐
3.	I learned why it is important for me to eat a healthy diet.	Strongly agree ☐	Agree ☐	Disagree ☐	Strongly disagree ☐
4.	I learned how to make healthy food choices.	Strongly agree ☐	Agree ☐	Disagree ☐	Strongly disagree ☐
5.	I eat more fruits and vegetables.	Strongly agree ☐	Agree ☐	Disagree ☐	Strongly disagree ☐
6.	I eat more whole grains.	Strongly agree ☐	Agree ☐	Disagree ☐	Strongly disagree ☐
7.	I try new foods.	Strongly agree ☐	Agree ☐	Disagree ☐	Strongly disagree ☐
8.	I encourage my family to buy local and seasonal foods.	Strongly agree ☐	Agree ☐	Disagree ☐	Strongly disagree ☐
9.	I drink more water.	Strongly agree ☐	Agree ☐	Disagree ☐	Strongly disagree ☐
10.	I encourage my family to eat meals together.	Strongly agree ☐	Agree ☐	Disagree ☐	Strongly disagree ☐

About how much help did you have on this survey? My parent(s)…	Did not help ☐	Helped a little ☐	Helped a lot ☐	Completed the survey ☐

Thank you for your participation!

[1]Adapted from Smith, D., Horowitz, M., Neelon, M., Spezzano, T., Lippitt, N., McMurdo, T., & Kaiser, L. (2012). Evaluation Form. In *Healthalicious Cooking: Learning about Food and Physical Activity* (publication 8449, pp. 12-14). University of California.
[2]Adapted from *Domel, Thompson, Davis, T. Baranowski, Leonard, J. Baranowski. Health Education Research, 1996:00:299-308*
[3]Adapted from *4-H Common Measures 4 TH – 7 TH Grade Healthy Living Items*. 1st ed. University of the District of Columbia, College of Agriculture, Urban Sustainability, & Environmental Sciences. Web. 2014.

MISSISSIPPI STATE UNIVERSITY HUMAN RESEARCH PROTECTION PROGRAM	Modifications to Approved Human Subjects Research Version: 02.24.2015

IRB Study # 15-073

Principal Research/Investigator: Anna Laurin Harrison

Choose all that apply. Corresponding sections will populate below. Please complete all fields.

☐ Closing Report ☐ Continuation ☐ Personnel Modification ☒ Procedural Modification

The Procedural Modification should be used by Principal Investigators to request a change in procedures.
Please note: This form may NOT be used for personnel changes or time extensions

1. Summarize / Itemize requested changes and provide a justification for each.

I am requesting to send follow up emails and text messaging to parents of the subjects as a reminder to return the survey to increase response rate.

2. Do changes require revisions to the assessment of risk of harm to the subjects?

☐ Yes - if yes, explain

☒ No

3. Do changes require revisions to the methods of ensuring anonymity or confidentiality?

☐ Yes - if yes, explain

☒ No

4. Are there new findings that may relate to a participant's willingness to continue taking part in the research study?

☐ *If yes, explain whether these findings need to be provided to participants, and if so, how this will be accomplished.*

☒ No

5. Do changes require a REVISED CONSENT statement or procedure?

☐ *If yes, attach a revised consent form with the changes tracked, and a clean copy for the IRB approval stamp.*

☒ No

Name of Principal Investigator / Researcher:

Signature | Date March 25, 2015

Name of Advisor (if applicable):

Signature Sylvia H Boyd | Date March 25, 2015

**Note: You must receive written notification of approval from the IRB before implementing any changes (except when necessary to eliminate apparent immediate hazards to the subject).*

Control/Tracking Number: 15-RA-1634-ADA
Activity: Research Abstracts
Current Date/Time: 2/27/2015 8:51:45 PM

Effect of a Week-long Camp on Self-efficacy of Dietary Behavior and Food Preparation Skills in Children

Author Block: A. L. Harrison[1], S. H. Byrd, PhD, RDN, LDN[1], L. Downey, PhD[2], D. Buys, PhD[1], R. Mathews, M.S.[1]; [1]Food Science, Nutrition, and Health Promotion, Mississippi State Univ., Mississippi State, MS, [2]School of Human Sciences, Mississippi State Univ., Mississippi State, MS.

Abstract:
Over the last three decades consumption of foods eaten or prepared outside the home increased and conversely less time was spent preparing meals at home. These trends combined with increased prevalence of diet- and lifestyle-related chronic diseases focus the need for edible education or teaching about food, meal planning, purchasing ingredients, food preparation skills, and nutritional meals. Cooking camps are an effective intervention for improving nutritional status and eating behaviors of children. Twenty participants, 8-13 year olds in 2014 Fun with Food summer camp, a week-long program aimed at increasing self-efficacy in food preparation skills, were evaluated. Application of Social Cognitive Theory as it relates to self-efficacy of food preparation and dietary behavior change was utilized. IRB approval was obtained. Participants were given a pre-survey and follow up survey. Self-efficacy was measured by standardized questions reflecting the level of confidence in performing a food- or kitchen-related task. The pre- and follow up surveys were analyzed for changes in self-efficacy of food preparation and dietary behaviors resulting from participation in Fun with Food Camp. Sixty percent of camp participants were females. Initial data reveals involving children in food preparation can positively affect self-efficacy and dietary behaviors. Additional research is needed to determine if food-preparation skills translate to sustainable and healthier food choices.
:

Author Disclosure Information: A.L. Harrison: None.
Learning Needs Codes (Complete): 6040 Education theories and techniques for children and adolescents ; 6010 Behavior change theories, techniques
Additional Information (Complete):
Learning Outcome : To recognize the importance of edible education and teaching of food preparation skills to bring about positive dietary behavior change and increasing self-efficacy
Funding Source : Mississippi Agricultural and Forestry Experiment Station.
Faculty advisor Name: : Sylvia H. Byrd, PhD, RDN, LDN
Email: : shb5@msstate.edu
Phone: : (662)325-0919

Status: Complete

Name: Haley, Bryant

Major: Wildlife & Fisheries Science/Aquaculture & Fisheries Science
Faculty Advisor Name: Wes Neal
Faculty Advisor Affiliation: Wildlife, Fisheries, and Aquaculture
Faculty Advisor Email: jneal@cfr.msstate.edu
Project Type: Poster
Project Category: Biological Sciences and Engineering
Community Engagement Track: No

Project Title: Spatio-temporal distributions of the zooplankton comunity in a Puerto Rico reservoir

Abstract: Zooplankton provide an essential forage base for the development and maintenance of a balanced recreational fishery. As the second tier in the aquatic food web, their importance cannot be overlooked. Little scrutiny has been given to zooplankton dynamics in tropical reservoirs in general and particularly those in Puerto Rico. This study attempts to assess the movements of the zooplankton community within Carite reservoir, Puerto Rico. Data collection began in June 2011 and was conducted for a period of one year. Comparisons evaluated within the study include habitat preference, by comparing littoral and limnetic zones; diel movement, by sampling at 12-hour intervals; and seasonal trends within the system. All zooplankton studied revealed their highest abundances in the fall, though the number of rotifers dwarfed copepods and cladocerans and consistently represented the largest abundances throughout the study. Diel period showed no effect on rotifers, however they were found in greatest abundance in limnetic habitats. Copepods, the next most abundant order, also showed a slight bias toward limnetic sites and were found in higher densities at dusk. Cladocera represented the least captured group and like the others were found in highest abundance during dusk samples. They showed no significant difference between habitat types.

Name: Harrison, Anna Laurin

Major: Human Sciences/Food Nutrition & Dietetics
Faculty Advisor Name: Sylvia Byrd, PhD, RDN, LDN
Faculty Advisor Affiliation: Food Science, Nutrition, and Health Promotion
Faculty Advisor Email: shb5@msstate.edu
Project Type: Poster
Project Category: Social Sciences
Community Engagement Track: No

Project Title: Effects of a week-long cooking camp on self-efficacy of dietary behavior and food preparation skills in children

Abstract: Over the last three decades consumption of foods eaten or prepared outside the home increased and conversely less time was spent preparing meals at home. These trends combined with increased prevalence of diet- and lifestyle-related chronic diseases focus the need for edible education, meal planning, purchasing ingredients, food preparation skills, and nutritional meals. Cooking camps are effective interventions for improving nutritional status and eating behaviors of children. Fun with Food, a week-long summer camp aimed at increasing self-efficacy in food preparation skills, at Mississippi State University has been offered for the last eight years. Twenty 8-13 year olds in 2014 Fun with Food summer camp participated in a pre-survey administered the first day of camp, as well as a 9-month follow-up survey. IRB approval was obtained. Application of Social Cognitive Theory as it relates to self-efficacy of food preparation and dietary behavior change was utilized. Self-efficacy was measured by standardized questions reflecting the level of confidence in performing a food- or kitchen-related task. The pre- and follow up surveys were analyzed for changes in self-efficacy of food preparation and dietary behaviors resulting from participation in Fun with Food Camp. Sixty percent of camp participants were females. Prior to attending camp, only thirty-five percent of participants were confident in their ability to follow a recipe without help. Sixty percent of participants were not sure they could eat a half cup of vegetables or one serving of whole grains at home most days. Data revealed that involving children in food preparation can positively affect self-efficacy and dietary behaviors. Additional research is needed to determine if food-preparation skills translate to sustainable and healthier food choices.

A.L. Harrison
URSP
3-15-2015
Updated Timeline

MARCH

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			18	19	20	21
22	23	24	25	26	27	28
				MSAND	MSAND	
29	30	31	1	2	3	4
				Undergrad Symposium Abstract Deadline		

APRIL

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5	6	7	8	9	10	11
12	13	14	15	16	17	18
				CALS	CALS	CALS
19	20	21	22	23	24	25
				Symposium		
26	27	28	29	30		

IRB Study #: 15-073

Email to Parents of Participants in *Fun with Food* 2014 Summer Camp - Draft

Dear <Name of Parent(s)>,

My name is Anna Laurin Harrison and I was the 2014 *Fun with Food* Summer Camp Coordinator. As part of an undergraduate research project, I mailed you a survey to be completed by you and your child. This is a reminder to return the survey booklet by <Date> or before in order for your child to receive the gift card. If you did not receive a survey in the mail please contact me.

If you have any questions or concern, please contact Anna Laurin Harrison at alh715@msstate.edu or Dr. Byrd at 662-325-0919 or shb5@msstate.edu.

Thank you!

Anna Laurin Harrison

Effects of a Week-long Cooking Camp on Self-efficacy of Dietary Behavior and Food Preparation Skills in Children

A.L. Harrison[1], S.H. Byrd, PhD, RDN, LDN[1], L. Downey, DrPH[2], D. Buys, PhD, MSPH[1], R. Mathews, MPH.[1]

[1]Food Science, Nutrition, and Health Promotion, [2]School of Human Sciences, Mississippi State University, Mississippi State, MS.

For more information, please contact
Anna Laurin Harrison (alh715@msstate.edu)

Background

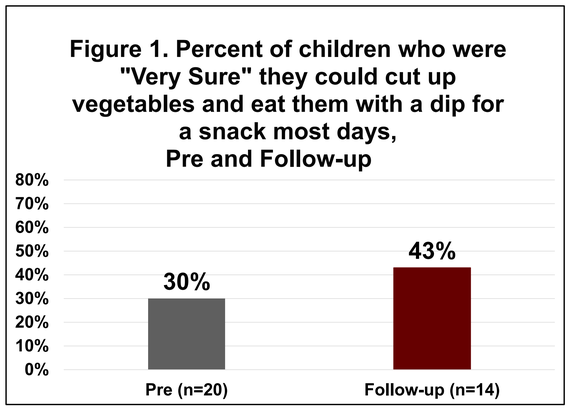
Over the last three decades consumption of foods eaten or prepared outside the home increased and conversely less time was spent preparing meals at home. As a result, dietary behavior changed and knowledge of food preparation skills decreased. These trends combined with increased prevalence of diet and lifestyle-related chronic diseases bring to focus the need for edible education. Cooking camps are effective interventions for improving nutritional status and eating behaviors of children. *Fun with Food*, a week-long summer camp aimed at increasing self-efficacy in dietary behaviors and food preparation skills, at Mississippi State University (MSU), has been offered for the last eight years. **The goal of this research was to determine if participation in *Fun with Food* increased self-efficacy in children.**

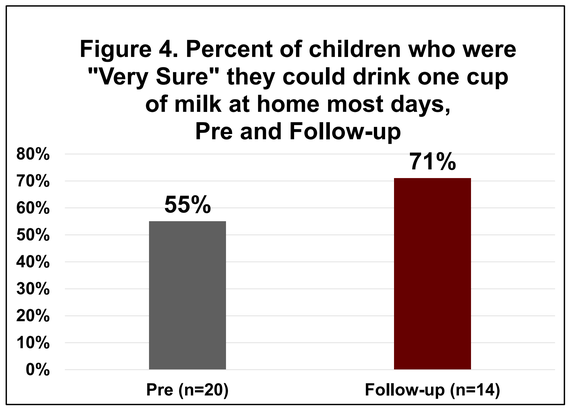
Methods

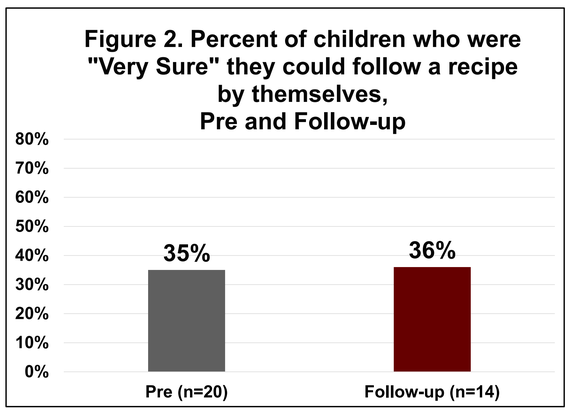
Application of the Social Cognitive Theory as it relates to self-efficacy of food preparation and dietary behavior change was used to develop a survey[1] of 28 items. The study was approved by the MSU Institutional Review Board. In 2014, 20 eight- to thirteen-year-olds participated in *Fun with Food* summer camp. A pre-survey was administered the first day of camp. A nine-month follow-up survey was mailed to campers. Self-efficacy was measured by six standardized items reflecting the level of confidence in performing a dietary behavior or food preparation skill. Children rated themselves as either “Very Sure”, “A Little Sure” or “Not at all Sure.” The scale was collapsed to show the difference in how many children were “Very Sure” before and after camp for this project. Descriptive statistics were run for the pre and follow-up surveys. Confidence intervals were constructed and compared. The analysis was conducted in IBM SPSS 22.

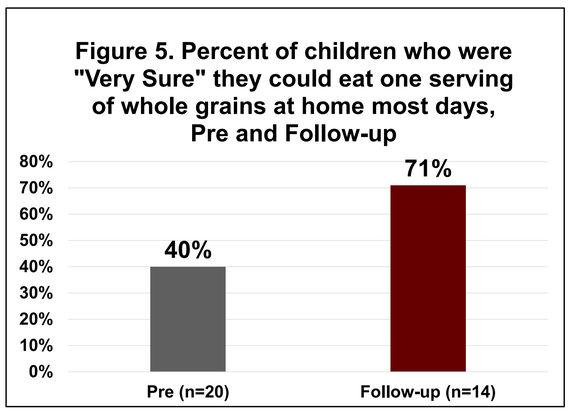
[1]The “How Sure” scale was adapted from Domel, Thompson, Davis, T. Baranowski, Leonard, J. Baranowski. Health Education Research, 1996:00:299-308.

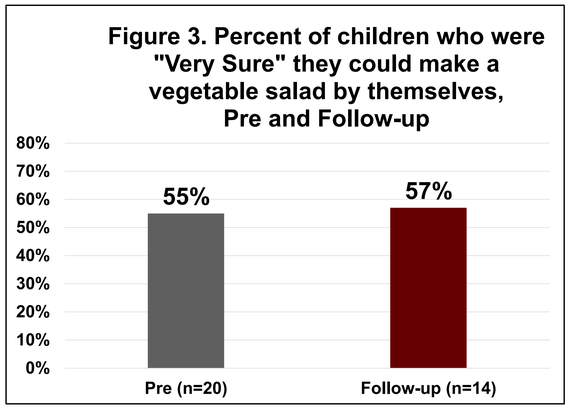
Results

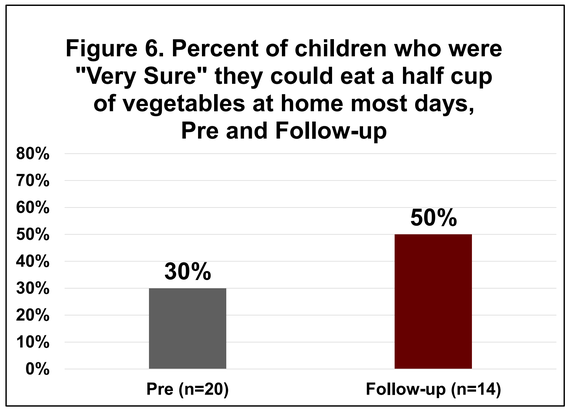










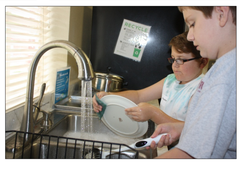












Discussion

The results revealed the food preparation skills and dietary behaviors children feel the most confident performing after participation in *Fun with Food* camp. Dietary intake and recommendations to increase consumption of vegetables, whole grains, and dairy are tenants of the camp curriculum. There were no statistically significant differences ($p < 0.05$) for the six items investigated between the pre and follow-up surveys, as indicated by overlapping 95% Confidence Intervals. However, it is notable the percent of children who were “Very Sure” about vegetable, whole grain, and dairy consumption increased after camp participation. Confidence in vegetable, whole grain, and dairy consumption (Figures 4-6) showed greater increase than confidence of food preparation (Figures 1-3). A limitation of this study was sample size (n=20). Anecdotal reports suggest sustained change in some participants and merits additional study.

Conclusion

The results from this study will be useful in *Fun with Food* camp program evaluation and curriculum development. Ongoing research includes data collection with a larger sample size and investigation on how camp participation impacts families. Experiential learning can bridge the gap between lack of food preparation skills and positive dietary behaviors.

The project was funded by the Mississippi Agricultural and Forestry Experiment Station (MAFES) Undergraduate Research Scholars Program.

Camp sponsors include Kroger®, Mississippi Cattleman’s Association, Aramark®, Mayhew Tomato Farm, and MSU Department of Animal and Dairy Science.

MISSISSIPPI STATE UNIVERSITY

To Whom It May Concern

From: Anna Laurin Harrison

Faculty Supervisor: Sylvia Byrd

The attached receipt reflects the purchase of 14 gift cards for $5 each to be mailed as incentive to participants in a research study. The recipients are listed below. Please contact Anna Laurin (alh715) or Dr. Byrd with questions (shb5).

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.

Effects of a Week-long Cooking Camp on Self-efficacy of Dietary Behavior and Food Preparation Skills in Children

A.L. Harrison[1], S.H. Byrd, PhD, RDN, LDN[1], L. Downey, DrPH[2], D. Buys, PhD, MSPH[1], R. Mathews, MPH.[1]

[1]Food Science, Nutrition, and Health Promotion, [2]School of Human Sciences, Mississippi State University, Mississippi State, M

Background

Over the last three decades consumption of foods eaten or prepared outside the home increased and conversely less time was spent preparing meals at home. As a result, dietary behavior changed and knowledge of food preparation skills decreased. These trends combined with increased prevalence of diet and lifestyle-related chronic diseases bring to focus the need for edible education. Cooking camps are effective interventions for improving nutritional status and eating behaviors of children. *Fun with Food*, a week-long summer camp aimed at increasing self-efficacy in dietary behaviors and food preparation skills, at Mississippi State University (MSU), has been offered for the last eight years. **The goal of this research was to determine if participation in *Fun with Food* increased self-efficacy in children.**

Methods

Application of the Social Cognitive Theory as it relates to self-efficacy of food preparation and dietary behavior change was used to develop a survey[1] of 28 items. The study was approved by the MSU Institutional Review Board. In 2014, 20 eight- to thirteen-year-olds participated in *Fun with Food* summer camp. A pre-survey was administered the first day of camp. A nine-month follow-up survey was mailed to campers. Self-efficacy was measured by six standardized items reflecting the level of confidence in performing a dietary behavior or food preparation skill. Children rated themselves as either "Very Sure", "A Little Sure" or "Not at all Sure." The scale was collapsed to show the difference in how many children were "Very Sure" before and after camp for this project. Descriptive statistics were run for the pre and follow-up surveys. Confidence intervals were constructed and compared. The analysis was conducted in IBM SPSS 22.

[1]The "How Sure" scale was adapted from Domel, Thompson, Davis, T. Baranowski, Leonard, J. Baranowski, Health Education Research, 1998;00:299-308

Results

Figure 1. Percent of children who were "Very Sure" they could cut up vegetables and eat them with a dip for a snack most days, Pre and Follow-up

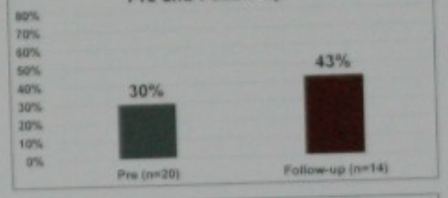


Figure 2. Percent of children who were "Very Sure" they could follow a recipe by themselves, Pre and Follow-up

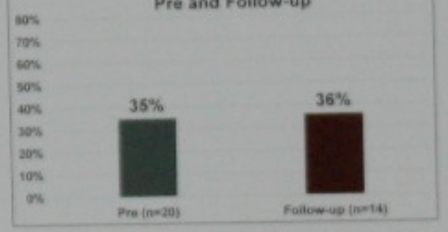


Figure 3. Percent of children who were "Very Sure" they could make a vegetable salad by themselves, Pre and Follow-up

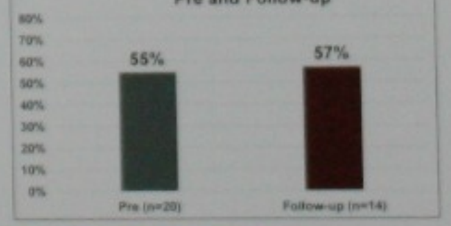


Figure 4. Percent of children who were "Very Sure" they could drink one cup of milk at home most days, Pre and Follow-up

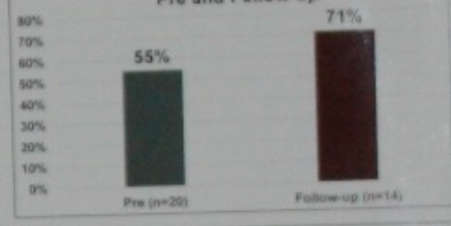


Figure 5. Percent of children who were "Very Sure" they could eat one serving of whole grains at home most days, Pre and Follow-up

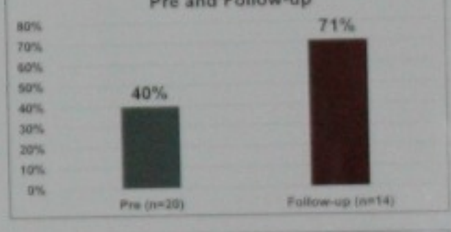
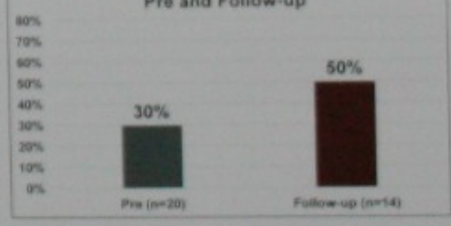


Figure 6. Percent of children who were "Very Sure" they could eat a half cup of vegetables at home most days, Pre and Follow-up



The project was
Forestry Experim
Research Scholar

Camp sponsors
Association, Ara
Department of


Mississippi State University
Presents This Certificate of Recognition to
Anna Laurin Harrison