INCREASING HEALTHY EATING BEHAVIORS AMONG COLLEGE STUDENTS

by

ANDREA MICHELLE BRACE

(Under the Direction of Marsha Davis)

ABSTRACT

This study analyzes the impact of a stealth nutrition intervention on increasing healthy eating behaviors among college students. A stealth intervention focuses on health behavior change via process motivation to change behavior without an explicit emphasis on health-related outcomes. The intervention was delivered through a 15-week, discussion-based seminar (n=29) that used contemporary readings to explore macro-scale influences on food, nutrition, and eating behavior. Two levels of control were used; a health-based course (n=114), and a non-health based course (n=48). The intervention was a modified replication study developed at Stanford University, and used a quasi-experimental, mixed-methods, pre-post design. The goal of the intervention was to improve healthy eating behaviors, including eating more fruits and vegetables, while eating less high-fat meat, high-fat dairy, processed foods and sweets. Surveys were administered at the beginning and end of the semester to all classes (n=191), and focus groups were conducted with intervention participants (n=28) at the end of the semester. Survey data included demographics, BMI, food purchasing and eating habits, and Stages of Change and self-efficacy measures. Quantitative data were analyzed using descriptive statistics and ANOVA. Focus group data were analyzed using constant comparative analysis. Survey findings indicate that intervention participants had statistically significant increases in purchasing local and organic produce, direct from the producer, and grass-fed beef. Additionally, significant increases in the beliefs in the

importance of animal rights were detected. Results from the focus groups support these findings, with participants relating these changes to the themes discussed throughout the class. The results suggest that the stealth intervention was successful at promoting healthy eating behaviors among college students.
INDEX WORDS: Stealth nutrition intervention, Process motivation, College students

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DEDICATION

I would like to dedicate this dissertation to my husband. Without his support, encouragement, and sacrifice I would not have been able to complete this dissertation. Whenever I needed another point of view, motivation, suggestions, a night off from cooking, or anything else, he was there whole-heartedly and without question.

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CHAPTER1:

INTRODUCTION

The prevalence of obesity among adolescents ages 12 to 19 years has nearly quadrupled in the United States since 1980 (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). For those between the ages of 18-29 years, the prevalence of obesity was 20.3% in 2009 (Centers for Disease Control and Prevention, 2010). Further, approximately 32% of students attending the University of Georgia were overweight or obese in 2009 (ACHA-NCHA, 2009).

Overweight and obesity are a concern among college students because they are transitioning from the structured environment of living at home with their parents to living independently among their peers (Nelson, Kocos, Lytle, & Perry, 2006). This new freedom can result in eating more unhealthy foods and being less physically active (Butler, Black, Blue, & Gretebeck, 2004; Kapinos & Yakusheva, 2011). Additionally, approximately 30% of the youth in the United States do not receive essential health education information while attending elementary, middle, and high school (Kann, Tell, & Wooley, 2007). This lack of health education coupled with a new, unrestricted lifestyle influences rates of overweight and obesity among college students. Research has shown that educating youth about nutrition provides them with the skills to make healthy food choices (Centers for Disease Control and Prevention, 1996). The goal of this study is to evaluate a stealth nutrition curriculum, which aims to increase healthy eating among undergraduate college students attending the University of Georgia.

Significance of the Study

This proposal addresses the growing problem of obesity in the United States, focusing specifically on college students. Since 2000, results from fewer than 30

nutrition intervention studies among college students have been published in peer-reviewed journals. The majority of these interventions aim to increase healthy eating using traditional study designs where health-related outcomes are used as motivators to increase healthy eating. Traditional interventions commonly teach participants skills specifically related to the target behavior under investigation. Examples of traditional interventions are teaching participants how to effectively read food labels to increase healthy food choices (Kolodinsky, Green, Michahelles, & Harvey-Berino, 2008), instructing students on proper portion sizes using food models (Brown & Oler, 2000), and teaching cooking skills (Levy & Auld, 2004). Traditional nutrition interventions have been effective in increasing healthy eating.

This study aims to evaluate the effectiveness of a stealth nutrition curriculum implemented among college students. A stealth nutrition curriculum is an innovative method to increase healthy eating behaviors, which aims to change behavior through motivating processes without focusing on the specific behavior to be changed. In other words, participants are not aware that the goal of the curriculum is to increase healthy eating. Traditional nutrition interventions are the most common type of intervention implemented among college students. Only one published study has evaluated the innovative stealth nutrition intervention, and this study aims to replicate it (Hekler, Gardner, & Robinson, 2010). This demonstrates a gap in the research regarding stealth nutrition curriculums implemented among college students. This study will enhance the body of knowledge in this area and will be important in the development of future interventions, which aim to increase healthy eating behaviors among college students. Increasing the intake of fruits, vegetables, and low-fat dairy while decreasing high-fat meat, processed food and fast food can serve as a mechanism to decrease rates of obesity.

Purpose of the Study and Research Questions

The purpose of this study is to evaluate the effectiveness of a stealth nutrition curriculum delivered to undergraduate college students attending the University of Georgia. The curriculum was originally developed and implemented at Stanford University (Hekler et al., 2010). This study is an adapted replication study to test the curriculum on a new population of college students.

This study evaluates the impact that Food, Society, and Public Health (HPRB 5160) had on increasing healthy eating. Food, Society, and Public Health was an upper-level, 15-week course taught undergraduate students attending the University of Georgia. The course was delivered during the spring of 2012, was open to any undergraduate student attending the University of Georgia, and was promoted across the Athens campus. Throughout the semester, students read articles and books and watched documentaries that focused on macro-level influences on the food system and food production. The course touched on ethics, animal rights, religion, food policy, the environment, and government and their influences on the current food culture in the United States. Each week, the students participated in student-led, in-depth discussions of the topics presented in the readings and documentaries. The students participated in weekly online discussions of the material to ensure they were fully engaged in the topics each week. Additionally, students researched and prepared an op-ed article advocating for a topic discussed in class, and prepared and presented an advocacy video to the class.

The goal of this study was to increase the intake of fruits and vegetables, while decreasing the consumption of high-fat dairy, high-fat meat, processed food, and sweets among college students. Research indicates that nutrition education can increase knowledge, attitudes, and self-efficacy regarding healthy food choices (Guillaumie, Godin, & Vézina-Im, 2010; Hekler et al., 2010; S. R. Levy, Iverson, & Walberg, 1980;

Louis, Chan, & Greenbaum, 2009; Sheperd & Towler, 2007). This research aimed to educate undergraduate college students about healthy food choices through process motivation, affecting their beliefs and behaviors related to healthy eating. The hypothesis of this study states that informing the students about the current food culture will change their beliefs regarding food production and food consumption, ultimately resulting in a change in food preference and food choices. Two types of courses served as a control for Food, Society, and Public Health, a health-control and a non-health control. Both courses were open to students from any college or major, and both courses were implemented during the same semester. The first course, Health and Wellness (HPRB 1710) served as the health-control. Health and Wellness introduces various health concepts over the 15-week semester. Topics could include alcohol, tobacco, drugs, sexual health, physical activity, nutrition, cancer, mental health, as well as other topics. The non-health control courses were courses delivered in the English department. The English courses did not deliver any health-related material during the semester. The questions that guided this study are as follows:

1. Is the Food, Society, and Public Health curriculum more effective than the control courses in increasing healthy food purchasing behaviors?
2. Is the Food, Society, and Public Health curriculum more effective than the control courses in increasing the consumption of fruits and vegetables?
3. Is the Food, Society, and Public Health curriculum more effective than the control courses in decreasing the consumption of high-fat meat, high-fat dairy, processed food, and sweets?
4. Is the Food, Society, and Public Health curriculum more effective than the control courses in increasing self-efficacy related to eating healthy food?

5. Is the Food, Society, and Public Health curriculum more effective than the control courses in increasing participants' readiness to change in healthy eating than students in the control groups?
6. Is the Food, Society, and Public Health curriculum more effective than the control courses in increasing participants' beliefs about the importance of healthy behaviors?

The answers to these questions will inform future nutrition interventions to reduce dietary risk factors for overweight and obesity.

If the aims of this project were achieved, students would increase their intake of healthy foods including fresh fruits and vegetables, while decreasing their intake of processed foods, sweets, high-fat dairy, and high-fat meat. These changes would protect undergraduate students attending the University of Georgia against overweight and obesity.

CHAPTER 2:

REVIEW OF THE LITERATURE

The purpose of this literature review is to provide background information regarding overweight and obesity, to examine nutrition interventions conducted among college students, and to review the stealth nutrition curriculum that is the foundation of this study. This chapter has six sections: 1) healthy eating, 2) overweight and obesity, 3) influence that attending college can have on weight gain, 4) critique of the literature of nutrition interventions implemented among college students, 5) behavioral constructs that guided this research, and 6) review of the research replicated in this study.

2.1. Healthy Eating

Healthy eating is a protective factor against overweight and obesity. Healthy eating focuses on consuming nutrient-dense foods while limiting intake of sodium, solid fats, added sugars, and refined grains (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2011). Nutrient dense foods include fruits, vegetables, whole grains, low-fat dairy, low-meat, legumes, and nuts and seeds. Federal guidelines state Americans should increase fruit and vegetable intake, consume at least half of all grains as whole grains, increase fat-free or low-fat dairy intake, replace high-fat proteins with low-fat alternatives, use oils to replace solid fats, and limit sodium, cholesterol, saturated fat, and foods made with solid fats, added sugars, and refined grains (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2011).

Trend data reveal that American diets are declining in healthy food choices. Between 2000 and 2009, the overall prevalence of eating fruit two or more times a day significantly decreased (34.4% to 32.5%; $p < .05$) and eating vegetables three or more

times a day slightly decreased (26.7% to 26.3%) (Grimm, Blanck, Scanlon, Moore, & Grummer-Strawn, 2010). Additionally, the consumption of fat and excess calories often found in processed food and high-fat food is increasing (Anderson, Winett, & Wojcik, 2007). On average, adolescents in the United States consume too much fat, saturated fat, and sodium and not enough fruits and vegetables (Centers for Disease Control and Prevention, 1996; Sloan, Legrand, & Chen, 2008). Data from the 2011 Youth Risk Behavioral Surveillance System reveal that of high school students, 11.7% reported not eating fresh fruits and 5.7% reported not eating vegetables during the past 7 days (Centers for Disease Control and Prevention, 2011). During this same time, only 14.4% of students reported eating vegetables 3 or more times per day, and 28.8% reported drinking soda at least once a day (Centers for Disease Control and Prevention, 2011). Youth obtain up to 35% of their calories from fat and approximately 13% from saturated fat, which exceeds the recommended levels and can result in overweight and obesity (Centers for Disease Control and Prevention, 1996). As children increase in age, the quality of their personal dietary choices decreases (Sloan et al., 2008; World Health Organization, 1998). The eating habits formed during adolescence remain with the youth through their college years and greatly affect their adult eating habits.

2.2 Overweight and Obesity

Overweight and obesity are ranges of body weight that are greater than what is healthy for a specified height (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2011). For adults, overweight and obesity are calculated using Body Mass Index (BMI), which is a ratio of height and weight. Overweight is defined as having a BMI between 25 and 29.9, and obesity is defined as having a BMI greater than 30. For children and teens aged 2-19 years, age-specific BMI percentiles are used.

Multiple contributing factors are associated with overweight and obesity. These factors include improper diet, lack of physical activity, genetics, the availability of calorie dense convenience foods lacking nutrition, family dynamics, peer relationships, media influences, and inadequate nutrition education (Anderson et al., 2007; Brener, Wheeler, Wolfe, Vernon-Smiley, & Caldart-Olson, 2007; Croll, Neumark-Sztainer, & Story, 2001; Hill & Trowbridge, 1998; Sloan et al., 2008; Stevenson, Doherty, Barnett, Muldoon, & Trew, 2007). Overweight and obesity cause many negative health conditions, including an increased risk of type-2 diabetes, high blood pressure and cholesterol, asthma, joint problems, and poor health status (Mokdad et al., 2003; National Institutes of Health, 1998).

Improper nutrition greatly increases the likelihood of an adolescent becoming overweight or obese. The prevalence of obesity among adolescents aged 12 to 19 years increased by 13.1% from 1980 to 2008, with a prevalence rate of 18.1% in 2008 (Ogden et al., 2010). In 2011, 15.2% of students were overweight and an additional 13% were obese (Centers for Disease Control and Prevention, 2011). For those between the ages of 18-29 years, the prevalence of obesity was 20.3% in 2009 (Centers for Disease Control and Prevention, 2010). Children and adolescents who are overweight or obese are often overweight or obese into adulthood (Hill & Trowbridge, 1998; Serdule et al., 1993). The upward trend in obesity in the United States is observed in males and females, among all ages, and in all ethnicities and races (Centers for Disease Control and Prevention, 2011; Ogden, Carroll, Kit, & Flegal, 2012).

2.3 Influence of College on Overweight and Obesity

Overweight and obesity rates often increase when adolescents leave home and enter college. Multiple research studies found that students gain weight during their first years of college due to a variety of reasons. These reasons are meals at school being less nutritious than home cooked meals; lack of parental oversight; increased availability

of food on campus; increased eating of cheaper, low-quality foods due to budget constraints; increased snacking and late night eating; lack of sleep resulting in a dependence on high-calorie energy drinks; and decreased physical activity (Baranowski et al., 1997; Butler et al., 2004; Delinsky & Wilson, 2008; Drewnowski, 2004; Malinauskas, Aeby, Overton, Carpenter-Abey, & Barber-Heidal, 2007; Nelson et al., 2006; Pliner & Saunders, 2008).

Lack of appropriate health education is another contributing factor to the increased prevalence of obesity in the United States. When students leave home to attend college, they are responsible for all of their food choices. They no longer have as much parental oversight in their food choices. Lacking proper nutrition information can set them up for poor dietary outcomes, including weight gain and nutritional deficiencies. An opportunity exists to educate students to ensure they make healthy food choices to reduce the probability of overweight and obesity.

Overweight and obesity are preventable health conditions (Mokdad et al., 2003). Nutrition education may protect against overweight and obesity by increasing healthy food choices. Eating fruits and vegetables protects against overweight and obesity and many other chronic diseases. Increased consumption of fruits and vegetables results in decreased cardiovascular risk and the risk of certain cancers, and it is inversely related to body weight and fat mass (Guillaumie et al., 2010). Educating college students about healthy food choices is one method to challenge the increasing obesity epidemic. The information college students receive can be integrated into their own life decisions, and it can be shared with others to increase their knowledge and ability to increase healthy eating choices.

2.4 Review of Intervention Studies

Articles included in this review were identified using systematic searches of multiple databases and reviews of bibliographic reference lists. GALILEO via the

University of Georgia Library was used to search the following databases: Academic Search Complete, Education Resources Information Center, Science Direct, and EBSCOhost. Search criteria included assessing nutritional interventions implemented among students attending United States colleges, written in English, and published since January 2000.

The search terms used include a combination of the following: (“Nutrition intervention” or "Nutrition education" or "Nutrition curriculum") and ("College" or "Undergraduate" or "Ages 18-24 years" or "University students" or "College Students") and ("Self efficacy" and "Self control" and "Dietary intake" or "Healthy eating" or "Healthy diet”). Twenty-three articles are included in this critique of nutrition interventions among college students.

Intervention Studies

This section includes a systematic and in-depth critique of nutrition interventions among college students. The components of this critique are: 1) participants and the sampling process, 2) descriptions of the interventions, 3) assessment instruments, 4) research design, 5) outcome measures, 6) results, and 7) methodological issues. Table 1 lists the authors, publication date, and the purpose of the 23 intervention studies.

Table 1
Summary of Articles in Critique

Authors	Date	Purpose
Abood, Black, & Birnbaum.	2004	Evaluate the efficacy of a nutrition education intervention for college athletes
Brown, & Oler.	2000	Determine if visually estimating of food portions could improve college students' estimates of food portions
Brown, Wengreen, Vitale, & Anderson	2011	Assess the effectiveness of vegetable demonstration videos and tasting experiences to influence students' readiness to change vegetable intake, self-efficacy for vegetable preparation, and vegetable intake
Clifford, Anderson, Auld, & Champ.	2009	Assess if a series of four 15-minute, theory-driven cooking programs improved cooking self-efficacy, knowledge, attitudes, and behaviors of fruit and vegetable intake.
Cottone, & Byrd-Bredbenner.	2007	Evaluate the effect of the film *Super Size Me* to alter the consumption of fast foods among college students.
Franko, Cousineau, Trant, Craig-Green, Rancourt, Thompson, et al.	2008	Evaluate an internet-based program which promoted nutrition education to change health behaviors on campus
Gow, Trace, & Mazzeo.	2009	Evaluate an internet intervention with freshman students
Ha, & Caine-Bish.	2009	Evaluate the effectiveness of a nutrition intervention to promote fruit and vegetable eating among college students
Ha, & Caine-Bish.	2011	Estimate current consumption of whole grains and determine evaluate the impact of an interactive introductory nutrition course focusing on disease prevention.
Hawks, Madanat, Smith, & De La Cruz.	2008	Evaluate the impact of a college course on dieting levels, eating styles, and body image among college women
Hekler, Gardner, & Robinson.	2010	Examine the impact of a Food and Society course on promoting healthy eating among college students
Kicklighter, Koonce, Rosenbloom, & Commander.	2010	Identify college freshmen perceptions of the effectiveness of a nutrition module taught by graduate nutrition students
Kolidinsky, Green, Michahelles, & Harvey.	2008	Assess the impact nutrition labels have on food purchase decisions of college students
Levy, & Auld.	2004	Evaluate if cooking classes improve knowledge, attitudes and behaviors toward cooking
Matvienko, Lewis, & Schafer.	2001	Evaluate the effectiveness of a nutrition course focused on human physiology, energy metabolism, and genetics in preventing weight gain during college
Morris, & Merrill.	2004	Assess the effectiveness of the Dietary Analysis program
Peterson, Duncan, Null, Roth, & Gill.	2010	Evaluate the effects of a short-term, POS intervention on college students perceptions and selection of 10 targeted healthful foods in a university dining hall
Poddar, Hosig, Anderson, Nikols-Richardson, & Duncan.	2010	Improve outcome expectations, self-efficacy, self-regulation, and behavior related to dairy intake in college students.
Poddar, Hosig, Nickols, Anderson, Herbert, & Duncan.	2009	Evaluate dairy intake and examine the association between low fat dairy intake and body weight changes.
Richards, Kattelmann, & Ren.	2006	Assess the effectiveness of an intervention using stage-based newsletters, computer-based communication, and motivational interviewing to increase fruit and vegetables .
Shive & Morris.	2006	Evaluate the effectiveness of the *Energize Your Life* social marketing campaign to improve knowledge, attitudes, and fruit intake in community college students
Wagoner, & Wijekumar.	2004	Evaluate the effectiveness of online journaling in changing healthy eating behaviors among college students
White, Park, Isreal, & Cordero.	2009	Investigate the longitudinal impact of peer health education on the health behaviors of college student nutrition behavior

Study Selection

This critique includes two qualitative studies, one mixed-methods study, and 20 quantitative studies. The two qualitative studies had 16 and 34 participants, which consisted of qualitative focus groups. The small sample sizes are appropriate for qualitative focus groups; however, they are not of sufficient size to make generalizations for the general population of college students (Glesne, 2006). The themes established from these focus groups can guide future research and interventions. Participants in one focus group were a convenience sample who were enrolled in the college class being evaluated (Kicklighter, Koonce, Rosenbloom, & Commander, 2010). Participants in the other qualitative study were selected from a larger study of student volunteers assessing food labeling in food venues on the college campus (Kolodinsky et al., 2008).

Sample sizes in the quantitative studies varied widely, ranging from 29 to 1,367 participants. Six studies had samples of less than 100 participants (Ha & Caine-Bish, 2009, 2011; Hawks, Madanat, Smith, & De La Cruz, 2008; Levy & Auld, 2004; Matvienko, Lewis, & Schafer, 2001; Poddar et al., 2009), which limits the statistical analyses that can be performed and the power of the results (Moore, 2007). Three studies were unclear in their sampling methods and over one-third of the studies used convenience samples to access participants (Moore, 2007). The majority of the studies that used convenience samples used preexisting college courses to access students for the intervention. Many of the courses offered were related to health; therefore, these students may have been predisposed to making changes in their current health practices, making it harder to detect change. Five of the interventions used random sampling, which strengthened the overall research design.

Two-thirds of the studies used comparison groups, including one of the qualitative studies. The studies without comparison groups have a weaker study design when compared to those with a control group and a comparison group (Moore, 2007).

Without a comparison group, it is difficult to conclude if an intervention caused changes in the participants, or if the change occurred due to other factors.

One quarter of the interventions targeted first and/or second year college students. The samples in almost half of the studies were over 60% female, with three of those studies specifically focusing on females. Race and ethnicity varied greatly by intervention. In four studies, over 60% of the participants were Caucasian, however this was representative of the home university. Regardless, the results from many of these interventions are not applicable to the general population of college students due to small sample sizes, homogeneous samples, and convenience sampling.

Assessment Instruments

The studies used a variety of instruments, including focus groups, previously validated scales, newly created scales, dietary recalls, and anthropomorphic measures. Many studies used more than one assessment tool to collect data for their study. The qualitative studies collected data during focus groups, which met for 60 to 75 minutes. The researchers recorded and transcribed the meetings and identified themes that emerged from the written notes of the focus groups (Kicklighter et al., 2010; Kolodinsky et al., 2008).

Anthropomorphic measures were participant height and weight taken at multiple times during the intervention, using a skin fold caliper to measure body mass, and body composition measures using dual-energy x-ray absorptiometry (Gow, Trace, & Mazzeo, 2010; Matvienko et al., 2001; Poddar et al., 2009). Trained members of the research team acquired the measurements from the participants to ensure accurate data collection. Height and weight measurements were taken to the nearest eighth of an inch and quarter of a pound.

Multiple studies used dietary recalls. A dietary recall asks a participant to recall and record on paper all consumed food and beverages over a specified period of time,

usually ranging from 3 to 7 days or up to 1 to 12 months (Abood, Black, & Birnbaum, 2004; Brown, Wengreen, Vitale, & Anderson, 2011; Ha & Caine-Bish, 2009; Levy & Auld, 2004; Poddar et al., 2009). An online dietary assessment survey was used in one study to collect food consumed over the previous 3 days, while also providing nutritional recommendations and feedback to the participants to promote healthy eating (Morris & Merrill, 2004). Dietary recalls are self-report data and are subject to participant honesty and social desirability. Participants may alter their food recall to make their food intake look better than it actually was for fear of looking bad themselves, or because they think it would help the researcher achieve desired results, overall altering the accuracy of the results obtained from the study.

Survey instruments frequently used in these studies were demographic screeners and nutritional knowledge screeners such as the Block Food Screener, Harvard Food Frequency Questionnaire and an Eating Habits Survey (Brown et al., 2011; Cottone & Byrd-Bredbenner, 2007; Franko et al., 2008; Gow et al., 2010; Hekler et al., 2010; Matvienko et al., 2001; Richards, Kattelmann, & Ren, 2006; White, Park, Israel, & Cordero, 2009). Additional scales to assess changes in knowledge, attitudes, self-control and self-efficacy regarding the benefits and barriers to fruit and vegetable consumption were also used (Brown et al., 2011; Clifford & Keeler, 2009; Franko et al., 2008; Shive & Morris, 2006).

Only some researchers reported Cronbach's alpha for the assessment tools. Nine articles did not report reliability coefficients for the scales used to evaluate the intervention. Three studies simply stated that the measures were reliable without clarification of what qualified as "reliable." Of the eight studies that reported reliability, coefficients ranged from .46 to .95 on various scales. Table 2 lists the authors, date of publication, the instrument used to collect data, and the reported reliability coefficients.

Table 2
Reported Reliability Coefficients by Study

Authors	Date	Instrument	Reliability (Cronbach's Alpha)
Abood, Black, & Birnbaum.	2004	Nutrition knowledge & Self Efficacy Questionnaire	α=0.86
Cottone, & Byrd-Bredbenner.	2007	Online pretest, paper post-test, online follow-up test made up of 8 instruments	Nutrition instrument α = .85, Perceived Susceptibility to obesity α= .89; Feelings about unhealthfulness of fast food α = .78 ; Self Efficacy α = .95; Locus of control α = .69, .55, .58;
Franko, Cousineau, Trant, Craig-Green, Rancourt, Thompson, Ainscough, Mintz, & Ciccazzo.	2008	Social Support, Encouragement and Self Efficacy for Dietary Change; Exercise Benefits/Barriers	SSESE α = .84; Family Social Support α = .78; Social Support from Others α = .81; Barriers α = .95
Gow, Trace, & Mazzeo.	2009	Three Factor Eating Questionnaire	TFEQ = (Cognitive Restraint α = .84; Disinhibition α =.78; Hunger α = .80)
Hawks, Madanat, Smith, De La Cruz.	2008	Intuitive Eating Scale; Cognitive Behavioral Dieting Scale; Emotional Eating Scale	IES α = .42-.93; CBDS α =.95; EES α = .81
Levy, & Auld.	2004	Eating habits survey	EHS α =.70
Shive & Morris.	2006	Knowledge and Attitudes regarding benefits and barriers to consumption	Attitudes, knowledge α = .58
White, Park, Isreal, & Cordero.	2009	Weight Management Questionnaire	WMQ α = .72, α = .73, α = .66

Research Design of the Nutrition Interventions

Two studies were qualitative, one study used mixed methods, and 18 studies were quantitative. Researchers conducting the qualitative studies held focus groups to assess student's perceptions of food labels in one study, and the effectiveness of a nutrition module in the other (Kicklighter et al., 2010; Kolodinsky et al., 2008). The focus groups met for 60 to 75 minutes and were audio taped and transcribed. One study used both a control focus group and a comparison focus group (Kolodinsky et al., 2008). The mixed methods study included a qualitative review of student journal postings as well as an evaluation of a pre-post instrument (Wagoner & Wijekumar, 2004). The use of multiple data collection methods in the mixed methods study, or triangulation, contributes to the trustworthiness of the data (Glesne, 2006).

The quantitative studies included pre-post interventions, comparing outcomes before and after the intervention. Two studies used repeated measures collecting follow-up data 3 to 4 months after the intervention ended, and one study was longitudinal (White et al., 2009). One study was a prospective cohort study which tracked changes in body composition in relation to dairy intake among college students for an academic year (Poddar et al., 2009). Five studies were quasi-experimental, four studies were pilot studies, and two studies were random control trials. The majority of the studies had simple, straightforward research designs.

Participants received incentives in almost half of the studies. Incentives varied widely, ranging from course credit and research points (Clifford & Keeler, 2009; Cottone & Byrd-Bredbenner, 2007; Hekler et al., 2010; Poddar, Hosig, Anderson, Nickols-Richardson, & Duncan, 2010; Poddar et al., 2009), to cash or gift cards (Franko et al., 2008; Gow et al., 2010; Matvienko et al., 2001; Shive & Morris, 2006; White et al., 2009), and recipes and cooking equipment for participation in the intervention (Levy & Auld, 2004). Monetary incentives increased when multiple data collection points were

necessary, such as with baseline, post-intervention, and follow-up assessments. In many cases, students received course credit or research credit while enrolled in the intervention course, and were then offered subsequent monetary incentives for completing follow-up assessments after the course had ended. Due to the high attrition rates in many of the longer studies, incentives were used to recruit participants to return for follow-up data collection. Monetary incentives ranged from $7.50 to $200.00, depending on the type of data collection.

Evaluation Period of the Reviewed Interventions

Intervention studies ranged from 3 weeks to 9 months. Six interventions lasted 6 weeks or less, and the majority of the intervention studies lasted one academic semester, or approximately 4 months. The interventions that lasted longer were approximately 9 months, or 2 semesters. Three studies collected follow-up data 3 or 4 months after the intervention concluded.

Use of Theory in the Reviewed Interventions

Over half of the interventions (68%) clearly identified the use of theory when designing the intervention. The most commonly used theories were the Social Cognitive Theory, Social Marketing Theory, and the Transtheoretical Model. Other theories included the Constructivist Theory, the Health Belief Model, and the Social Learning Theory. Integrating theory into the development of health interventions is crucial to an effective intervention (Grol, Bosch, Hulscher, Eccles, & Wensing, 2007). Almost one third of the interventions did not identify the theory used in developing the intervention, which weakens the quality of the study and subsequent interpretations of results from the study.

Outcome Measures

Outcome measures were changes in body weight, waist circumference, BMI, and nutritional knowledge. The majority of the interventions targeted promoting changes in

eating, including increasing fruits and vegetables, low-fat dairy, whole grains, and decreasing high-fat foods, processed grains, fast food, and sweets. Additional outcome measures were self-efficacy, self-regulation, attitudes, health behaviors, and decisional balance. One study assessed students identification of food labels located on the university campus and the impact these labels had on food choices (Kolodinsky et al., 2008).

Statistical Analysis

Most of the quantitative studies used descriptive measures. One third of the studies used analysis of variance and *t*-tests to determine differences among groups and changes from pre-intervention to post-intervention. Other statistical methods included analysis of covariance, factor analysis, chi square, Wilcoxon matched pair analysis, general linear model, and the Mann Whitney *U* test. The qualitative studies assessed themes in the participant responses, and one qualitative study used mixed methods.

Results

There are four sections discussing program results based on the assessed outcome variables. The sections are: 1) studies that evaluate changes in BMI or weight among participants; 2) changes in eating behaviors; 3) changes in attitudes, beliefs, self-efficacy, or self-control; and 4) changes in multiple indicators (i.e. eating behaviors and self-efficacy).

Changes in BMI or Weight among Participants

One study tracked changes in BMI and showed promising results (Gow et al., 2010). This study evaluated an internet-based intervention with freshman college students who randomly assigned to one of four treatment conditions. Changes in BMI were found to be lower in the intervention group when compared to the control group post-intervention and at the 4-month follow-up. The study had a small sample size and

relied on self-report data, so the results are not strong and are not generalizable to the general population of college students.

Changes in Eating Behaviors

Eight studies evaluated the impact of the intervention on eating behaviors (Ha & Caine-Bish, 2009, 2011; Kolodinsky et al., 2008; Morris & Merrill, 2004; Peterson, Duncan, Null, Roth, & Gill, 2010; Poddar et al., 2010; Poddar et al., 2009; Wagoner & Wijekumar, 2004; White et al., 2009). Changes in eating post-intervention were detected in all but one study among the intervention groups. The changes were an increase in low-fat dairy, whole grains, and fruit and vegetable consumption, and a decrease in fat, fast foods, and snacking, which are all positive findings. Even though the majority of the studies reported positive findings, the results are limited due to high attrition rates, reliance on self-report data, and short interventions.

Changes in Attitudes, Beliefs, Self-efficacy, or Self-control

Three studies examined the impact of an intervention on the changes in knowledge, attitudes, beliefs, or self-efficacy (Brown & Oler, 2000; Kicklighter et al., 2010; Levy & Auld, 2004). Knowledge in food portion estimation increased in more than one study, improvements in estimating the number of calories in fast food meals increased, and self-efficacy related to healthy cooking techniques increased in the intervention group. All three interventions used convenience samples, which is often an unrepresentative sample of the general population of college students.

Changes in Multiple Indicators

Finally, ten studies evaluated both changes in food consumption and changes in knowledge, attitudes, beliefs, self-control, or self-efficacy (Abood et al., 2004; Clifford & Keeler, 2009; Cottone & Byrd-Bredbenner, 2007; Franko et al., 2008; Hawks et al., 2008; Hekler et al., 2010; Matvienko et al., 2001; Poddar et al., 2010; Richards et al., 2006; Shive & Morris, 2006). Changes in overall eating post-intervention were detected

in all but one study among the intervention groups. The changes were a decrease in overall calories at the end of the intervention, an increase to three servings of dairy per day, an increase in eating fruits and vegetables, and a decrease in high-fat meat and high-fat dairy products, which are all positive findings. Knowledge improved in the following areas: general nutritional knowledge, energy metabolism, fruit and vegetable consumption recommendations, and the ability to recognize eating styles and hunger cues. Participants in intervention groups showed increased use of self-regulatory strategies, increased self-efficacy, and increased beliefs in the importance of a healthy diet. Even though the majority of the studies reported positive findings, the results are limited due to multiple studies having a small sample size, relying on self-report data, and using convenience samples.

Methodological Issues

Many of the methodological issues have been addressed in previous sections, including sample size, sampling methods, and the lack of use of theory in research design. Many of the interventions were short, taking place over less than a month. An intervention of this length may not offer enough time for participants to make a behavioral change (Cottone & Byrd-Bredbenner, 2007; Levy & Auld, 2004; Long & Stevens, 2004; Peterson et al., 2010; Strong, Parks, Anderson, Winett, & Davy, 2008). If they do make a change during the course of the intervention, it may not be long enough for them to maintain long-term change. Many studies did not follow-up with the participants long-term, so it is unknown if the impact of the intervention had any lasting effects on behavior (Ha & Caine-Bish, 2009; Hekler et al., 2010; Peterson et al., 2010; Richards et al., 2006; Shive & Morris, 2006). For those studies that did follow students for longer times, there was a high attrition rate that resulted in missing data and small sample size for analysis (Delinsky & Wilson, 2008; Francis, Taylor, & Haldeman, 2009;

Nitzke et al., 2007; Poddar et al., 2009). Multiple studies had more than one methodological problem, which further weakened the study and the overall findings.

Findings from multiple studies indicate that intervention group participants showed positive changes in nutritional knowledge, healthy eating, and an increased use of self-regulatory strategies, self-efficacy, and beliefs in the importance of a healthful diet when compared to the control group participants. Ha & Caine-Bish (2009) implemented a traditional nutrition intervention delivered in a 15 week college course. A convenience sample of 80 undergraduate students attended a college course that met 3 times a week for 50 minutes each day. A survey was administered during the first two weeks of class and during the last week of class. The outcome measure was changes in fruit and vegetable consumption, and there were significant increases in fruit and vegetable intake and a significant decrease in eating French fries (Ha & Caine-Bish, 2009)

Richards, Kattlemann, & Ren (2006) evaluated the impact of a 4 month nutrition intervention that used stage-based newsletters and a website with undergraduate college students (n=437). Intervention participants had increased fruit and vegetable consumption and moved from pre-action stages to action stages. There were no changes detected among control participants (Richards et al., 2006). Another study effectively improved food choices among female college freshmen students (Matvienko et al., 2001). The researchers evaluated the effect of a 15-week nutrition science course that stressed principles of human physiology, energy metabolism, and genetics. Participants (n=40) completed a food frequency questionnaire at the beginning and end of the semester, and results indicate increased nutritional knowledge, and decreased in fat intake in the intervention participants (Matvienko et al., 2001). Each of these interventions were 12-15 weeks long, which provided participants time to learn the material. Two of the studies were guided by theory and used a quasi-experimental design (Ha & Caine-Bish, 2009; Richards et al., 2006), and one was a randomized

control trial (Matvienko et al., 2001). These studies provide promising results at impacting healthy eating behaviors, which ultimately are a contributing factor to reducing and preventing an increase in the prevalence of obesity among this segment of the population.

2.5 Behavioral Constructs

The intervention was guided by the Transtheoretical Model (DiClemente et al., 1991; Prochaska & DiClemente, 1985; Prochaska, Redding, & Evers, 2008) and the Social Cognitive Theory (Bandura, 1986; McAlister, Perry, & Parcel, 2008).

Transtheoretical Model

The Transtheoretical Model is organized using the Stages of Change as a framework. The Stages of Change is used to classify individuals into one of five readiness to change stages (DiClemente et al., 1991). The stages are Pre-contemplation, Contemplation, Preparation, Action, and Maintenance. Table 3 provides a description of each stage (DiClemente et al., 1991; Prochaska, Redding, et al., 2008). The Stages of Change model allows for understanding and promoting behavior change in nutrition interventions. Once one understands the stage a participant is in, an intervention can be tailored to their stage, further promoting successful behavior change (Glanz et al., 1994).

Table 3
Description of the Stages of Change

Stage	Description
Pre-contemplation	These individuals do not intend to change health behaviors in the next 6 months. These people may not be aware that they have a health problem that needs to change.
Contemplation	These individuals are aware that a change is necessary, and they intend to make the change within the next 6 months.
Preparation	These individuals are planning to make a change in the next 30 days. They may have made previous attempts to improve their target behavior.
Action	These individuals are currently making a change, and have been doing so for less than 6 months.
Maintenance	These individuals have been successfully sustaining behavior change without relapse for at least 6 months. They have zero temptation and 100% self-efficacy.

The constructs of the Transtheoretical Model included in this study are consciousness raising, environmental reevaluation, self-liberation, counter conditioning, decisional balance, and self-efficacy. Table 4 describes each construct (Prochaska, Redding, et al., 2008). As individuals progress through the Stages of Change, they depend on different processes of change to maintain the new behaviors. In early stages, people apply processes that are driven by cognitive, affective, and evaluation, while in later stages they apply processes that are based on commitments, conditioning, environmental controls, and support (Prochaska, Redding, et al., 2008).

One of the goals of the study was to increase awareness of the impact the industrialized food system has on food quality, resulting in participants choosing healthier food. Many of the topics discussed in class were not common knowledge, therefore the students were not aware of the impact the current food system had on their lives. Participation in the intervention promotes readiness to change, potentially moving students from pre-action stages to action stages.

Table 4
Transtheoretical Model Constructs

Construct	Description
Consciousness raising	Learning new information that supports healthy behavior change
Environmental reevaluation	Understanding the impact personal health behaviors can have on the surrounding social and physical environment
Self-liberation	Making a firm commitment to change
Counter conditioning	Substituting healthier alternative behaviors and thoughts for the targeted unhealthy behavior
Decisional balance	Weighing the pros and cons of behavior change
Self-efficacy	Situation-specific confidence that one can engage in and maintain a healthy behavior across different situations

Social Cognitive Theory

Social Cognitive Theory posits that behavior is an interplay between an individual's environmental, behavioral and personal influences (Bandura, 1986). Environmental influences include characteristics of the situation that influence the adoption of a behavior. Examples in this study include access to dining halls, restaurants, and other food outlets on and around the university campus. The study curriculum provides information of the healthier food options available in many of these places, including a weekly downtown farmers market, restaurants that served local, organic food, and the availability of healthy food choices in the grocery stores. Personal influences include beliefs, cognitions, and self-efficacy in wanting to eat a healthful diet. Traditional nutrition courses focused on calories, fat and nutritional content, while this

course focused on production, chemical additives, treatment of workers and animals, and environmental impacts of food choices. Behavioral factors include the skills related to eating a healthful diet (Bandura, 1986). Specific constructs this study focused on are observational learning, facilitation, self-efficacy, and moral disengagement. (Bandura, 1986).

Observational Learning

Observational learning includes learning to perform new behaviors by exposure to examples of the behavior (McAlister et al., 2008). Four factors guide observational learning: attention, retention, production, and motivation (Story, Lytle, Birnbaum, & Perry, 2002). Reading course material, participating in discussions, and completing assignments promote observational learning.

Facilitation

Facilitation includes providing tools, resources, or environmental changes to make new behaviors easier to perform (McAlister et al., 2008). These tools enable individuals to more easily incorporate and sustain healthy behavior change. Barriers to behavior change are identified and strategies to overcome the barriers are presented. Students that led each discussion researched local resources related to the topic to present to the class.

Self-Efficacy

Self-efficacy is an individual's beliefs about the control they feel they have over the events that influence their life (McAlister et al., 2008). Nutritional self-efficacy is a person's belief that they can control what foods they eat. Previous research has demonstrated that increasing nutritional self-efficacy is an important determinant of nutrition behavior (Anderson et al., 2007). Methods for increasing self-efficacy are mastery experience, social modeling, and verbal persuasion (Bandura, 1997). Mastery experience enables the person to build skills in increments promoting successful

behavior change. Social modeling includes showing the person that others like them can successfully change behavior. Verbal persuasion uses encouragement to promote behavior change (McAlister et al., 2008). Self-efficacy and SOC are positively correlated with each other. As one progressed through SOC stages, self-efficacy also increases (Prochaska, Wright, & Velicer, 2008).

Moral Disengagement

Moral disengagement is one's way of thinking about the impacts personal harmful behaviors have on others (Bandura, 1999). Individuals can learn moral standards to avoiding causing harm to others, or they can make excuses for their behaviors by displacing the blame for the behavior to authority figures or arguing the behaviors are beneficial and necessary (McAlister et al., 2008).

2.6 Review of Model Research Study

Hekler, Gardner, and Robinson (2010) implemented a stealth nutrition curriculum in an upper-level undergraduate Biology course during the 2009 spring quarter at Stanford University. The study used a quasi-experimental, nonrandomized control-group design. The authors team-taught the 10-week course titled "Food and Society: Exploring Eating Behaviors in a Social, Environmental and Policy Context." The course focused on macro-level issues related to food, but did not specifically focus on changing eating behaviors to improve health. The intervention promoted behavior change via a motivating process for the participants, thus making it a stealth intervention (Hekler et al., 2010). For example, students learned about the environmental implications of industrialized food production. Knowing the impact their food choices could make on the environment could lead to eating more fruits and vegetables and less meat. Students read books, watched documentaries, and then discussed them during class. They composed an op-ed article and an advocacy video related to a topic covered in the course. Three health-related comparison courses served as control courses. The

courses were upper level Biology courses, were taught during the same academic quarter, and focused on delivering health messages.

The authors assessed changes in eating and values using the Harvard Food Frequency Questionnaire and a values scale. Data were collected at the beginning and end of the quarter (Hekler et al., 2010). Results indicated positive changes in food intake and beliefs. There were significant increases in vegetable intake and the strength of beliefs related to food ethics regarding the importance of the environment, animal rights, and eating healthful food, and significant decreases in high-fat dairy consumption. The comparison group reported a significant decrease in vegetable consumption and no improvement in other areas. Their results show that focusing on food-related social issues instead of health may be more motivating for improving eating behaviors among college students (Hekler et al., 2010). The strengths of this study are that it followed a set curriculum and used a control group for comparison. Study limitations include the lack of random assignment, using only one data collection method, short implementation period, small sample size, and use of a convenience sample. The research study presented in Chapter 3 will serve as an adapted replication study to test these findings on a new population. Adaptations were increased length of implementation, adding a religion module to the curriculum to investigate the relationship between food and faith, and using more than one data collection method to strengthen the overall design. A side by side comparison is presented in chapter 3.

CHAPTER 3:

METHODS

This chapter details the methodology of this study and is composed of five sections. Section 1 presents the purpose of the study and research questions. Section 2 explains the study design and the participants. Section 3 describes the curriculum and the theoretical background. Section 4 describes the measures used in this research. Finally, Section 5 describes data management and analysis plan.

3.1 Purpose of the Study and Research Questions

The purpose of this study is to evaluate the effectiveness of Food, Society, and Public Health (HPRB 5160), a stealth nutrition curriculum which was taught to University of Georgia undergraduate students during the spring semester of 2012. The study evaluated whether the stealth nutrition curriculum was effective at increasing healthy eating among students enrolled in the course. The intervention was guided by the Social Cognitive Theory (Bandura, 1986; McAlister et al., 2008) and the Transtheoretical Model (DiClemente et al., 1991; Prochaska & DiClemente, 1985; Prochaska, Redding, et al., 2008). The specific dietary modifications targeted in this intervention were increasing the consumption of fruits and vegetables, and decreasing the consumption of high-fat meat, high-fat dairy, processed food, and sweets. The specific research questions that guided this study and the hypotheses are as follows:

1. Will the Food, Society, and Public Health curriculum be more effective than the control courses in increasing healthy food purchasing behaviors?

   Hypothesis 1: Students in the intervention group will report increased healthy food purchasing behaviors than students in the control groups.

2. Will the Food, Society, and Public Health curriculum be more effective than the control courses in increasing the consumption of fruits and vegetables?

   Hypothesis 2: Students in the intervention group will report eating more fruits and vegetables than students in the control groups.

3. Will the Food, Society, and Public Health curriculum be more effective than the control courses in decreasing the consumption of high-fat meat, high-fat dairy, processed food, and sweets?

   Hypothesis 3: Students in the intervention group will report eating less high-fat meat, high-fat dairy, processed food, and sweets than students in the control groups.

4. Will the Food, Society, and Public Health curriculum be more effective than the control courses in increasing self-efficacy related to eating healthy food?

   Hypothesis 4: Students in the intervention group will report increased self-efficacy in increasing healthy eating than students in the control groups.

5. Will the Food, Society, and Public Health curriculum be more effective than the control courses in increasing participants' readiness to change in healthy eating than students in the control groups?

   Hypothesis 5: Students in the intervention group will report an increase in readiness to change in healthy eating than students in the control groups.

6. Will the Food, Society, and Public Health curriculum be more effective than the control courses in increasing participants' beliefs about the importance of healthy behaviors?

   Hypothesis 6: Students in the intervention group will report strengthened beliefs regarding healthy eating than students in the control groups.

3.2 Study Design

This study used a quasi-experimental, mixed-methods design. There were two intervention courses and two types of control courses (health control and non-health control). The curriculum was delivered in a discussion-based course, which indirectly addressed healthy eating through dialogue surrounding societal level issues including culture, economics, agriculture, politics, ethics, environment, and religion and their relation food and eating practices (X_1). The control courses were a general health education, lecture-based class that delivered basic health information, a senior-level English literature course, and a foundations English course. The English courses did not provide health information (X_0). The 15-week intervention focused on undergraduate students attending the University of Georgia.

A pre-post testing design was used to evaluate each class to determine an overall impact of changes in eating behaviors. The Harvard Food Frequency Questionnaire (Willett et al., 1985) was used to collect outcome data. Additional analyses examined differences based on class assignment (i.e. intervention versus control).

Research questions were answered using a sequential mixed method approach, combining both qualitative and quantitative methods to strengthen conclusions drawn from the different phases (Johnson & Onwuegbuzie, 2004). A mixed method approach was used for the purposes of complementarity and triangulation (Greene, 2007). Complementarity measures overlapping and diverse components of a phenomenon, generating a broader understanding of the dimensions associated with it and promoting the ability to interpret results (Greene, 2007). Triangulation combines multiple theories, data sources and methods to enhance the validity of the findings and to test for consistency (Denzin, 1989; Patton, 2002).

Description of Participants

The selected study population was undergraduate students attending the University of Georgia, which is located in Athens, Georgia. The course was open to all undergraduate University of Georgia students regardless of major, year in school, gender, and race or ethnicity. The University of Georgia has an enrollment of over 34,000 students, which includes 26,373 undergraduate students pursuing degrees from 19 different colleges and schools. In 2011, the undergraduate student body was 57.5% female and 75.8% Caucasian (UGA Office of Public Affairs, 2011). Approximately 34% of undergraduate students live in on-campus student housing. Students have access to twelve different on-campus dining facilities, where they can purchase food ala carte or have the option of purchasing a meal plan. Within the surrounding community, numerous restaurants and food outlets are available, located along the campus bus route or within walking distance from campus.

In 2009, the American College Health Association's National College Health Assessment surveyed University of Georgia students. Results indicate that 92.9% of University of Georgia students consume four or fewer servings of fresh fruits and vegetables per day (ACHA-NCHA, 2009). Approximately 33% of these students were classified as overweight or obese (ACHA-NCHA, 2009). These findings demonstrate that students attending the University of Georgia were not eating enough fresh fruits and vegetables, which is a contributing factor to the rate of overweight and obesity among the students.

The research team recruited undergraduate students (freshmen through seniors) campus-wide to enroll in Food, Society, and Public Health. Recruitment included emailing student advisors across the different colleges and schools to promote the course to their students during advising sessions. The email introduced the instructor and contained a description of the course and the topics to be covered, as well as

contact information in case there were any questions or concerns. The College of Public Health advertised the course through the College website and course catalog. The course was advertised in other courses the previous semester. Finally, flyers highlighting the course were posted in buildings across campus.

3.3 Description of Intervention

Food, Society, and Public Health was modeled after the curriculum developed at Stanford University (Hekler et al., 2010). The scope of this research focused primarily on influencing personal factors. The curriculum provided students an opportunity to delve into social justice topics related to food with the intention of changing their beliefs surrounding the issues. Topics covered related to the detrimental impact of industrialized food production, resulting in poor quality, nutritionally deficient food and environmental degradation. Other topics included discussion of animal rights, religion, food policy, and the economy related to food production. Enlightening students to these issues and affecting their individual-level process motivation promotes a change in eating habits. The curriculum was adapted to fit the location and structure of the University of Georgia. Table 5 details a comparison of the original course with the University of Georgia adaptations.

Food, Society and Public Health was an elective, special topics course offered through the Department of Health Promotion and Behavior (HPRB), which was open to all undergraduate students attending the University of Georgia. Food, Society, and Public Health was a discussion-based seminar that used contemporary readings and critical discussion to explore macro-scale influences on food, nutrition, and eating behavior. The course emphasized process motivation among participants to promote behavior change instead of specifically focusing on increasing knowledge to promote behavior change (Robinson, 2010).

Table 5
Comparison of Model Curriculum to Current Research Study

Hekler et al, 2010	Brace, 2012
Spring quarter (10 weeks)	Spring Semester (15 weeks)
One section 28 students	Two sections 29 students total
Quasi-experimental pre-post design	Quasi-experimental Mixed Methods pre-post design
Theory not stated	Social Cognitive Theory Transtheoretical Model
Upper level Biology Course	Upper Level Health Promotion and Behavior Course
Topics: Environmental, ethical, social justice, cultural, political, and agricultural issues	Topics: Environmental, ethical, social justice, cultural, political, agricultural issues, and religion
Documentaries viewed on own time	Documentaries viewed in class
Team taught	One instructor
Classroom based meetings	Classroom based meetings and also on-location farm visits
Control courses Health related Biology course Delivered same quarter	Control courses Health related HPRB course and non-health ENGL course Delivered same semester

Two sections of the course were offered during the spring of 2012, with each section limited to enrollment of 30 students. One section met at 9:30 AM on Tuesdays and Thursdays, and the other section met at 12:30 PM on Tuesdays and Thursdays. The classes met for 75 minutes each day for 15 weeks. There were 13 students enrolled in the morning section, and 16 students enrolled in the afternoon section. Small class sizes allowed for intimate group discussion among participants, facilitating a deeper understanding of the material presented in class. Table 6 and the following sections describe the assignments students completed during the course of the semester and the related theoretical construct impacted by the activity.

Table 6
Description of each class project

Class Project	Description
Readings	Students read selected passages from current research literature.
Documentaries	Students watched documentaries in class.
Class Discussion	Student-led discussion guided by the themes and topics presented in the readings and documentaries.
On-line Discussions	Weekly on-line discussions guided by the themes and topics presented in the readings and documentaries.
Opinion Editorial Article	Students researched, wrote, and submitted an op-ed article advocating for a theme or topic presented in the class.
Advocacy Video	Students researched and directed an advocacy video advocating for a theme or topic presented in the class.
Guest Speakers	Experts on local food, animal rights, and industrialized food shared their knowledge with the class and joined in the class discussion.
Organic Farm Visit	The class met at the University of Georgia Organic Farm to witness the workings of an organic farm
*EcoFocus Film Festival**	Environmentally focused films that presented information on food and food production.
*Cattle Ranch Visit**	Two-hour tour of a sustainable, grass-fed cattle ranch to witness healthy and humane beef production.

**Optional Activities*

Course Readings

Over the 15-week semester, students read selected passages from current research literature (Foer, 2009; Kingsolver, 2007; Lappe', 2010; Menzel & D'Aluisio, 2007; Nestle, 2003; Petrini, 2007; Pollan, 2006; Schlosser, 2002; Schut, 2006) as well as watched topic-specific documentaries (Cheney, Ellis, & Woolf, 2008; Fulkerson, 2011; Geyrhalter & Widerhofer, 2005). Students read the texts outside of class, and one to two class periods were devoted to discussion of each topic. Students viewed documentaries in class and spent one class period discussing videos. Appendix A includes the course syllabus, which lists all of the books and videos used in the course.

Class discussions were guided by the themes and topics presented in the readings. Topics included environmental, ethical, social justice, cultural, political, religious, and agricultural issues related to food and food production. The class readings provided information to increase awareness and knowledge of each issue for all

students. For example, when students learned about organic food, this promoted consciousness-raising about organic food and the related benefits associated with consuming organic food. This increase in knowledge resulted in environmental reevaluation of their role in food production. Students learned how to identify organic food, the benefits of organic food, and places to purchase these items, affecting their decisional balance to weigh the pros and cons, and increasing their self-efficacy to purchase these products.

Class Discussions and On-line Discussions

Each student was responsible for leading the class in two in-depth discussions. Leading discussion required the students to master the material they presented to their classmates. The students were required to read the materials closely and find additional supporting sources to supplement the topic. Students had to think critically about the material covered in class.

Each week the instructor posted questions to the on-line discussion board. Students had to post one response to this question, and they had to read their classmates postings and then respond to their comments. The combination of class discussions and on-line discussions promoted engagement and discussion with the material and their classmates. Table 7 lists the weekly on-line discussion topics and the related discussion question. Actively participating in discussion resulted in performance mastery of topic-specific tasks (i.e. identifying foods with high fructose corn syrup or genetically modified organisms), which is the strongest influence on self-efficacy (Bandura, 1997). Additionally, these students were required to identify barriers related to each topic, and research and provide suggestions to overcome the barriers. This served as facilitation for behavior change (McAlister et al., 2008). The students participating in the class discussion learned through observational learning, which can increase self-efficacy (McAlister et al., 2008).

Table 7

Description of discussion topics and questions

Discussion Topic	On-line Discussion Question
Fast Food Nation	The author discusses several types of drawbacks to the American system of fast food production. Of all the issues raised in the book, which is most important to you? Why do you think it should be the central issue in the critique of industrial agriculture?
Forks Over Knives (FOK)	Please choose 2 questions & share your views for each one. 1) What is the feasibility that an individual or family would be able to implement the diet descried in *FOK*? 2) What barriers do you foresee with implementing & maintaining the diet described in *FOK*? 3) Do you think it is necessary to go to such an extreme diet? Do you consider this an extreme diet? 4) How sound was the research presented in *FOK*?
Omnivore's Dilemma	Post a quote that resonated with you & explain why you chose it.
Future of Food	Should genetically engineered &genetically modified foods be labeled?
Diet for a Hot Planet	Please visit the following site &calculate your ecological footprint. http://myfootprint.org/en/. Discuss your reaction to your calculated footprint, while also discussing two themes raised in the book.
Eating Animals	Please answer both parts: 1) What is your reaction to these quotes? Has this impacted your view of industrial animal farming? "...an excruciating life is worse than an excruciating death." & "What the industry figured out... Sick animals are more profitable." 2) We have so many food choices available to us now. Is this, in your opinion, a blessing or a curse? Please explain.
King Corn	The filmmakers suggest that current farm practices & policies are not producing healthy food. Who is responsible to change the system? Consider the responsibility of the following: consumers, farmers, policy makers, food companies, food retailers & health professionals. What might members of these groups do to ensure a healthy, adequate & dependable food supply?
Animal, Vegetable, Miracle	Post a quote that resonated with you & explain why you chose it.
Slow Food Nation	Post a quote that resonated with you & explain why you chose it.
Fresh	Please answer both questions: 1) What do you think of the statement made by Michael Pollan that we pay 3 times for our food – at the register, with our health care, & via agricultural subsidies? 2) How can people with limited incomes access a healthier, fresh diet? Is the local food movement elitist?
Food and Faith	Describe your thoughts on the relationship between food & spirituality. In your opinion, is this an important relationship; why or why not? How do you believe your personal views compare with mainstream views in this country, & how does that make you feel?
Hungry Planet	What are your thoughts on the American food culture in contrast to the others stories in the book (using your own experiences & examples in the book)? What differences did you observe? How did this make you feel? If you could describe the U.S. food culture in one word, what would it be?
Food Politics	Post a quote that resonated with you & explain why you chose it.
Our Daily Bread	What are your thoughts on this film? Is it an effective way to communicate what we learned this semester? What stood out to you the most?

Class Activities

The class activities promoted behavior change through mastery experience, facilitation, observational learning, consciousness-raising, and increasing self-efficacy. Watching videos increased knowledge of each topic covered through observational learning and consciousness raising (McAlister et al., 2008). Writing the Opinion Editorial article required extensive research and a comprehensive understanding of the material under investigation. The gain in knowledge promoted mastery of the topic, which encouraged an increase in self-efficacy related to the topic. The goal was for the students to inform others of these issues, identify the barriers to change, and provide recommended solutions to overcome these barriers. This resulted in inducing the first efforts to behavior change for others (McAlister et al., 2008). Similarly, the creation of the advocacy video required the same comprehensive understanding of the topic being presented, increasing the student's self-efficacy. Students were able to choose their topics for the op-ed article and the advocacy video. Table 8 provides the project topics for the op-ed article and advocacy videos, and the frequency the topics were presented.

Table 8
Description and frequency of op-ed articles and advocacy video topics

Project Topics	Op-Ed Article	Advocacy Video
Promoting Organic Food	6	3
Natural Meat Production	3	0
Connecting with Food for Better Mind/Body Balance	3	0
School Lunch Policies and Obesity	1	1
Factory Farming/ Industrialized Food	6	2
Local Foods/ Seasonal/ CSA	4	2
Promoting Vegetarianism	3	2
Food Marketing	1	3
Food Additives	2	1
Anti-fast Food	0	2

Guest Speakers

Guest speakers who had a passion and expertise for specific topics facilitated three class discussions. Craig Page, the administrator for P.L.A.C.E. (Promoting Local Agriculture & Cultural Experiences) spoke to the classes on February 2, 2012 about the impact of the industrialized food system (www.localplace.org/). He identified local initiatives and resources promoting the slow food movement at a local and national level. Olivia Sargeant, one of the owners of Farm 255 addressed the classes on February 14, 2012 (www.farm255.com/). Olivia talked to the classes about the history of Farm 255 and explained their business model. Farm 255 follows the farm-to-table philosophy, raising their own animals and produce, using humane, sustainable, and organic methods. Her primary message to the students was to "choose your battles." On March 22, 2012 Lorena Mucke of The Ethical Choices Program spoke to the class about ethical issues in food choices (www.ethicalchoicesprogram.org/). She promoted a vegetarian diet to the students, informing them of the ethical consequences of consuming meat.

The students learned from each of these speakers through observational learning, consciousness raising, social modeling, and facilitation. The guest speakers identified local resources the students could utilize and described how they implement the food-to-table philosophy, providing the opportunity for counter conditioning and environmental reevaluation.

Field Trip

On February 28, 2012 both classes met at the University of Georgia Organic Farm as an alternative class location. Robert Tate gave the classes a tour of the facility. He described the benefits of organic farming, the challenges and hardships of the industry, and their reasoning for choosing the method. The students posted their reflections of the farm visit on the discussion board, and discussed the information the

next day in class. Witnessing the farm at work provided an opportunity for observational learning and consciousness-raising.

Optional Activities

During the semester, opportunities arose to involve students in unplanned activities related to the class. During the last week of March, the Odum School of Ecology sponsored the annual EcoFocus Film Festival. The festival screened over two dozen environmentally focused films, five of which addressed food and food production. Students were offered extra credit to attend a screening of one of the films related to the class. Watching these supplemental videos promoted increased knowledge of each topic covered through observational learning and consciousness raising (McAlister et al., 2008).

On April 21, 2012, George Cooke, the owner of Cooke Cattle Company invited the intervention classes to his ranch in Madison, Georgia. George and his family were third generation cattle ranchers that practice sustainable farming and promote eating local. George took the students on a 2-hour tour of his ranch, touring the pastures and meeting the cattle face to face. He explained their method for rotational grazing, finishing, and their business model. The students who attended asked questions during the whole tour, gaining a great amount of insight and knowledge into the value and importance of sustainable cattle farming. The course followed a detailed curriculum that provided day-by-day structure for content, activities, and learning objectives. Table 9 details the course activities, learning objectives that specify “Students Will Be Able To” (SWBAT) by the end of class, and proposed outcomes.

Table 9

Description of each session, the learning objectives, activities, proposed outcomes, and related theoretical constructs

Class	Topics	Reading and Viewing Assignments	Class Activities	Learning Objectives (SWBAT)	Proposed Outcomes	Theoretical Construct
1	Course Introduction	None	Instructor Introductions, Small group project (ice breaker), Survey	Introduce class expectations; Familiarize student with each other	Understanding of course expectations; Establishing familiarity with peers	Facilitation Consciousness raising
2	Food & health care, energy, environment	Michael Pollan. Farmer in Chief. The NYT Magazine, October 8, 2008 (~15pgs)	Class announcements Student-led discussion	Demonstrate a gain in knowledge of current food climate	Increased awareness of food climate	Observational learning Facilitation Consciousness raising
3	Labor I	Eric Schlosser. Fast Food Nation. pp 1-131	Class announcements Student-led discussion	Describe local & global influence of fast food industry; Increased knowledge of negative outcomes associated with fast food industry	Increased knowledge of the impact of the fast food industry; Change in beliefs of fast food industry Increased self-efficacy to make healthy food choices	Mastery Experience Facilitation Observational Learning Consciousness raising
4	Labor II	Eric Schlosser. Fast Food Nation. pp 133-270				
5	Health Impacts (HI) In class video	Forks Over Knives (90min)	Class announcements Watch video Class discussion	Describe health outcomes associate with fast food industry; Increased knowledge of negative outcomes associated with fast food industry	Increased knowledge of the impact of the fast food industry; Change in beliefs of fast food industry Increased self-efficacy to change eating habits to protect health	Mastery Experience Observational Learning Facilitation Consciousness raising
6	Health Impact In class video/ Discussion	Forks Over Knives (90min)				

Table 9 Continued

Class	Topics	Reading and Viewing Assignments	Class Activities	Learning Objectives (SWBAT)	Proposed Outcomes	Theoretical Construct
7	Agriculture I	Michael Pollan. Omnivore's Dilemma. pp 15-119 (Industrial Corn)	Class announcements Student-led discussion	Describe the difference between various food chains Identify the route food travels from source to final meal Identify local farms and CSA's where food can be purchased	Increased knowledge of the impact of current agricultural practices Change in beliefs of food industry Increased self-efficacy to purchase food locally	Mastery Experience Facilitation Observational Learning Consciousness raising
8	Agriculture II	Michael Pollan. Omnivore's Dilemma. pp 124-273 (Pastoral Grass)				
9	Agriculture/ Technology In class video	Future of Food (2005) 88 minutes	Class announcements Watch video Class discussion (55 min)	Recognize the problem associated with genetically modified foods Explain the ethical issues surrounding GMF's	Increased knowledge of genetically modified foods Change in beliefs of technology use in food production Increased self-efficacy to look for GMO's and find alternative food options	Mastery Experience Observational Learning Facilitation Consciousness raising
10	Ag - In class video/ Discussion	Future of Food (2005) 88 minutes Guest Speaker – Farm 255				

Table 9 Continued

Class	Topics	Reading and Viewing Assignments	Class Activities	Learning Objectives (SWBAT)	Proposed Outcomes	Theoretical Construct
11	Environment/ Climate Change I	Anna Lappe. Diet for a Hot Planet. pp 3-126 (Crisis and Spin)	Class announcements Student-led discussion Assign Op-Ed project (10 min)	Critique industrial farming and its carbon costs Describe a climate-friendly food system	Increased knowledge of environmental impact of industrial farming Change in beliefs of industrial farming Increased self-efficacy to make food choices that have a decreased environmental impact	Mastery Experience Facilitation Observational Learning Consciousness raising
12	Environment/ Climate Change II	Anna Lappe. Diet for a Hot Planet. pp 129-251 (Hope and Action)				
13	Ethics I	Jonathan Safran Foer. Eating Animals. pp 81-150	Class announcements Student-led discussion	Describe factory farm methods and the implications for food quality, animal rights and the environment	Increased knowledge of factory farming (animals) Change in beliefs about factory farming Increased self-efficacy to pay attention to where food comes from to ensure humane treatment of food source	Mastery Experience Facilitation Observational Learning Consciousness raising
14	Ethics II	Jonathan Safran Foer. Eating Animals. pp 151-244				
15	Ethics – Out of class video	UGA Organic Farm Visit King Corn (2007) 88 mins (Watch outside of class)	Class announcements Class met at UGA Organic Farm Discuss Op-Ed assignment (10 min)	Describe the ethics related to food production and government subsidies	Increased knowledge of government involvement in farming Change in beliefs about farming Increased self-efficacy to support local farmers	Observational Learning Facilitation Consciousness raising
16	Ethics - Discussion	King Corn (2007) 88 mins				

Table 9 Continued

Class	Topics	Reading and Viewing Assignments	Class Activities	Learning Objectives (SWBAT)	Proposed Outcomes	Theoretical Construct
17	Reviews of Op-Ed drafts	None	Class announcements Review Op-Ed drafts & provide student feedback	Incorporate feedback into Op-Ed draft	Well-written Op-Ed papers	Facilitation
18	Politics and the Food Industry	Marion Nestle. Food Politics. pp 1-29, 51-110.	Class announcements Student-led discussion Assign group project Allow students time to select group topics and group members (20 min) Final Op-Ed due and submitted before class starts	Describe how the food industry influences dietary choices to our detriment Identify societal means to counter food industry lobbying and marketing practices	Increased knowledge of food industry influences Change in beliefs about food industry Increased self-efficacy to understand marketing ploys and their impact on food choices	Mastery Experience Facilitation Observational Learning Consciousness raising
19	Current Policy Issues I	Carlo Petrini. Slow Food Nation	Class announcements Student-led discussion, Answer questions about group project Mid-semester Survey	Describe a policy related to the slow food movement	Increased knowledge of slow food movement Change in beliefs about current policies Increased self-efficacy to promote healthy food	Mastery Experience Facilitation Observational Learning Consciousness raising
20	Current Policy Issues II	Carlo Petrini. Slow Food Nation				
21	Transforming food systems – In class video	Fresh, a Film by Anna Sofia Jones (2009) 72 mins.	Class announcements Watch video (72 min) Post video reflection on eLC; respond to two other postings	Describe ways the food system is being re-created at the local level	Increase knowledge of sustainable farming Changes in beliefs about sustainable farming Increase self-efficacy to identify and utilize sustainable farming	Observational Learning Facilitation Consciousness raising

Table 9 Continued

Class	Topics	Reading and Viewing Assignments	Class Activities	Learning Objectives (SWBAT)	Proposed Outcomes	Theoretical Construct
22	Religion and Food	Michael Schut: Food and Faith Guest speaker - TBD	Class announcements Student-led discussion	Describe ways the food system and religion interact and the associated outcomes	Increased knowledge of the relation between food production and religious associations Change in attitude about religion and food Increased self-efficacy to involve own religion contacts in the food fight	Observational Learning Facilitation Consciousness raising
23	Culture, Global Food	Peter Menzel & Faith D'Aluisio. Hungry Planet: What the World Eats.pp 11-20 (intro) Guest Speaker – P.L.A.C.E	Class announcements Student-led discussion Answer final questions about group project	Describe cultural variations in diet Identify variables that influence diet (poverty, conflict, globalization)	Increased knowledge of the relationship between culture and food Change in behavior regarding culture & food	Observational Learning Facilitation Consciousness raising
24	Culture	Barbara Kingsolver: Animal, Vegetable, Miracle	Class announcements Student-led discussion	Describe a seasonal diet	Increased knowledge of the importance of eating seasonally Change in behavior regarding seasonal eating	Observational Learning Facilitation Consciousness raising

Table 9 Continued

Class	Topics	Reading and Viewing Assignments	Class Activities	Learning Objectives (SWBAT)	Proposed Outcomes	Theoretical Construct
25	Final Project Presentations: groups 1, 2, 3	None	Class announcements Student presentations	Advocate for a food-related cause Describe alternative solutions to current food-related problems	Increased knowledge of information presented in videos Identify alternative solutions to the problems presented Increased self-efficacy	Mastery Performance Verbal Persuasion Facilitation Observational Learning Consciousness raising
26	Final Project Presentations: groups 4, 5, 6	None	Class announcements Student presentations			
27	Final Project Presentations: groups 7,8	None	Class announcements Student presentations			
28	Agriculture	Our Daily Bread. Film by Nikolaus Geyrhalter (2005) 92 mins.	Class announcements Watch video Class discussion (40 min)	Assemble a big-picture idea of the current food system and the health implications	Increased self-efficacy to identify threats to health in the current food system and alternative solutions	Observational Learning Facilitation Consciousness raising
29	Agriculture	Our Daily Bread. Film by Nikolaus Geyrhalter (2005)				
30	Wrap-up	None	Class announcements Survey Final thoughts Provide presentation feedback	Describe the implications of the current food system and ways to identify alternative solutions	Increased self efficacy to choose healthy food options Improved healthy diet	Facilitation Observational Learning Consciousness raising; Moral Disengagement Environmental reevaluation Decisional balance Self-liberation Counter-conditioning Increased Self-efficacy

Overall, the combination of class activities acted on related mediators, promotion behavior change in students who attended Food, Society, and Public Health. Figure 1 presents a concise summary of the process. Students gained knowledge through class activities via observational learning, facilitation, mastery experience, social modeling, and consciousness-raising. This resulted in environmental reevaluation, moral disengagement, and promoted decisional balance. Barriers were identified (access to healthy food) and alternative options were suggested (farmer's market, CSAs, Trader Joe's), providing the opportunity for counter conditioning, increased self-efficacy, and self-liberation. Figure 2 provides the detailed logic model.

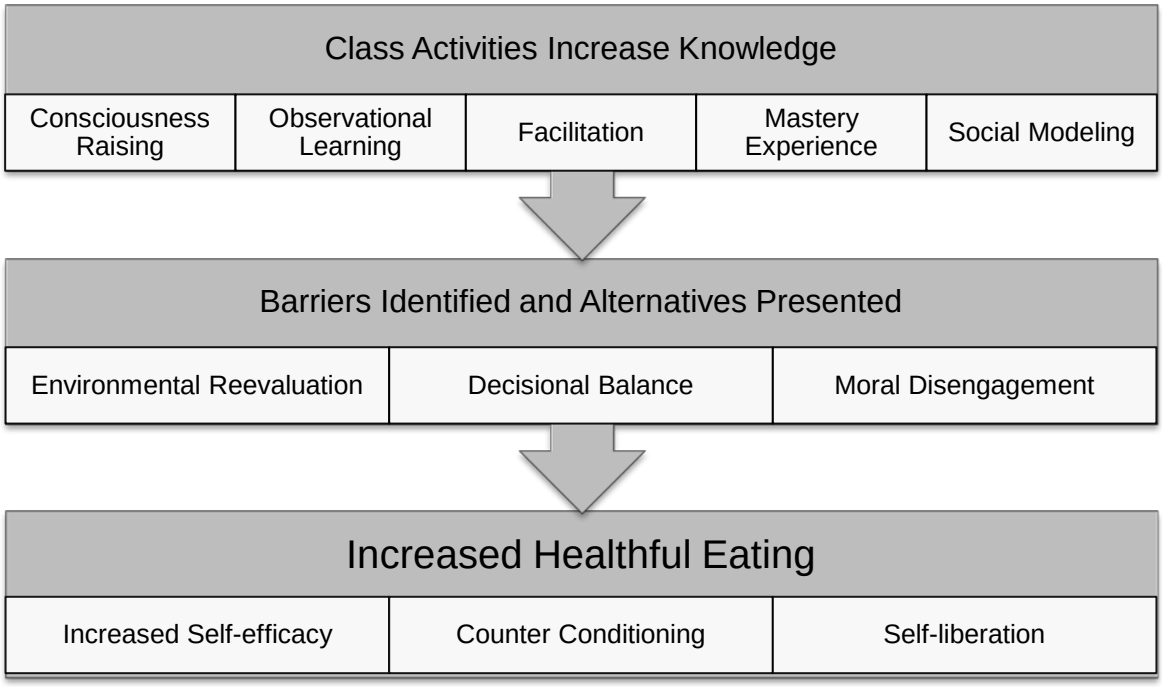

Figure 1: Summary of proposed behavior change process

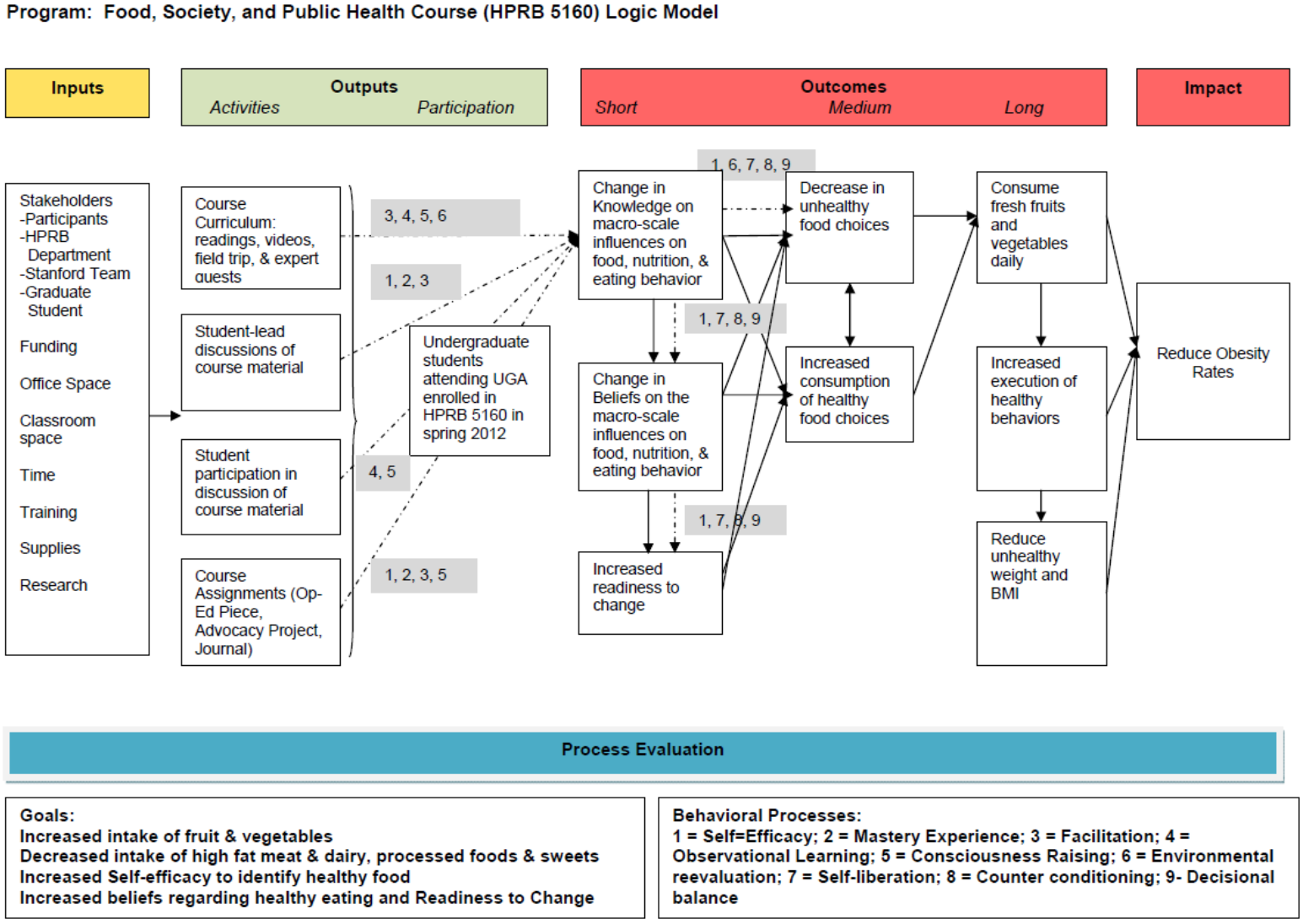

Figure 2: Logic Model

Grading

Students received a letter grade (*A*-*F*) based on their performance on the assignments which was directed by detailed grading rubrics given to the students in advance. Participation in the intervention did not determine or influence their course grades.

Control Groups

Three different courses served as a control for the intervention group. Grading for these courses followed the instructor of record's grading format, and participant grades were not impacted by participation in the intervention. The first course, Health and Wellness (HPRB 1710), was a general health education course which offered instruction on multiple health education topics. HPRB 1710 provided direct, factual health information on each health topic. Using HPRB 1710 as a control allowed for the comparison of a traditional health intervention, which aims to change health behaviors. Three sections of HPRB 1710 were surveyed as part of the health control group.

The second course that served as a control was English Composition II (ENGL 1102), which was part of the core curriculum at the University of Georgia. All undergraduate students must complete the course to graduate. Students from two sections of ENGL 1102 participated as a non-health control.

The third course that served as a control was English Literature (ENGL 4000), which was an upper-level English course offered during the spring semester. One section of ENGL 4000 was included as a non-health control. ENGL 1102 and ENGL 4000 did not provide any health information; therefore they were ideal courses to use for comparison. The three English courses were combined to create one final non-health control group.

3.4 Measures

This study used qualitative and quantitative measures. Process data and outcome data were collected during the spring 2012 semester. Outcome data were collected using the survey in Appendix B, and the focus-group question guide in Appendix C. Process data were collected through course documentation (i.e. student attendance and participation data) and student feedback from the mid-semester evaluation and focus groups.

Outcome Evaluation

Outcome data were collected using the instrument in Appendix A. The instrument consisted of 96 questions that were compiled from the Harvard Food Frequency Questionnaire, the Nutrition Self-Efficacy scale, Stages of Change Questions, physical activity questions, personal beliefs, and demographic questions. The Stanford University researchers supplied most of the questions. A description of each type of question is in the following section.

Beliefs

Six questions assessed changes in beliefs related to food and eating using a six-point Likert-like scale. Higher scores indicate perceived importance with the statement. These questions addressed the importance of eating a healthful diet, staying physically fit, environmental sustainability, animal rights, social justice, and ethics and morality. These questions address social and ideological movements and can serve as process motivators for increasing healthy behaviors. Available responses are 1) Not at all important compared to other things in your life, 2) Less important, 3) About as important, 4) More important, 5) Just about the most important, and 6) The very most important. These questions were developed and tested in the original research study conducted at Stanford University, and were reported as having demonstrated “satisfactory reliability and validity among college students” in unpublished data (Hekler et al., 2010). The

environmental sustainability and animal rights questions were moderately positively skewed and the square root transformation was used to increase normality. The other four beliefs variables were approximately symmetrical so transformation was not necessary. All analyses were carried out on transformed data, however raw means and standard deviations are reported.

Harvard Food Frequency Questionnaire

The Harvard Food Frequency Questionnaire (HFFQ) is a semi-quantitative food assessment tool (Willett et al., 1985). This retrospective data collection method uses 50 questions to ask respondents to report their usual consumption of specific foods over the last 30 days. The quantity of food consumed is estimated using a standard portion size, and the respondent is asked to report the number of servings consumed (Reeves & Pace, 2008). It assesses food consumption and portion sizes based on the following categories: dairy, fruit, vegetables, eggs, meat, fish, cereal, bread, starches, beverages, sweets, baked goods, supplements, and miscellaneous foods (Willett et al., 1993).

Respondents were asked, "*For each of the food or drinks listed, select how often on average you have eaten, drank, or used the amount specified during the last month.*" Available responses were: 1) *Never or less than 1 per month*, 2) *1-3 per month*, 3) *1 per week*, 4) *2-4 per week*, 5) *5-6 per week*, 6) *1 per day*, 7) *2-3 per day*, 8) *4-5 per day*, and 9) *6+ per day*. Table 10 lists the number of questions for each food category used in the attached questionnaire.

Table 10
Types and quantities of food questions in questionnaire

Food Type	Number of Questions
Drinks	5
Dairy	8
Fruits	7
Vegetables	12
Eggs, Meat, Fish	11
Sweets, Baked goods, misc.	7

The HFFQ provides the percentage of total calories obtained from macronutrients, while also calculating the actual daily intake of protein, carbohydrates, fats, vitamins and minerals based on current dietary reference intakes (HSPH Nutrition Department, 2011). Due to inconsistent levels of reliability and validity of testing individual food items, they were grouped into food groups (fruits, vegetables, high-fat meat, high-fat dairy, processed food, and sweets) (Feskanich et al., 1993; Hu et al., 1999). The fruit group includes all items in the fruit sections, and vegetables include all items in the vegetable section. High-fat meat includes bacon, hot dogs, hamburgers, processed meats (e.g., sausage, lunch meat), beef, pork, or lamb in a sandwich or as a main dish. High-fat dairy includes whole milk, ice cream, cheese, margarine, and butter. Sweets include chocolate, candy without chocolate, pie or cakes, and cookies. Processed foods include fast food, soda, French fried potatoes, and processed snack food. The grouped data were significantly positively skewed, with skew coefficients greater than 1.0, and were logged to reduce skew and increase normality. All analyses were carried out on the transformed data; however raw means and standard deviations are reported for ease of interpretation.

The HFFQ was tested against more robust data collection instruments (24-hour recall, daily food logs, other survey instruments, and biomarkers) and has demonstrated correlation coefficients that fall within the acceptable range of .40 to .60 in many or most

studies (Neuhouser & Patterson, 2008). Reliable correlation coefficients for FFQs are generally in the range 0.6 to 0.7 (Neuhouser & Patterson, 2008), and multiple studies have demonstrated the HFFQ meets these criteria (Feskanich et al., 1993; Forsythe & Gage, 1994; M. C. Morris, Tangney, Bienias, Evans, & Wilson, 2003). If administered correctly, the HFFQ provides valuable information regarding the food intake of various segments of the population.

A healthful diet score was calculated using baseline median splits to create an overall composite score combining findings for the second and third research questions (Trichopoulou, Coustacou, Barnia, & Trichopoulous, 2003). A value of 0 or 1 was assigned to each of the six food types. For beneficial food (fruits and vegetables), intake below the median was assigned a value of 0, and intake at or above the median was assigned a value of 1. For non-beneficial food (high-fat meat and dairy, processed food, and sweets), intake below the median was assigned a value of 1, and intake at or above the median were assigned a value of 0. The values were summed providing a healthful diet score. Scores ranged from 0 to 6, with higher score indicating a healthier diet. The raw data were near-normal, therefore all analyses were carried out on the raw data.

Food Purchasing Behaviors

Five questions assessed changes in food purchasing behaviors, particularly buying locally grown fruits and vegetables, direct from the grower, organic produce, grass-fed beef, and free-range chicken. Assessing the change in purchasing grass fed beef could serve as an indicator for decreased high-fat meat consumption. Grass-fed beef is lower in fat content when compared to grain fed cattle (Grimm et al., 2010) Response categories were 1) I do not buy (specified food item), 2) never, 3) sometimes, 4) about half the time, 5) most of the time, and 6) all the time. These questions were included in the instrument used in the original research study conducted at Stanford University, and the reliability and validity coefficients were not reported (Hekler et al.,

2010). The data were moderately and significantly positively skewed, therefore a square root transformation (locally grown) and log transformation were applied. All analyses were carried out on transformed data, however raw means and standard deviations are reported.

Nutrition Self-Efficacy Scale

The Nutrition Self-Efficacy Scale (Cronbach's α = .87; test-retest reliability =.59) consists of five items that assessed nutritional self-efficacy (Schwarzer & Renner, 2000). Questions address overcoming barriers to stick with healthful foods. The Nutrition Self-Efficacy Scale used a four point Likert-like scale, with high scores indicating agreement with the statement (1 = *Not at all true,* 2 = *Hardly true*, 3 = *Moderately true*, and 4 = *Exactly true*) (Schwarzer & Jerusalem, 1995). The individual scores were summed for each participant to create a scale score. Sum scores could range from 5 to 20. Changes in mean sum score were calculated using paired samples *t* test. Respondents answered the question "How certain are you that you could overcome the following barriers?" when reading each of the following questions:

1. I can manage to stick to healthful foods even if I need a long time to develop the necessary routine.
2. I can manage to stick to healthful foods even if I have to try several times until it works.
3. I can manage to stick to healthful foods even if I have to rethink my entire way of nutrition.
4. I can manage to stick to healthful foods even if I do not receive a great deal of support from others when making my first attempts.
5. I can manage to stick to healthful foods even if I have to make a detailed plan.

One question was moderately negatively skewed (detailed plan), therefore a squared transformation was applied. The other four questions were approximately

symmetric and were not transformed. All analyses were carried out on transformed data; however, raw means and standard deviations are reported.

Stages of Change Questions

The Stages of Change section included two types of questions; an algorithm based on a series of questions that included a skip pattern, which assessed fruit and vegetable intake, and three one-dimensional questions which assessed low-fat dairy, low-fat meat, and processed food intake (Glanz et al., 1994; G. Greene, Fey-Yensam, Padula, Rossi, & Rossi, 2004). With each type of question, once a participant was assigned a stage, the remaining response codes were not processed.

The multi-part algorithm question first assessed the number of servings the participant ate each day. This question was testing the readiness to change to meet the USDA dietary recommendations of 5 or more servings of fruit and vegetables per day. Participants had the option to choose *0 - 6 or more servings.* Explicit instructions detailed how to proceed depending on their answer. If a respondent answered 0, 1, 2, 3, or 4, they were instructed to move onto question 1. If they selected 5 or 6 or more servings, they were instructed to move onto question 3.

1. You answered that you usually eat four or fewer servings of fruits or vegetables each day. Do you intend to start eating five or more servings of fruits and vegetables a day in the next 6 months?

If they responded no, they skipped to the next group of questions, and they were classified as contemplators. If they answered yes, they were instructed to skip to question 2.

2. Do you intend to start eating five or more servings of fruits and vegetables a day in the next 30 days?

If they responded no, they skipped to the next group of questions, and they were classified as preparation. If they answered yes, they were instructed to skip to question the next group of questions and were classified as preparation.

3. In question 72 you indicated that you were eating 5 to 6 servings of fruits and vegetables each day. Have you been eating 5 or more fruits and vegetables a day for more than 6 months?

If they responded no, they no were classified as action. If they answered yes, they were classified as maintenance. Scores ranged from 1 – 5, and a higher score indicates a higher readiness to change. A score of 1 = *precontemplation*, 2 = *contemplation*, 3 = *preparation*, 4 = *action*, and 5 = *maintenance*.

Three one-dimensional questions addressed intake of low-fat dairy, low-fat meat, and processed foods. The Stages of Change one-dimensional questions used a six point response options, (1 = *I do not consume [food item],* 2 = *I am not currently consuming [food item] and I am not thinking of doing so in the upcoming six months.*, 3 = *I am not currently consuming [food item] but I plan to do so within the next six months.*, 4 = *I am not currently consuming [food item] but I plan to do so within the next month,* 5 = *I am currently consuming [food item] but I have been doing so for less than six months.,* and 6 = *I am currently consuming [food item} and I have been doing that for more than six months.*) Scores ranged from 1 – 6, and a higher score indicates a higher readiness to change. A score of 1 = *I do not consume dairy*, 2 = *precontemplation*, 3 = *contemplation*, 4 = *preparation*, 5 = *action*, and 6 = *maintenance*.

The fruit and vegetable data were near normal, so they were not transformed. The low-fat meat and low-fat dairy data were significantly negatively skewed, therefore they were logged. The processed food data were moderately positively skewed and a square root transformation was applied. All analyses were performed with transformed data when appropriate, however raw means and standard deviation scores are reported.

Demographic Questions

There were 18 demographic questions included in this questionnaire. These questions addressed vegetarianism (yes, no), membership in organizations (environmental, animal rights, social justice, Greek life, University of Georgia athletics), declared major, year in school, age, and current living situation (residence hall, fraternity/sorority house, off campus housing, with parents, or other). Additional demographic questions were the five-digit zip code where the student grew up, gender, ethnicity, participation in the UGA meal plan, religion, and height and weight.

The participants in the intervention group differed significantly for age, living situation, and year in school. Intervention participants were older, less likely to live on campus, and were only upperclassmen (juniors and seniors). These are traits that are related to making autonomous food decisions. A Pearson correlation coefficient was calculated assessing the relationship between participants' age, year in school, and living situation. A moderate, positive correlation was found between class and age (r (189) = .645, $p < .001$), class and living situation (r (188) = .649, $p < .001$), and age and living situation (r (189) = .457, $p < .001$), indicating a significant, linear relationship between the three variables. Older participants tend to be upper classmen and live in off-campus housing. A composite covariate variable combining year in school, age, and current living situation was created using principle components analysis. This composite variable was used in the repeated measures ANOVA to control for autonomy, which consists of age, year in school, and current living situation.

Focus Groups

Approximately one month before the end of the semester, intervention participants were asked to attend a 1-hour focus group. Four focus groups with 6-8 participants in each group were conducted after final course grades were submitted to the Registrar. The focus groups were held during the final exam period for each class to

ensure students were able to attend (this time was reserved in their calendars since the beginning of the semester). All but one (n=28) of the intervention students participated in a focus group. We met in a conference room on campus, which allowed for a quiet and comfortable environment. We provided light refreshments to aid in socialization prior to the focus group start, and students received a $10 gift card to a local restaurant that promoted the themes discussed in class for attending.

The purpose of the focus group interviews was to understand the influence of the class on participant engagement in the food movement, eating habits, and perceptions of the course. Participants were asked to describe the following: 1) their engagement in the food movement, 2) topics from the class that were discussed with their family and friends outside of the class, 3) the class influence on their perspective on the role of morality and ethics in eating and food production, 4) eating behaviors, and 5) perceptions of HPRB 5160. Appendix C provides the consent document, the focus group guidelines, and the list of questions that directed the conversation.

Equipment consisted of one compact digital recorder. Prior to participants' arrival, the equipment was tested the recorder was placed across the middle of the table. Two note takers were present to take detailed notes during each focus group to enable the facilitator to focus on the discussion. Appendix D includes the structured note sheet used by the note takers during the focus groups. Figure 3 depicts the Seating arrangement, with circles representing participants, the star representing the facilitator, and the triangles representing the note takers.

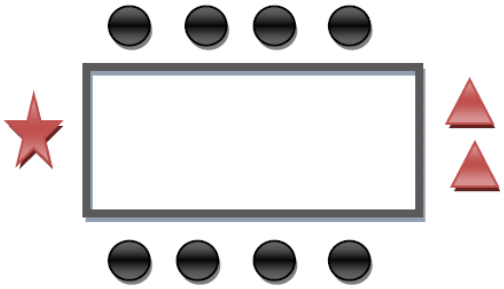

Figure 3: Seating Arrangement
Circles = participants; Star = facilitator; Triangles = note takers

Prior to initiating the focus group topic, the facilitator reviewed the content of the informed consent document and asked participants to read and sign the form if in agreement. The participants and facilitator already had a rapport after attending Food, Society, and Public Health together for the last 15 weeks, so icebreakers were not necessary. The facilitator asked each question, giving each student time to respond, and to discuss the question within the group. Table 11 provides a summary of each focus group regarding participants, length of time, and any additional notes.

Table 11
Focus Group Participants, Duration, and Additional Notes

	Participants	Duration	Additional Notes
Group 1 (9:00 AM)	7 Females 2 African American 5 Caucasian	58 min	One participant arrived 4 minutes late; the mood was friendly and conversational
Group 2 (10:30 AM)	6 Females 5 Caucasian 1 Middle-Eastern	59 min	One participant arrived 10 minutes late; the mood was friendly, relaxed and conversational
Group 3 (12:30 PM)	2 Males 1 Caucasian 1 Asian 5 Females 4 Caucasian 1 African American	55 min	The mood was friendly, congenial, and conversational
Group 4 (2:00 PM)	8 Females 1 African American ..4 Caucasian 1 Asian 2 Latina	65 min	Good conversation flow, open and excited discussion

Process Evaluation

Process evaluation included classroom records, observations made during class, and information regarding student perceptions of the course. These data were collected using systematic methods throughout the semester to assess fidelity, and dose. Fidelity included determining how well the program was implemented and dose included how much of the intervention each of the participants received.

Classroom Records and Observations

Records were kept related to student attendance and participation in the intervention courses and were used to determine the intervention dose for each participant. During each class, the instructor took notes of who attended, who participated, and what topics were covered in the class. Appendix F contains a typed version of the notes taken by the instructor throughout the semester.

Student Perceptions

Halfway through the semester, a mid-semester evaluation was given to the students to provide feedback on how the course was progressing. In addition, focus group questions probed at student perceptions of the course structure, topic, instructor, and overall perceptions. Appendix E contains the focus group transcripts, and Appendix G provides a summary of the mid-semester course evaluations.

3.5 Data Management and Analysis

Quantitative Data

Survey data were collected in each class at the beginning and end of the semester. The instructors of each course were contacted to determine a time convenient to their course schedule, and appointments were made to administer the surveys. Paper surveys were distributed to students during each class, and time was allotted to allow them to complete the form, which took approximately 15 minutes. Multiple protections were implemented to ensure the intervention participants did not

relate the survey with the Food, Society, and Public Health course and to reduce researcher bias. A teaching assistant from the HPRB department administered the survey to the intervention participants. The course instructor administered the survey in the control courses. Students in all courses were informed the research was for a project being managed by Dr. Marsha Davis to reduce the likelihood of measurement bias.

The forms were numbered, and a key was created to organize the forms into each participant group. The data were entered immediately upon collection. Random spot checks were performed, comparing raw data forms to the electronic data file to ensure accuracy. Raw paper data were stored in a locked filing cabinet in the researcher's home office. After one year, raw paper data will be destroyed. Electronic data files were kept on a password-protected computer and were only be accessed by members of the research team.

Qualitative Data

When the focus groups were completed, the audio files were transcribed. A process of constant comparative analysis was followed to obtain compact summaries of each focus group to can be further analyzed for recurring themes (Glaser & Strauss, 1967). Data were chunked into smaller units, coded, and groups into categories. Themes emerged from the categories based on the content of each group (Onwuegbuzi, Dickenson, Leech, & Zoran, 2009). Care was taken during the constant comparison analysis process to ensure accuracy in conclusions by citing example statements from the focus groups. These data were analyzed to identify recurring themes relating to participants' affect, beliefs, and self-efficacy. Focus Group data were analyzed alongside the survey instrument results to develop a deeper understanding of the impact of the program.

Outcome Variables

The outcome variables for this study were changes in the consumption of fresh fruits and vegetables, high-fat dairy products, high-fat meat, sweets, and processed foods. Body Mass Index (BMI) was assessed for the purpose of classifying students as either underweight, normal weight, overweight or obese, however due to the short time frame of the intervention a change in BMI was not expected.

In addition, behavioral constructs were measured, including nutritional self-efficacy, nutritional readiness to change, and beliefs related to the social issues discussed in class. These issues are the importance of each of the following: environmental sustainability, animal rights, eating a healthful diet, staying physically fit, social justice, and ethics and morality.

Analysis plan

Data were entered upon collection (at the beginning and end of the semester). The data were screened for missing values as well as for the accuracy of data entry. Once accuracy was confirmed, the data were cleaned. The responses to many questions were skewed, and were transformed to increase normality. All analyses were carried out on the transformed data, however raw means and standard deviations are reported for ease of interpretation. The data were analyzed using SPSS 20 (SPSS for Windows, 2012). Statistical significance was defined as $p < .05$. Specific analytic techniques included the following methodological procedures:

- Descriptive statistics
- Analysis of Variance to measure differences between outcome variables (dependent variable) of the intervention group compared to the control groups (independent variable). Tukey's HSD procedure was performed to control for the family-wise error rate. Small sample size limited the ability to perform substantial subgroup reporting.

- Paired Samples t-tests to analyze the within-group pre-post changes of the FFQ items, behavioral constructs, and purchasing behaviors.

Missing data

During the course of the semester, University of Georgia policy allows students to withdraw from courses without grade penalty up to the middle of the semester. This resulted in different sample sizes from pre to post intervention. In cases where post-test data were missing, the student was dropped from the data analysis. If data were missing at an item level (failure to complete an item on the FFQ), the cases with missing data were eliminated but only on the analyses where they have missing data.

Sample Size

The discussion-based format of the intervention limited the sample size, which limited statistical power. This was considered while developing the intervention for the University of Georgia by creating two sections of the course to allow for a larger sample. The initial study had one section of 28 participants (Hekler et al., 2010). All efforts were made to increase the number of participants, but ultimately the intervention group ended up with 29 participants, therefore limiting statistical power.

Confidentiality and Data Security

All data were obtained for the purposes of this project alone. There was minimal risk to students participating in this research. Students benefited from this research by gaining a better understanding of the interactions of the food system with society, which they can in turn share with their peers and families. This knowledge is essential to foster healthy eating decisions, resulting in improved health outcomes.

All data were confidential. Student names were used to collect the pre-post food frequency questionnaires to allow for instrument matching. FFQ data were entered into an electronic database, at which time each student was assigned a unique identifier. The student's name and student identification number were not entered into the

electronic database. A separate, password protected file was created linking participant names, student identification numbers, and the program-specific identification code. Electronic data files did not contain any identifying information. All hard copy data were stored in locking file cabinets in the Principal Investigator's office. Electronic data were stored on a password protected computer which was stored in the researcher's office. The office was locked at all times ensuring both the raw data and electronic files were secure. Reports of the findings were aggregated and do not include any identifying information regarding students who participated in the program.

CHAPTER 4:

RESULTS

This chapter presents the results of the stealth nutrition intervention implemented in the Food, Society and Public Health course during the 2012 spring semester at the University of Georgia. The goal of the intervention was to increase healthy eating behaviors among college students. This chapter has nine sections. Section 1 provides a description of the sample. Section 2 responds to the first research question on food purchasing behaviors, "Was the Food, Society, and Public Health curriculum more effective than the control courses in increasing healthy food purchasing behaviors?" Sections 3 and 4 respond to the second and third research questions on dietary intake, "Was the Food, Society, and Public Health curriculum more effective than the control courses in increasing the consumption of fruits and vegetables?," and "Was the Food, Society, and Public Health curriculum more effective than the control courses in decreasing the consumption of high-fat meat, high-fat dairy, processed food, and sweets?" Sections 5 through 7 respond to the fourth, fifth, and sixth research questions on behavioral constructs, "Was the Food, Society, and Public Health curriculum more effective than the control courses in increasing self-efficacy related to eating healthy food?," "Was the Food, Society, and Public Health curriculum more effective than the control courses in increasing participant's readiness to change in healthy eating than students in the control groups?," and "Was the Food, Society, and Public Health curriculum more effective than the control course in increasing participant's beliefs about the importance of healthy behaviors?" Section 8 discusses the process evaluation, and Section 9 summarizes the chapter.

4.1 Description of the Sample

Surveys were collected after the end of the drop-add period at the beginning of the semester and before final exams began at the end of the same semester. A total of 227 pre-tests were collected in January 2012, and 197 post-tests were collected in April 2012. A total of 191 students had both a pre-test and a post-test, and these students were included in the analysis.

Table 12 presents demographic findings split by group. Intervention participants were predominately female (93.1%), White (69%), Health Promotion and Behavior majors (72.4%), and lived in off-campus housing (75.9%). All intervention participants were juniors or seniors, and none participated in the University of Georgia meal plan. The mean age of the intervention participants was 21.2 and they ranged in age from 20 to 24.

Students enrolled in the health-control courses were predominately female (83.3%), White (69.3%), and lived in off-campus housing (50.9%). Health Promotion and Behavior was the most frequent major (11.4%) of all majors represented in the group. The health control courses had freshman through senior students, with only 41.3% being juniors and seniors. 38.6% of these students participated in the University of Georgia meal plan. The mean age of the health control participants was 20.1 and they ranged in age from 18 to 36.

Students enrolled in the non-health control courses were predominately female (64.6%), White (70.8%), and lived in off-campus housing (47.9%). English was the most frequent major (35.4%) of all majors represented in the group. Freshman through seniors were in the non-health control courses, with 47.9% being juniors and seniors. Additionally, 47.9% participated in the University of Georgia meal plan. The mean age of the non-health control participants was 19.69 and they ranged in age from 18 to 24. The health control and the non-health control courses were not significantly different, so

they were combined into one control group for analysis. Analysis of variance reveal the intervention participants were significantly older than the control group participants *(F*(1,189) = 11.442, *p* = .001). A Chi-square test for independence revealed that there were significant differences between the intervention group and the combined control group with living situation, year in school, and meal plan membership. Intervention participants tended to live off campus more than control participants ($X^2(4) = 13.699$, $p = .008$); they were only juniors and seniors ($X^2(3) = 31.905$, $p < .000$); and they tended not to be on the UGA meal plan ($X^2(1) = 18.474$, $p < .000$).

Paired samples *t*-tests assessed differences between pre-test and post-test responses, and repeated measures ANOVA were used to test for differences between groups. The data were highly skewed, requiring transformation to meet the assumption of normality for parametric tests. A composite covariate variable for autonomy was created by combining year in school, age, and current living situation using principal components analysis. Focus group data from the intervention group provide support for the quantitative findings.

Table 12
Demographics, % unless otherwise indicated

Variable	Intervention Course (n=29)	Health Control (n=114)	Non-Health Control (n=48)
Demographics			
Female	93.1	83.3	64.6
Race/Ethnicity			
White	69.0	69.3	70.8
Latino/Hispanic	6.9	7.9	4.2
African American/Black	13.8	9.6	4.2
Asian/Asian American	6.9	10.5	20.8
Other	3.4	2.6	0
Grade Level			
Freshman	0	29.8	47.9
Sophomore	0	28.1	4.2
Junior	48.3	21.1	25.0
Senior	51.7	20.2	22.9
Major			
Health Promotion & Behavior	72.4	11.4	2.1
Psychology	6.8	10.5	2.1
Biology	3.4	9.6	8.3
English	0	0.9	35.4
Communications	6.8	1.8	0
Other	10.6	65.8	52.0
Age (Mean)	21.2	20.1	19.7
Current Living Situation			
Residence Hall	10.3	38.6	41.7
Fraternity/Sorority House	3.4	9.6	2.1
Off-Campus Housing	75.9	50.9	47.9
With Parents/Relatives	10.3	0.9	6.3
UGA Meal Plan			
Yes	0	38.6	47.9
No	100.0	61.4	52.1
Overweight (BMI > 25)	10.3	13.2	16.7
Lost to Follow-up	9.4	17.4	20.0

4.2 Food Purchasing Behaviors

1. Was the Food, Society, and Public Health curriculum more effective than the control courses in increasing healthy food purchasing behaviors?

   Hypothesis 1: Students in the intervention group will report increased healthy food purchasing behaviors than students in the control groups.

Five questions addressed healthy food purchasing behaviors, assessing changes in the frequency of purchasing fruits and vegetables that were 1) locally grown, 2) direct from a farmer, or 3) organic; 4) buying grass fed beef, and 5) free-range chicken. Food purchasing behavior data were collected using the questions developed from the model study (Hekler et al., 2010). Data from all five questions were significantly, positively skewed, indicating relatively few high values. Skew coefficients were greater than 1.0, and the data were logged to increase normality. All analyses were conducted on the transformed data, however raw means and standard deviations are reported for ease of interpretation. Table 13 presents the raw means and standard deviations score for each behavior for intervention and control participants.

Table 13
Personal food purchasing behaviors, Raw values reported (M±SD)

Variable	Intervention Course (n=29)		Control Courses (n=162)	
	Pre	Post	Pre	Post
Locally grown	3.14±1.16	3.76±1.15***	2.65±0.99	2.68±1.01
Farmer's market/ farmer	2.55±0.99	2.93±0.92**	2.41±0.86	2.42±0.89
Organic	2.86±0.83	4.31±1.20***	2.83±1.21	1.83±1.25
Grass fed beef	1.97±0.78	3.00±1.87**	2.11±0.99	2.23±1.21
Free-range chicken	2.66±1.26	3.21±1.86	2.30±1.06	2.48±1.21*

*p<0.10, **p<0.05, ***p<0.01. (*M* = Mean; *SD* = Standard Deviation)

Locally Grown Fruits and Vegetables

Among intervention group participants, there were statistically significant changes in food purchasing behaviors for four of the five behaviors from pre-test to posttest. Among control group participants, there were statistically significant changes in food purchasing behaviors for one of the five behaviors. There were statistically significant differences between the intervention group and the control group for multiple behaviors. Raw means and standard deviations are reported.

The frequency of purchasing locally grown fruits and vegetables among intervention participants on the pretest was 3.14 (*SD* = 1.16), frequency of purchasing locally grown fruits and vegetables on the posttest was 3.76 (*SD* = 1.15). A statistically significant increase of .621 from pretest to posttest was found ($t(28) = -3.15$, $p = .004$), indicating increased frequency in purchasing locally grown fruits and vegetables.

Analysis of the focus group data reveal similar findings. One participant stated how his or her awareness of the importance of choosing more locally grown produce increased and how he or she is now making an effort to purchase local options "*When I go grocery shopping I used to just grab the tomato's I like, but now I go to Publix and they have products of Florida or the United States, so I try to pick one that is closest to where I live*" (Focus Group 2, lines 955-957). Students discussed the importance of local food, "*Yea, I also like to talk about local food in general and how that's beneficial to our community and our health of course and the environment*" (Focus group 2, lines 1034-1035). One student discussed how he or she would choose locally grown food for the peace of mind it provides and the positive influence on the local economy, "*For me, it's easier for me to buy locally grown things like the farmers market is inexpensive. I don't know if the things I'm buying are sustainably raised, but at least I know that it was grown in the local area and goes back to the local economy*" (Focus group 3, lines 2065-2068). Multiple students described how they began gardening this semester, "*The other*

thing is we planted a garden this semester" (Focus group 1, lines 220-221), "*With my father he's like 'Okay, you want to start a garden. Okay, let's do this. I got the perfect spot outside.' … But it's like the garden part, that's the part that they have accepted. But its kinda funny seeing me doing a garden though since I was out there in stuff I shouldn't be and I had a hoe and I was like, so what am I supposed to do with this again*?" (Focus group 1, lines 408-414). "*I'm moving home after this semester and my parents do a big garden so I look forward to doing that over the summer*" (Focus group 3, lines 1794-1795).

The frequency of purchasing locally grown fruits and vegetables among control participants on the pretest was 2.65 (*SD* = .99), frequency of purchasing locally grown fruits and vegetables on the posttest was 2.68 (*SD* = 1.11). A non-significant increase of .03 from pretest to posttest was found ($t(160) = -.016$, $p = .99$).

A repeated-measures ANOVA was calculated comparing the pre-post responses of food purchasing behaviors with participants in each treatment group. A significant effect was found *(*$F(1,186) = 7.137$, $p = .008$) when controlling for autonomy. The intervention group and control group were significantly different from pre-test to post-test for purchasing locally grown fruits and vegetables. Figure 4 details the change in pre-test to post-test for the intervention group and the control group. The two groups were significantly different, and there was a significant increase in buying locally produced fruits and vegetables among intervention participants.

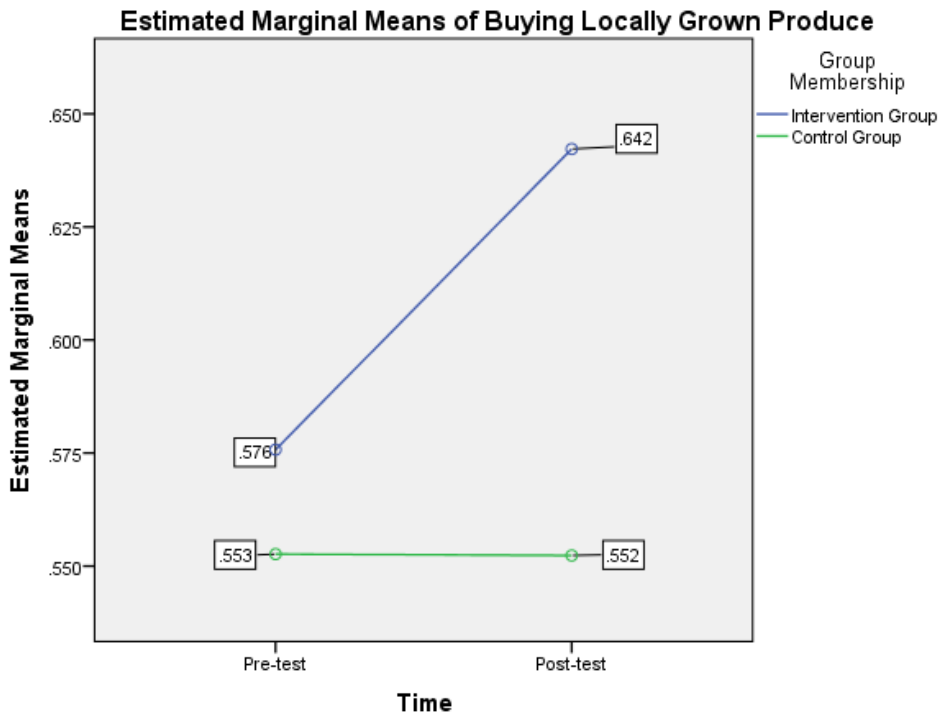

Figure 4: Group differences pre-test to post-test in buying local produce

Purchasing Fruits and Vegetables from Farmers Market or Farmer

For intervention participants, the frequency of purchasing fruits and vegetables from a farmer's market, farm stand, or direct from the farmer on the pretest was 2.55 (*SD* = .99), and the frequency of purchasing fruits and vegetables from a farmer's market, farm stand, or direct from the farmer on the posttest was 2.93 (*SD* = .92). A significant increase of .38 from pretest to posttest was found ($t(28) = -2.503$, $p = .018$). Students actively sought out and identified markets or where they could buy local produce, "*Well for me, before I actually started the class I used to eat anything and everything that my parents bought or I would buy. But after the class I would think about how the animals were treated and how they're planning their food. So then we started buying local, we went into the local market, buying local. The nearest local market to me*

is down the interstate, so we went there a couple times and then we just went and found a farm which is across the street from our house" (Focus group 3, lines 2030-2035). Additionally, one student promoted local farmers markets to her family, "*I've made my mom the last couple of weeks, the farms where I'm from, they've got their little fruit stands and vegetable stands and we went up this weekend and got local vegetables and strawberries and tomatoes. I don't know if that's an organization but I've tried to tell them we need to eat local food, local vegetables. And there's a small store in my home town that its meat is all local so I've been telling them to get our meat from there*" (Focus group 2, lines 863-869).

For control participants, the frequency of purchasing fruits and vegetables from a farmer's market, farm stand, or direct from the farmer on the pretest was 2.41 (*SD* = .86), and the frequency of purchasing fruits and vegetables from a farmer's market, farm stand, or direct from the farmer on the posttest was 2.42 (*SD* = .87). A non-significant increase of .01 from pretest to posttest was found ($t(159) = -.005$, $p = .99$).

A repeated-measures ANOVA was calculated comparing the pre-post responses of food purchasing behaviors with participants in each treatment group. A statistically significant effect was found *(*$F(1,185) = 3.805$, $p = .05$) when controlling for autonomy. The intervention group and control group were different from pre-test to post-test for purchasing direct from a farmer. Figure 5 details the change in pre-test to post-test for the intervention group and the control group. The two groups were different, and there was a statistically significant increase in buying fruits and vegetables from a farmers market or directly from the farmer among intervention participants.

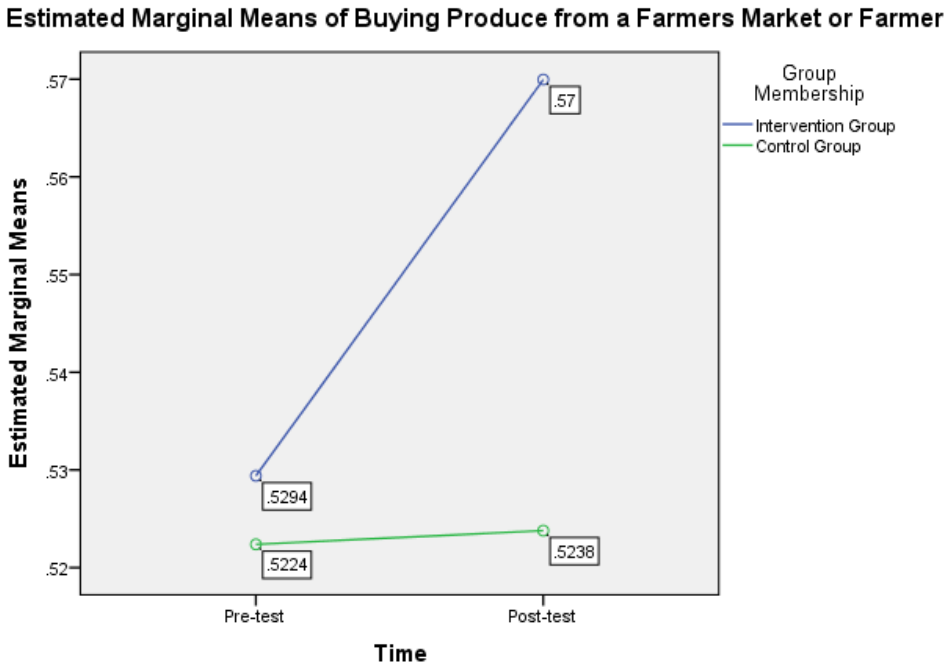

Figure 5: Group differences pre-test to post-test buying produce from a farmers market

Organic Fruits and Vegetables

The frequency of purchasing organic fruits and vegetables among intervention participants on the pretest was 2.86 (*SD* = .83), and the frequency of purchasing organic fruits and vegetables on the posttest was 4.31 (*SD* = 1.20). A significant increase of 1.45 from pretest to posttest was found ($t(28) = -6.449$, $p < .000$), indicating that the frequency of purchasing organic fruits and vegetables has increased. Focus group findings revealed that student perceptions of organic food changed, "*I thought that organic food was a waste of money and before the class. I still think there are the regulations for organic are kind of iffy sometimes, but it just means you have to be more aware as a consumer. Now I shop at Earth Fare,*" (Focus group 3, lines 1772-1775), and students are trying to eat more organic food, "*I try to add more organic or local*" (Focus group 2, lines 1384-1385).

For the control group, the frequency of purchasing organic fruits and vegetables on the pretest was 2.83 (*SD* = 1.21), and the frequency of purchasing organic fruits and vegetables on the posttest was 2.83 (*SD* = 1.25). There was no change from pretest to posttest ($t(159) = 0.0$, $p < .996$).

A repeated-measures ANOVA was calculated comparing the pre-post responses of purchasing organic fruits and vegetables with participants in each treatment group. A statistically significant effect was found ($F(1,185) = 31.950$, $p < .000$) when controlling for autonomy. The intervention group and control group were different from pre-test to post-test for purchasing organic fruits and vegetables. Figure 6 details the change in pre-test to post-test for the intervention group and the control group. The groups were statistically different, and there was a statistically significant increase in buying organic fruits and vegetables among intervention participants.

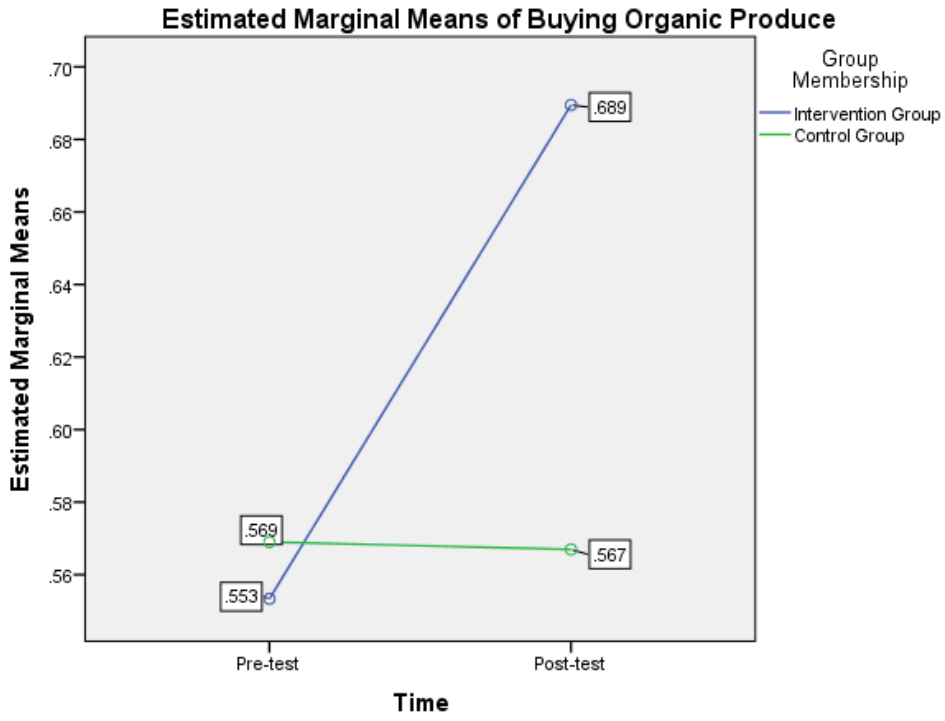

Figure 6: Group differences pre-test to post-test in buying organic produce

Purchasing Grass-Fed Beef

The frequency of purchasing grass-fed beef among intervention participants on the pretest was 1.97 (*SD* = .78), and the frequency of purchasing grass-fed beef on the posttest was 3.00 (*SD* = 1.87). A statistically significant increase of 1.03 from pretest to posttest was found (*t*(28) = -2.606, *p* = .015), indicating that intervention participants were actively purchasing more grass fed beef at the end of the intervention. Focus group findings reveal that student perceptions and behaviors regarding buying grass-fed beef have changed. One student stated, "*Its best to eat meat that's grass fed then the other meat*," (Focus group 1, lines 284-285). Another student stressed how an increase in knowledge prompted him or her to eat grass-fed beef, "*I haven't eaten any meat that hasn't been grass fed, or free-range, or cage free since, I think it was learning about the treatment of the animals that really did it for me. I just can't allow myself to do it; I would feel so bad about myself so I just think having that knowledge allows me to care more*," (Focus group 4, line 2536-2540). Another student indicated he or she felt better eating grass-fed beef, "*When I buy products that are free-range or grass-fed I just feel good about myself and my purchases. When I eat I'm just, I'm not sitting there like oh, this poor animal, they had a good life and a quick death, like that book, like what we were talking about*," (Focus group 3, lines 2011-2014).

Among the control group, the frequency of purchasing grass-fed beef on the pretest was 2.11 (*SD* = .99), and the frequency of purchasing grass-fed beef on the posttest was 2.23 (*SD* = 1.12). A non-significant increase of .12 from pretest to posttest was found (*t*(158) = -1.447, *p* = .150).

A repeated-measures ANOVA was calculated comparing the pre-post responses of purchasing grass-fed beef with participants in each treatment group. A statistically significant effect was found *(F*(1,184) = 15.339, *p* < .000) when controlling for autonomy. The intervention group and control group were different from pre-test to post-test for

purchasing grass fed beef. Figure 7 details the change in pre-test to post-test for the intervention group and the control group. The two groups were statistically significant different, and there was a statistically significant increase in buying grass-fed beef among intervention participants.

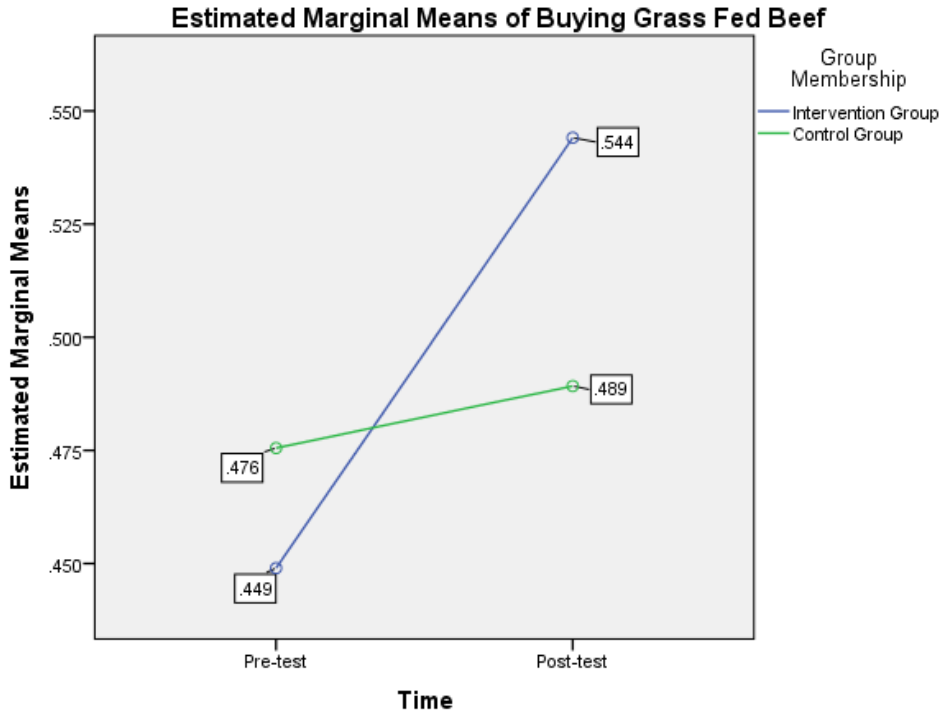

Figure 7: Group differences pre-test to post-test in buying grass fed beef

Purchasing Free-Range Chicken

The frequency of purchasing free-range chicken among intervention participants on the pretest was 2.66 (*SD* = 1.26), and the frequency of purchasing free-range chicken on the posttest was 3.21 (*SD* = 1.86). A non-significant increase of .55 from pretest to posttest was found ($t(28) = -1.013$, $p = .320$). Students did not mention free-range

chicken frequently during the focus groups. When they did, it was often in conjunction with grass-fed beef, as illustrated in the comment in the previous section.

The frequency of purchasing free-range chicken for the control group on the pretest was 2.30 (*SD* = 1.06), and the frequency of purchasing free-range chicken on the posttest was 2.48 (*SD* = 1.21). A non-significant increase of .17 from pretest to posttest was found ($t(160) = -1.920$, $p = .057$).

A repeated-measures ANOVA was calculated comparing the pre-post responses of purchasing free-range chicken with participants in each treatment group. A non-significant effect was found *(*$F(1,186) = 3.656$, $p = .057$) when controlling for autonomy. The intervention group and control group were different from pre-test to post-test for purchasing free-range chicken. Figure 8 details the change in pre-test to post-test for the intervention group and the control group. The two groups were different, and there was a non-statistically significant increase in free-range chicken among intervention participants.

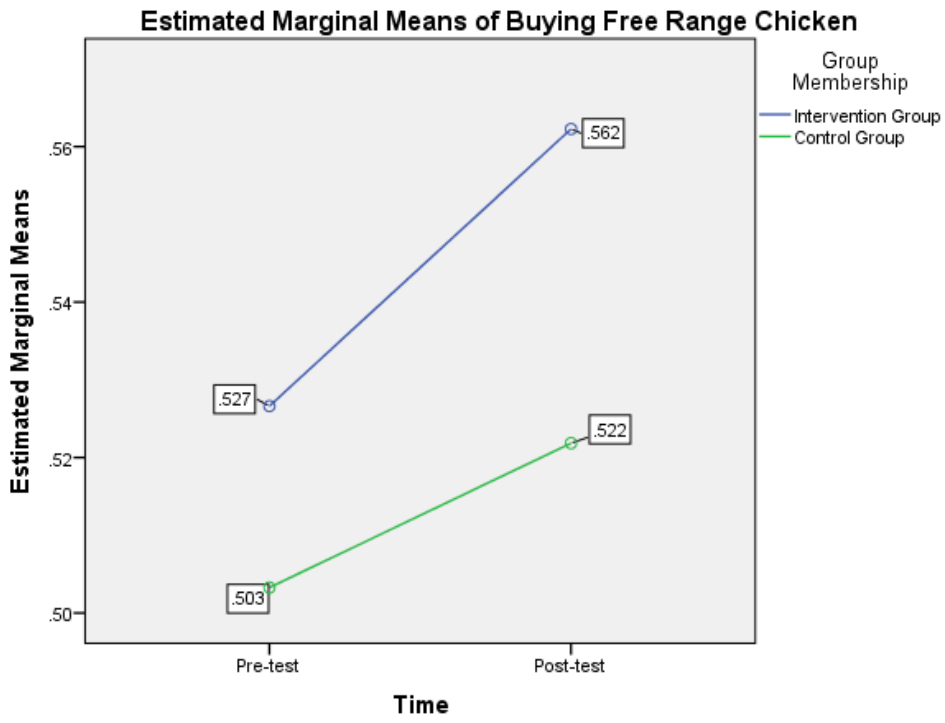

Figure 8: Group differences pre-test to post-test in buying free-range chicken

4.3 Dietary Intake of Fruits and Vegetables

2. Was the Food, Society, and Public Health curriculum more effective than the control courses in increasing the consumption of fruits and vegetables?

   Hypothesis 2: Students in the intervention group will report eating more fruits and vegetables than students in the control groups.

Food consumption data were collected using the Harvard Food Frequency Questionnaire at the food group level. Repeated measures ANOVA and paired sample *t*-tests were used to calculate difference between groups and change over time.

Intake of Fruits and Vegetables

The second research question evaluates the increased intake of fruits and vegetables. Table 14 presents the raw pre and posttest means and standard deviations score for the fruit and vegetable food groups for intervention and control participants.

Table 14
Servings per week of fruits and vegetables, Raw values reported (M±SD)

Variable	Intervention Course (n=29)		Control Courses (n=162)	
	Pre	Post	Pre	Post
Fruits	11.0± 8.279	13.44±8.157*	15.11±14.05	14.03±12.151
Vegetables	22.3±15.779	22.32±17.074	23.26±22.303	21.91±18.559

*p<0.10, **p<0.05, ***p<0.01.

Fruit Intake

The frequency of eating fruits among intervention participants on the pretest was 11.0 (*SD* = 8.279), and frequency of eating fruits on the posttest was 13.44 (*SD* = 8.157). A non-significant increase of 2.44 from pretest to posttest was found (*t*(23) = -1.756, *p* = .092), indicating increased intake of fruits. There was not much discussion specifically about fruit intake during the focus groups. One student mention his or her intake had not changed, “But I really haven’t changed the way I eat fruits and vegetables” (Focus group 4, Lines 2943-2943).

The frequency of eating fruits among control participants on the pretest was 15.11 (*SD* = 14.056), and frequency of eating fruits on the posttest was 14.03 (*SD* = 12.151). There was a decrease in fruit intake among control participant, though it was not statistically significant (*t*(144) = .548, *p* = .584).

A repeated-measures ANOVA was calculated comparing the pre-post responses of fruit intake with participants in each treatment group. A non-significant effect was found ($F(1,167) = 1.070$, $p = .303$) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test for fruits intake. Figure 9 details the change in pre-test to post-test for the intervention group and the control group. The two groups were not significantly different, and there was a significant increase in fruit intake among intervention participants.

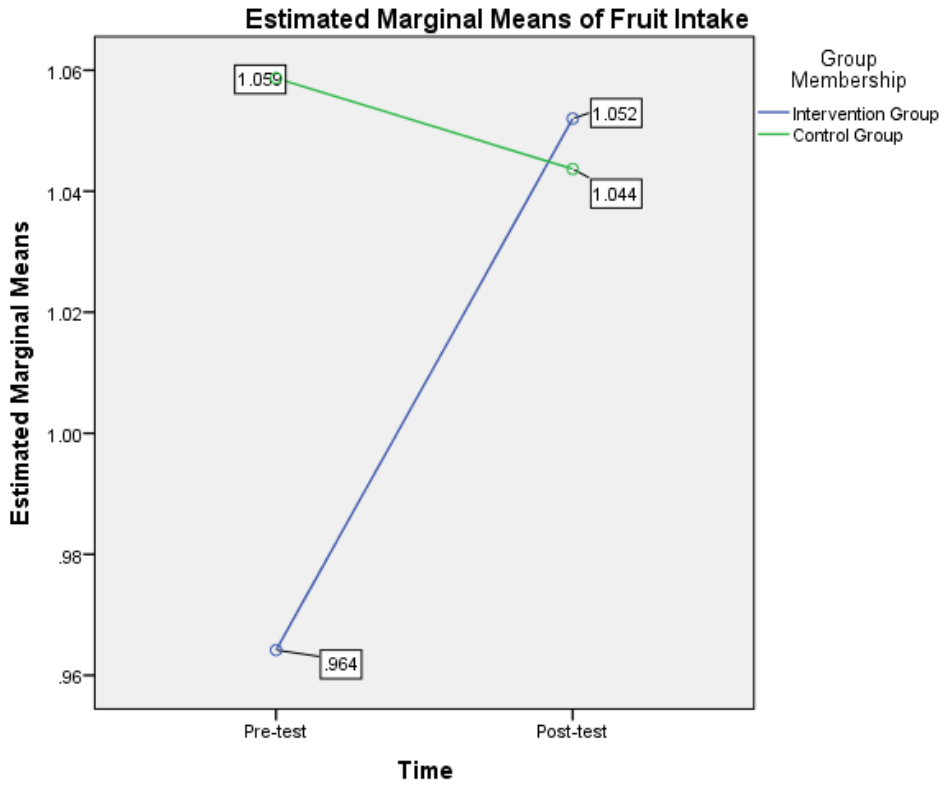

Figure 9: Group differences pre-test to post-test in fruit intake

Vegetable Intake

The frequency of eating vegetables among intervention participants on the pretest was 22.30 (*SD* = 15.779), and on the posttest was 22.32 (*SD* = 17.074). There was a non-significant increase in vegetable intake ($t(22) = -.142$, $p = .889$). During the focus group, participants discussed their intent to eat more local and organic vegetables as described previously. One student stated his or her intent to increase vegetable intake, "*I do try to eat less meat, more vegetables*" (Focus Group 2, Line 1387).

The frequency of eating vegetables among control participants on the pretest was 23.25 (*SD* = 22.303), and the frequency of eating vegetables on the posttest was 21.91 (*SD* = 18.559). There was a decrease in vegetable intake, which was not statistically significant ($t(136) = .404$, $p = .687$).

A repeated-measures ANOVA was calculated comparing the pre-post responses of vegetable intake with participants in each treatment group. A non-significant effect was found ($F(1,155) = .037$, $p = .848$) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test for vegetables intake. Figure 10 details the change in pre-test to post-test for the intervention group and the control group. The two groups were not significantly different, however intervention participants had higher vegetable intake than control participants. There was no significant change in vegetable intake among intervention and control participants. Intervention participants had greater vegetable intake overall when compared to the control participants.

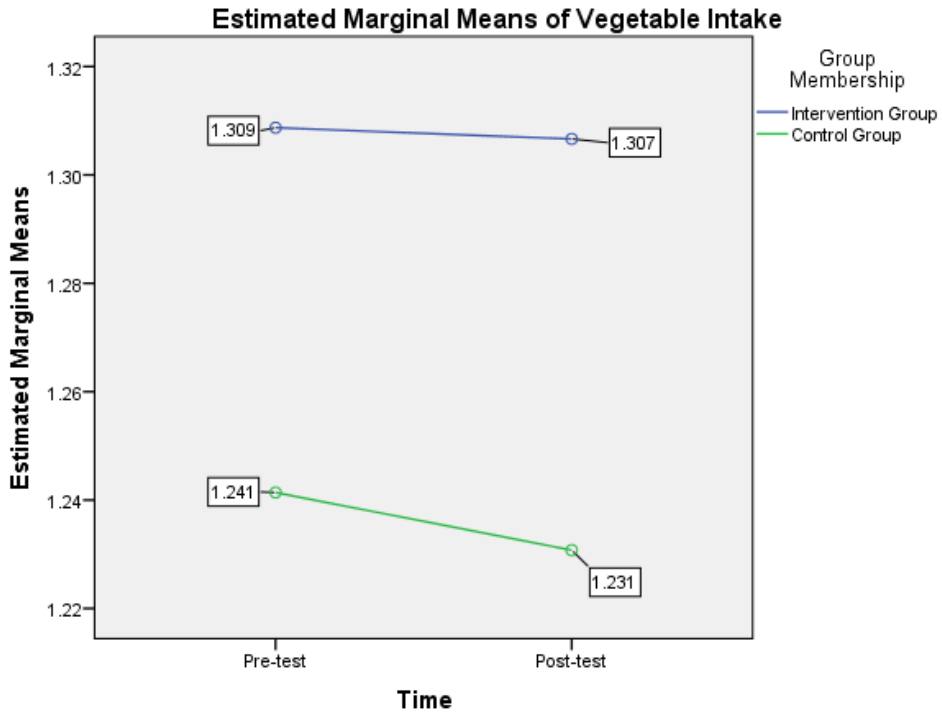

Figure 10: Group differences pre-test to post-test in vegetable intake

4.4 Intake of High-Fat Meat and Dairy, Processed Food, and Sweets

3. Was the Food, Society, and Public Health curriculum more effective than the control courses in decreasing the consumption of high-fat meat, high-fat dairy, processed food, and sweets?

   Hypothesis 3: Students in the intervention group will report eating less high-fat meat, high-fat dairy, processed food, and sweets than students in the control groups.

The third research question evaluates a decreased intake of high-fat meat, high-fat dairy, processed food, and sweets. Table 15 presents the raw means and standard

deviations score for the high-fat meat, high-fat dairy, processed food, and sweets groups for intervention and control participants.

Table 15
Servings per week of dietary intake variables by food group (M±SD)

Variable	Intervention Course (n=29)		Control Course (n=162)	
	Pre	Post	Pre	Post
High Fat Meat	4.17±4.19	4.07±8.64*	5.78±8.43	4.34±7.15***
High Fat Dairy	8.14±5.60	7.07±5.86	11.58±9.10	10.11±8.64**
Sweets	6.53±12.62	6.72±14.63	5.65±6.42	6.33±11.01
Processed Foods	7.86±11.09	5.39±4.83*	7.92±7.57	6.30±5.85***

*p<0.10, **p<0.05, ***p<0.01.

High Fat Meat

The frequency of eating high fat meat among intervention participants on the pretest was 4.17 (*SD* = 4.190), and frequency of eating high fat meat on the posttest was 4.06 (*SD* = 8.636). A non-significant decrease of .11 from pretest to posttest was found ($t(28) = 1.496$, $p = .062$), indicating decreased intake of high fat meat.

Focus group findings support a decreased intake of high fat meat among intervention participants. Many students stated their overall meat intake had decreased, "*My meat and processed food consumption has greatly decreased*" (Focus Group 2, Lines 1324-1324); "*I rarely ever eat meat anymore*" (Focus Group 4, Lines 3027-3028); "*I purchased chicken from Earth Fare the first month of class and I don't think since then I've bought any meat at all*" (Focus Group 4, Lines 3006-3007).

One participant explicitly stated the course content influenced her choosing to eat less meat, "*But as we have talked about the things we've talked about in this class, and just some of the books and movies I find myself eating less and less and less meat. And*

it's not like consciously going to the grocery store and saying I'm going to be a vegetarian or I'm gonna be a vegan. I find myself just saying, 'Okay I don't know if I can really trust that.' So I just find myself not buying a lot of things I would have bought before – not even thinking about it" (Focus Group 4, Lines 2494-2499).

Other students changed the type of meat they were consuming, opting for meat alternatives or for grass fed beef, which is lower in saturated fat than beef raised on grains (Grimm et al., 2010). One student replaced the majority of his or her meat products with meatless alternatives, "*I don't buy meat at all anymore except for sandwich meat. I buy a lot of Morningstar products now, like fake chicken"* (Focus Group 2, Lines 1448-1450). Another student only eats grass-fed beef after taking the class, "*I think the biggest thing that I have done is switch completely over to grass-fed so I think it was like since February so I have not bought anything that has not been grass-fed or humanely raised*" (Focus Group 3, Lines 1830-1832). Another student stated he or she would only eat meat from certain stores that carry grass-fed meat "*For me, I basically changed the way I eat meat. But that other night we were having a cook-out at my boyfriend's house and I had some meat from Trader Joes in his fridge because we had had a cookout before. I had some good meat there from before and it wasn't there, so I wanted to know what happened to it. He was like well you can have whatever they're having I was like no, that's okay I'll just come later and bring my own thing. And he was actually really nice and went to Earth Fare and got me some meat*," (Focus Group 4, Lines 2933-2939); and "*But you know also staying away from a lot of the processed meats, I'm not really a big hot dog fan anyway. So that wasn't a problem but I love bacon and sausage, but really trying to limit myself only eating one meat a day*" (Focus Group 2, Lines 1398-1401).

One student, who was a vegetarian before the class began decided she could try meat if it was raised in humane and sustainable ways, "*Before this class I did know a*

good deal about the meat industry and food industry and just something that is a passion of mine. I decided not to eat meat or dairy because of it, but actually after this class I realized that you can find ways to have stuff in moderation and increase your diet, instead of shutting things out completely because there are so many options we were exposed to through the guest speakers; the farm and all the different farmers. So I've actually become more open to trying really well-raised and humanely raised meat and dairy." (Focus Group 3, Lines 1749-1757).

Two students quit eating meat entirely. At the beginning of the intervention, four participants considered themselves vegetarians. At the end of the intervention, six participants considered themselves vegetarians. During the focus groups, multiple students stated that they were becoming vegetarian as a result of the class "*My habits have changed a lot. I was thinking about going vegetarian at the beginning of the semester anyway, but then this class completely convinced me to.*" (Focus group 2, Lines 1413-1415). Two other students stated they only wanted to eat meat if they were aware of how it was produced, "*And like situational vegetarian is what I'd like to become, that is what I want to become. Based on how we treat animals and how people eat animals at the moment I would not wanna be a part of it. So based on the situation I would be a vegetarian*" (Focus Group 1, Lines 621-624). "*I've made some changes. If I don't support the way that workers are being treated by meat packing, and then I'm a vegetarian*", (Focus Group 2, Lines 1310-1311). Overall, meat seemed to be a dominant theme during the focus groups.

The frequency of eating high-fat meat among control participants on the pretest was 5.79 (*SD* = 8.438), and frequency of eating high fat meats on the posttest was 4.34 (*SD* = 9.159). There was a statistically significant decrease of 1.46 in high fat meat intake among control participants ($t(149) = 3.305$, $p = .001$).

A repeated-measures ANOVA was calculated comparing the pre-post responses of high fat meat intake with participants in each treatment group. A statistically significant effect was found *(F*(1,175) = 10.995, *p* = .001) when controlling for autonomy. The intervention group and control group were significantly different from pre-test to post-test for high fat meat intake. Figure 11 details the change in pre-test to post-test for the intervention group and the control group. The differences were statistically significant, and there was a significant decrease in high fat meat intake among intervention and control participants.

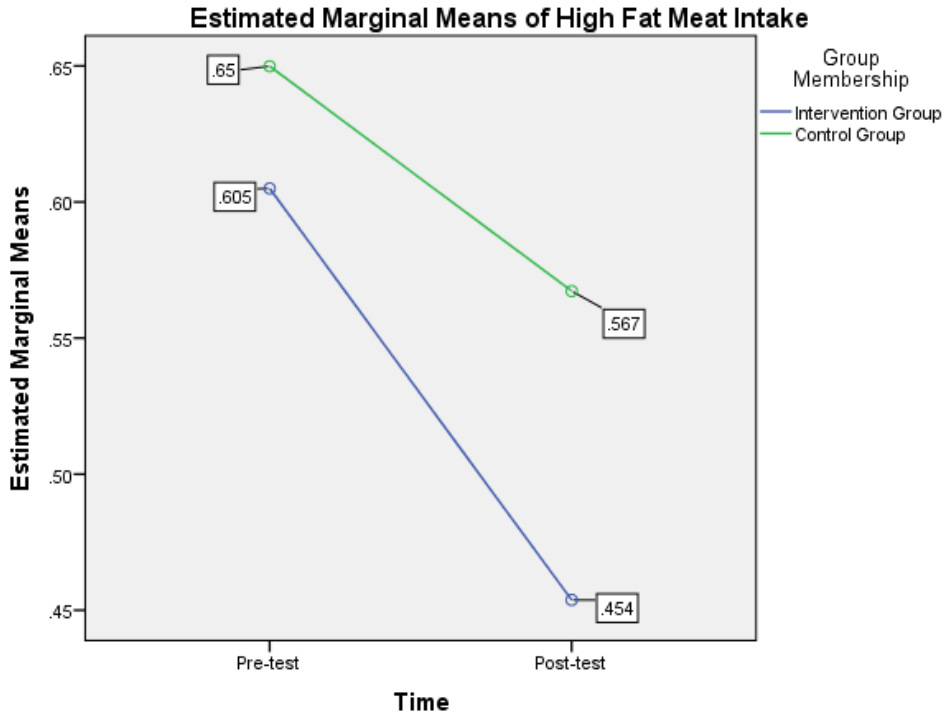

Figure 11: Group differences pre-test to post-test in high fat meat intake

High Fat Dairy

The frequency of consuming high fat dairy among intervention participants on the pretest was 8.14 (*SD* = 5.596), and frequency of eating high fat dairy on the posttest was 7.07 (*SD* = 5.861). A non-significant decrease of 1.07 from pretest to posttest was found (*t*(27) = 1.497, *p* = .146).

When discussing dairy products, students stated either they switched from conventionally produced milk to organic milk, or they switched to non-dairy milk alternatives. Switching to organic milk does not necessary equate reducing fat consumption, however switching from dairy products to soy or almond based equivalents does reduce fat intake. The students that switched to non-dairy alternatives stated the following: "*Well I'm primarily soy based milk*" (Focus group 1, Line 234); *"I only buy soy milk now*" (Focus group 4, Line 3070); "*And I don't drink regular milk, I just drink soy milk now which I also eat cheese, but I haven't ventured into soy cheese yet*" (Focus group 4, Lines 3035-3036); "*I'm buying vegan cheese now and I already didn't drink dairy milk*" (Focus Group 2, Lines 1466-1467); and "*I don't even buy milk – I buy soy milk or almond milk or from soy beans"* (Focus Group 1, Lines 173-174).

The frequency of eating high fat dairy among control participants on the pretest was 11.58 (*SD* = 9.098), and frequency of eating high fat dairy on the posttest was 10.11 (*SD* = 8.647). There was a statistically significant decrease of 1.47 in high fat dairy intake among control participants (*t*(145) = 2.375, *p* = .019).

A repeated-measures ANOVA was calculated comparing the pre-post responses of high fat dairy intake with participants in each treatment group. A statistically significant effect was found *(F*(1,172) = 5.427, *p* = .021) when controlling for autonomy. The intervention group and control group were significantly different from pre-test to post-test for high fat dairy intake. Figure 12 details the change in pre-test to post-test for the intervention group and the control group. The two groups were statistically

significantly different, and there was a significant decrease in high fat dairy intake among intervention participants.

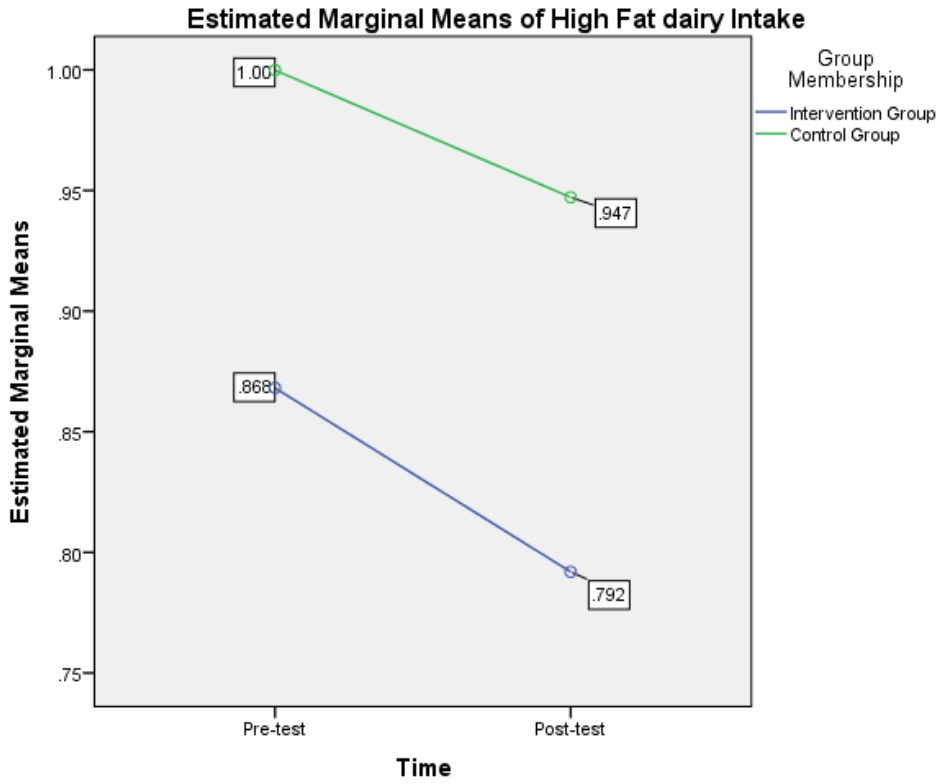

Figure 12: Group differences pre-test to post-test in high fat dairy intake

Processed Food

The frequency of eating processed food among intervention participants on the pretest was 7.85 (*SD* = 11.092), and frequency of eating processed food on the posttest was 5.39 (*SD* = 4.835). A non-significant decrease of 2.46 from pretest to posttest was found ($t(27) = 1.925$, $p = .065$), indicating decreased intake of processed food.

Focus group participants had a lot to say about processed foods, which include fast food. Many participants stated their consumption of processed food decreased,

"*First of all my meat and processed food consumption has greatly decreased but even when I do still go* [eat fast food] *I feel generally bad afterwards and I'm like that wasn't even worth it because I feel gross and now I'm like regretting it*" (Focus group 2, Lines 1323-1326); "*And I don't really eat processed foods and I probably hadn't eaten McDonald's before this class and I don't really eat fast food anymore, well except for Chick-Fil-A*" (Focus group 2, Lines 1353-1355); and "*I do try to eat less of meat, more vegetables, not as much fast food, no processed foods from the grocery store, no snack food, I try to eat more fruit instead*" (Focus group 2, Lines 1387-1389).

Other respondents stated they no longer eat processed food or fast food, "*I've definitely changed my eating habits and the things I will or won't eat. I can't eat that, and they ask 'Why can't you're at that?' Cause I don't know where that's from or because its highly processed*" (Focus group 4, Lines 2726-2729); "*I pick and choose my battles by choosing not to eat at fast food restaurants*" (Focus group 1, Lines 76-77); "*I really don't eat fast food anymore and just try to be more aware of what I'm eating*" (Focus group 1, Lines 104-105); and "*I talk to my family a lot about, I'm adamant we no longer need to eat fast food and that kind of thing and what we're putting into our bodies*" (Focus group 2, Lines 1046-1047).

The frequency of eating processed food among control participants on the pretest was 7.92 (*SD =7.574*), and frequency of eating processed food on the posttest was 6.30 (*SD* = 5.851). There was a statistically significant decrease of 1.62 in processed food intake among control participants ($t(145) = 2.803$, $p = .006$).

A repeated-measures ANOVA was calculated comparing the pre-post responses of processed food intake with participants in each treatment group. A statistically significant effect was found *(*$F(1,172) = 7.404$, $p = .007$) when controlling for autonomy. The intervention group and control group were different from pre-test to post-test for processed food intake. Figure 13 details the change in pre-test to post-test for the

intervention group and the control group. The two groups were statistically significantly different, and there was a significant decrease in processed food intake among intervention and control participants. The intervention participants had a lower intake of processed food at intake, and a greater overall decrease at the end of the intervention.

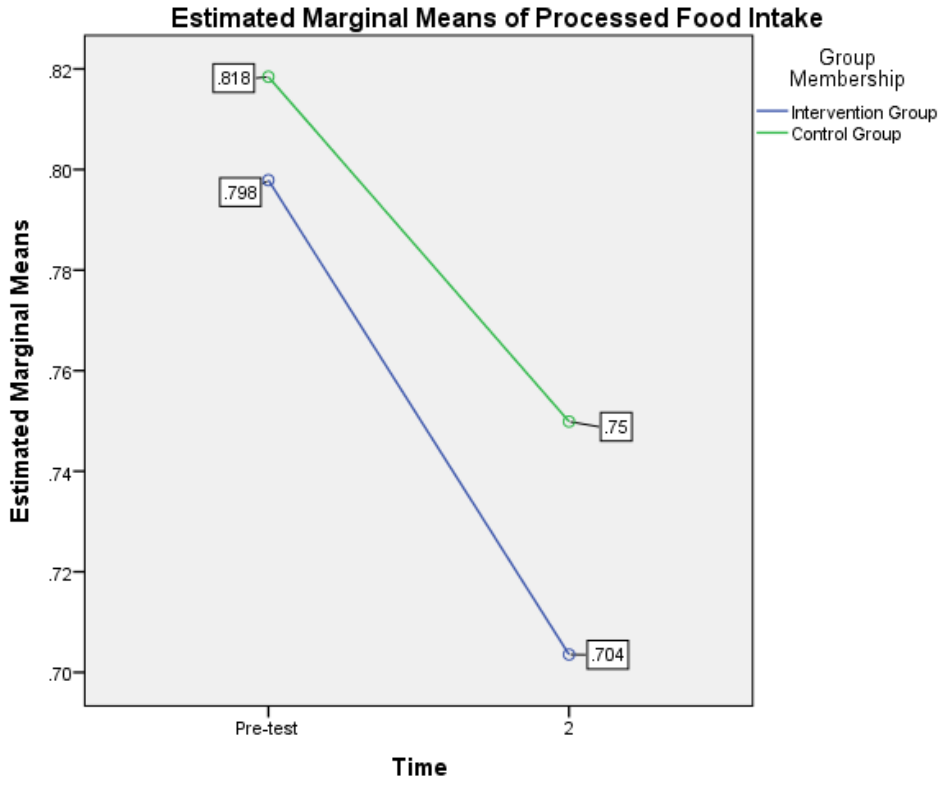

Figure 13: Group differences pre-test to post-test in processed food intake

Sweets

The frequency of eating sweets among intervention participants on the pretest was 6.53 (*SD* = 12.612), and frequency of eating sweets on the posttest was 6.72 (*SD* = 14.630). A non-significant increase of .19 from pretest to posttest was found (*t*(28) = .743, *p* = .464), indicating increased intake of sweets. There was no discussion specifically about sweets during the focus groups. When students discussed processed foods, sweets may have been included in those statements.

The frequency of eating sweets among control participants on the pretest was 5.65 (*SD* = 6.421), and frequency of eating sweets on the posttest was 6.33 (*SD* = 11.014). There was a non-significant increase of .68 in sweets intake among control participants (*t*(156) = -1.105, *p* = .271).

A repeated-measures ANOVA was calculated comparing the pre-post responses of sweets intake with participants in each treatment group. A non-significant effect was found *(F*(1,182) = .057, *p* = .812) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test for sweets intake. Figure 14 details the change in pre-test to post-test for the intervention group and the control group. The two groups were not significantly different, and there was a non-significant increase in sweets intake among intervention and control participants.

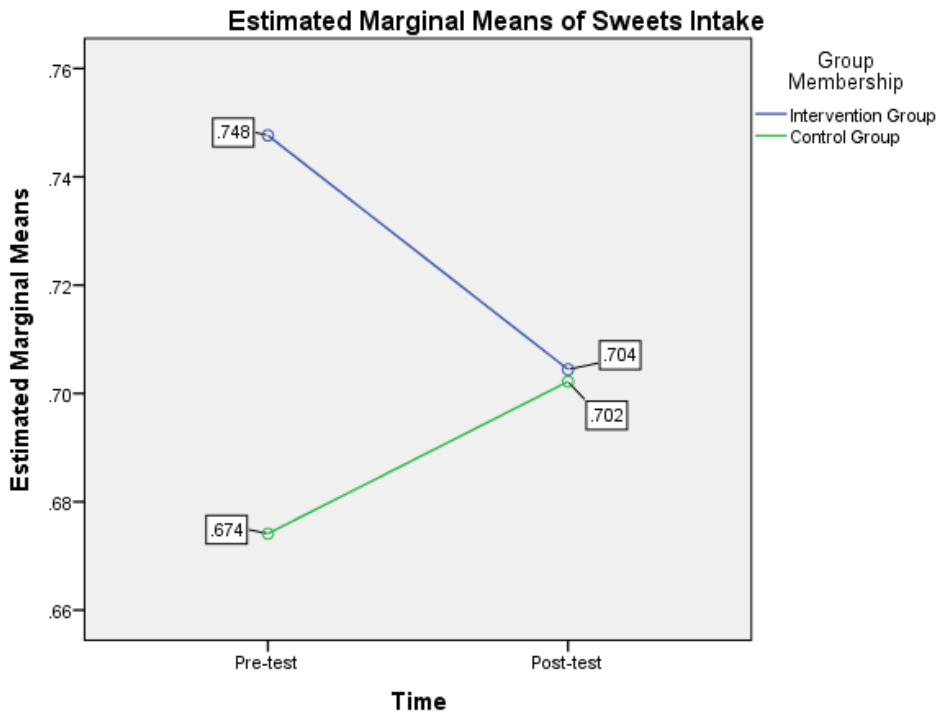

Figure 14: Group differences pre-test to post-test in processed food intake

Healthful Diet Score

A healthful diet score was calculated using baseline median splits. Scores ranged from 0 to 6, with higher score indicating a healthier diet. The raw data were near-normal, therefore all analyses were carried out on the raw data. Repeated measures ANOVA and paired sample *t*-tests were used to calculate difference between groups and change over time. Table 16 presents the raw pre and posttest means and standard deviations score for the healthful diet score for intervention and control participants.

Table 16
Healthful Diet Score (M±SD)

Variable	Intervention Course (n=29)		Control Courses (n=162)	
	Pre	Post	Pre	Post
Healthful Diet Score	3.17±1.167	3.66±1.421*	2.86±1.431	2.78±1.427

*p<0.10, **p<0.05, ***p<0.01.

For intervention participants, the mean score on the pretest was 3.17 (*SD* = 1.167), and on the posttest the mean score was 3.66 (*SD* = 1.421), which was a non-significant increase (*t*(28) = -1.758, *p* = .090). Participants in the control group had a mean score on the pretest of 2.86 (*SD* = 1.431), and a mean score on the posttest of 2.78 (*SD* = 1.427). This was a decrease of .08, which was not statistically significant (*t*(161) = .761, *p* = .448)

A repeated-measures ANOVA was calculated comparing the pre-post responses of certainty to develop routines with participants in each treatment group. A non-significant effect was found *(F*(1,187) = 2.664, *p* = .104) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test for sticking to healthy foods using routines.

4.5 Nutritional Self-efficacy

4. Was the Food, Society, and Public Health curriculum more effective than the control courses in increasing self-efficacy related to eating healthy food?

   Hypothesis 4: Students in the intervention group will report increased self-efficacy in increasing healthy eating than students in the control groups.

The nutritional self-efficacy sum scores were near normal, so they were not transformed. Raw data were used in the nutritional self-efficacy and beliefs analysis. The Stages of Change data were moderately positively and negatively skewed, and the

squared or square root transformations were applied to reduce skew. All analyses were carried out on the transformed data, however raw means and standard deviations are reported. Repeated measures ANOVA and paired sample *t*-tests were used to calculate difference between groups and change over time.

Nutritional Self-Efficacy

The fourth research question evaluates the increased self-efficacy related to eating healthy food. Participants were asked to indicate how certain they overcome barriers related to healthy food consumption. Answers included: 1) *Not at all true*, 2) *Hardly true*, 3) *Moderately true*, and 4) *Exactly true*. Scale scores could range from 5 to 20, with a higher score indicating more certainty they could overcome the barrier. Table 17 presents the raw pre and posttest means and standard deviations score for the self-efficacy related to healthy eating for intervention and control participants.

Table 17
Nutritional Self-efficacy (M±SD)

Variable	Intervention Course (n=29)		Control Courses (n=159)	
	Pre	Post	Pre	Post
Scale Sum score	16.38±2.70	16.90±2.76	15.64±2.68	15.63±2.49

*p<0.10, **p<0.05, ***p<0.01.

Participants were asked to indicate how certain they could overcome barriers related to healthy eating. For intervention participants, the mean sum score on the pretest was 16.38 (*SD* = 2.70), and on the posttest the mean sum score was 16.90 (*SD* = 2.76), which was an increase of .52. These findings were not statistically significant (*t*(28) = -.876, *p* = .389). Participants in the control group had a mean score on the pretest of 15.64 (*SD* = 2.68), and a mean score on the posttest of 15.63 (*SD* = 2.49).

This was a decrease of .01, which was not statistically significant ($t(159) = .064$, $p = .949$).

A repeated-measures ANOVA was calculated comparing the pre-post responses in each treatment group. A non-significant effect was found ($F(1,185) = 1.608$, $p = .206$) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test for Nutritional Self-efficacy. Figure 15 details the change in pre-test to post-test for the intervention group and the control group. The two groups were not significantly different.

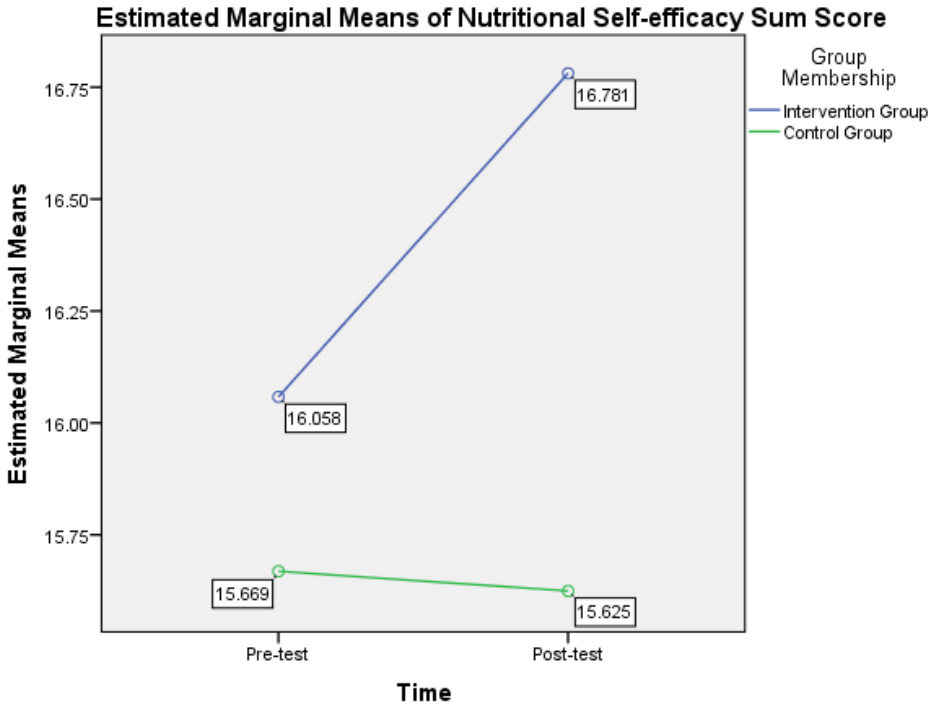

Figure 15: Group differences pre-test to post-test in Nutritional Self-Efficacy

Focus group findings reveal that participants had increased self-efficacy related to looking for resources local to them, asking servers about food quality and origins in restaurants, and changing food habits. When asked if they were aware of the accessibility of community supported agriculture organizations (CSA) in their hometown, everyone in Focus Group 4 stated they had looked one up, "*Yea, I looked that up. (Agreement from group)*" (Focus Group 4, Line 2622). One student spoke of how his or her confidence increased based on the knowledge gained from class, "*Before the class, I had an idea what was good for me and what was good for the environment and I went along with my general knowledge; organic is typically better quality and what's in season is typically better quality but I never knew exactly why. So knowing why really enforced my habits and made me want to go steps further with the habits I was leaning towards*" (Focus Group 4, Lines 2469-2474). Another student stated that the knowledge gained in class increased his or her ability to maintain a vegetarian lifestyle "*I went vegan for training last year and when the instructors asked us to go vegan they didn't give us a reason why just basically that it would make the experience more pure. Going vegan was really hard for me last year, because I didn't have a lot of background information. I looked up a little bit of stuff. And really I just focused on not eating a lot of stuff, there wasn't a lot of depth in my thought process. And now I had to go vegetarian for another class, and it was ten times easier than what I remembered. It wasn't hard to go to the store and struggle with the fact that I wanted to eat meat. I didn't have a desire for it and it was a lot easier cause the way I thought about it made it easier*" (Focus Group 4, Lines 2477-2486).

4.6 Readiness to Change in Healthy Eating

5. Was the Food, Society, and Public Health curriculum more effective than the control courses in increasing participants' readiness to change in healthy eating than students in the control groups?

   Hypothesis 5: Students in the intervention group will report an increase in readiness to change in healthy eating than students in the control groups.

The fifth research question evaluates readiness to change related to eating fruits and vegetables, low-fat dairy, low-fat meat, and processed food. The Stages of Change data were moderately positively and negatively skewed, and the squared or square root transformations were applied to reduce skew. All analyses were carried out on the transformed data, however raw means and standard deviations are reported. Repeated measures ANOVA and paired sample *t*-tests were used to calculate difference between groups and change over time. Table 18 presents the raw pre and posttest means and standard deviations scores for the readiness to change variables related to healthy eating for intervention and control participants.

Table 18
Readiness to Change variables (M±SD)

Variable	Intervention Course (n=29)		Control Courses (n=162)	
	Pre	Post	Pre	Post
Fruits and Vegetables	3.14±1.274	3.00±1.309	2.50±1.269	2.47±1.385
Low-fat Dairy	5.07±1.689	4.48±1.214	4.82±1.686	4.32±1.515***
Low-fat Meat	4.72±1.811	4.86±1.684	4.57±1.795	4.80±1.729*
Processed Food	2.62±1.235	2.73±1.589	3.10±1.461	3.04±1.457

*p<0.10, **p<0.05, ***p<0.01.

Readiness to Change – Fruits and Vegetables

Participants were asked to choose the statement that best describes their consumption of fruits and vegetables. Scores ranged from 1 – 5, and a higher score indicates a higher readiness to change. For intervention participants, the mean score on the pretest was 3.14 (*SD* = 1.274), and on the posttest the mean score was 3.00 (*SD* = 1.309), which was a decrease in of .14 in mean scores. These findings were not statistically significant ($t(28) = .436$, $p = .667$). Participants in the control group had a mean score on the pretest of 2.50 (*SD* = 1.269), and a mean score on the posttest of 2.47 (*SD* = 1.385), which was a decrease of .03. This decrease was not statistically significant ($t(156) = .236$, $p = .814$).

There was an increase in the percent of participants who moved from a pre-action stage (precontemplation, contemplation, preparation) to an action stage (action, maintenance) from pre-test to post-test. On the pre-test, 24.1% of the intervention participants were in an action stage. On the post-test, 31.0% were in an action stage, which is an increase of 6.9%. Among control participants, 14.2% were in an action stage at the beginning of the intervention, and 18.2% were in an action stage at the end of the intervention, which was an increase of 4%.

A repeated-measures ANOVA was calculated comparing the pre-post responses of readiness to change for eating fruits and vegetables. A non-significant effect was found ($F(1,182) = .187$, $p = .666$) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test for readiness to change in eating fruits and vegetables. Figure 16 details the change in pre-test to post-test for the intervention group and the control group.

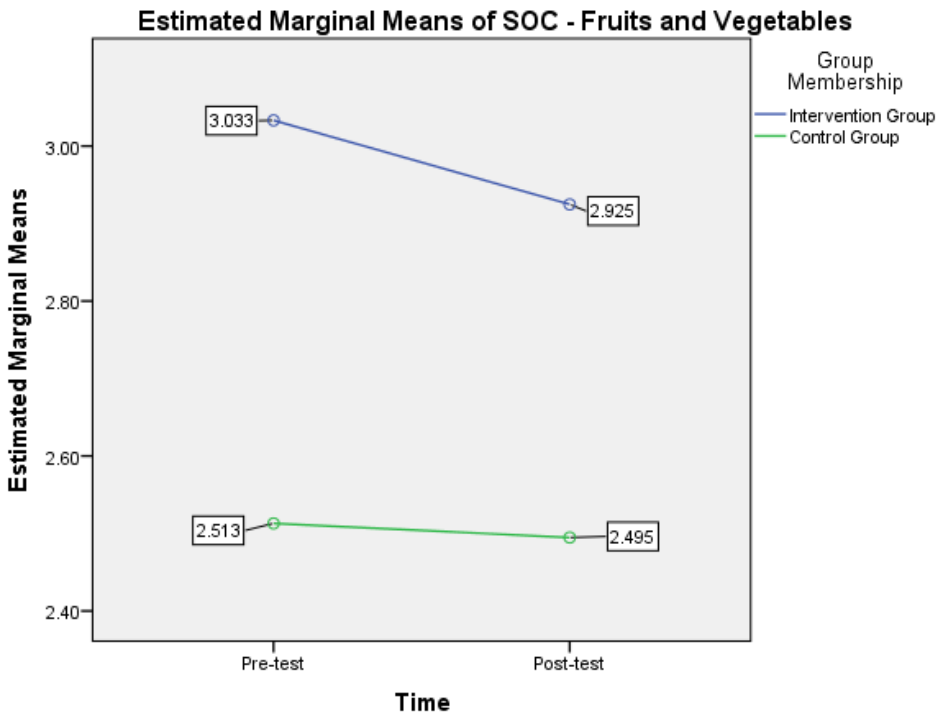

Figure 16: Group differences pre-test to post-test in SOC – Fruits and Vegetables

Readiness to Change – Low-Fat Dairy

Participants were asked to choose the statement that best describes their consumption of low-fat dairy products. There were two intervention participants (6.9%) and 20 control participants (12.3%) that did not consume dairy products. Scores ranged from 1 – 6, and a higher score indicates a higher readiness to change. For intervention participants, the mean score on the pretest was 5.07 (*SD* = 1.689), and on the posttest the mean score was 4.48 (*SD* = 1.214). This was a decrease in of .59 in mean scores, which was not statistically significant ($t(28) = 1.471$, $p = .152$). Participants in the control group had a mean score on the pretest of 4.82 (*SD* = 1.686), and a mean score on the posttest of 4.32 (*SD* = 1.515), which was a decrease of .50. This decrease was statistically significant ($t(158) = 3.276$, $p = .001$).

There was a decrease in the percent of intervention participants that moved from a pre-action stage to an action stage from pre-test to post-test. On the pre-test, 75.9% of the intervention participants were in an action stage. On the post-test, 69% of these participants were in an action stage, which was a decrease of 6.9%. Among control participants, 68.5% were in an action stage at the beginning of the intervention, and 72.2% were in an action stage at the end, which was an increase of 3.7%.

A repeated-measures ANOVA was calculated comparing the pre-post responses of readiness to change for low-fat dairy. A statistically significant effect was found *(F*(1,184) = 7.855, *p* = .006) when controlling for autonomy. The intervention group and control group were significantly different from pre-test to post-test for readiness to change for low-fat dairy intake. Figure 17 details the change in pre-test to post-test for the intervention group and the control group.

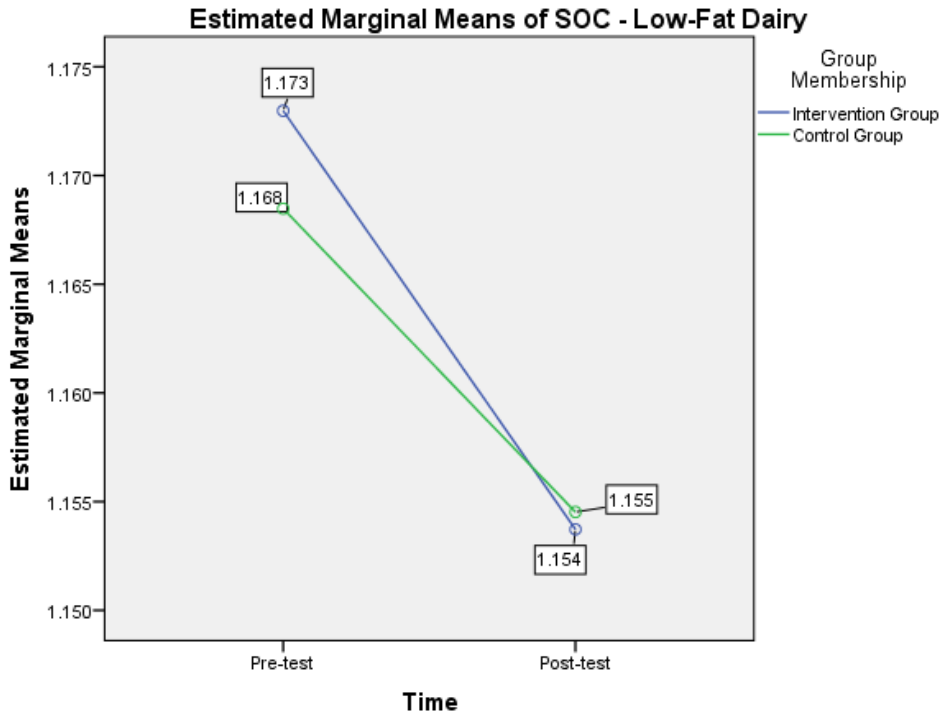

Figure 17: Group differences pre-test to post-test in SOC – Low-Fat Dairy

Readiness to Change – Low-Fat Meat

Participants were asked to choose the statement that best describes their consumption of low-fat meat products. . There were three intervention participants (10.3%) and 11 control participants (6.8%) that did not consume meat. Scores ranged from 1 – 6, and a higher score indicates a higher readiness to change. For intervention participants, the mean score on the pretest was 4.72 (*SD* = 1.811), and on the posttest the mean score was 4.86 (*SD* = 1.684). This was an increase of .14 in mean scores, which was not statistically significant ($t(28) = -.423$, $p = .676$). Participants in the control group had a mean score on the pretest of 4.57 (*SD* = 1.795), and a mean score on the posttest of 4.80 (*SD* = 1.729), which was an increase of .22. This increase was not statistically significant ($t(160) = -1.841$, $p = .067$).

There was an increase in the percentage of intervention participants that moved from a pre-action stage to an action stage from pre-test to post-test. On the pre-test, 68.9% of the intervention participants were in an action stage. On the post-test, 82.2% of the intervention participants were in an action stage, which was an increase of 13.9%. Among control participants, 64.6% were in an action stage at the beginning of the intervention, and 69.7% were in an action stage at the end of the intervention, which was an increase of 5.1%.

A repeated-measures ANOVA was calculated comparing the pre-post responses for readiness to change for low-fat meat intake. A non-significant effect was found ($F(1,186) = .893$, $p = .346$) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test for readiness to change for low-fat meat intake. Figure 18 details the change in pre-test to post-test for the intervention group and the control group.

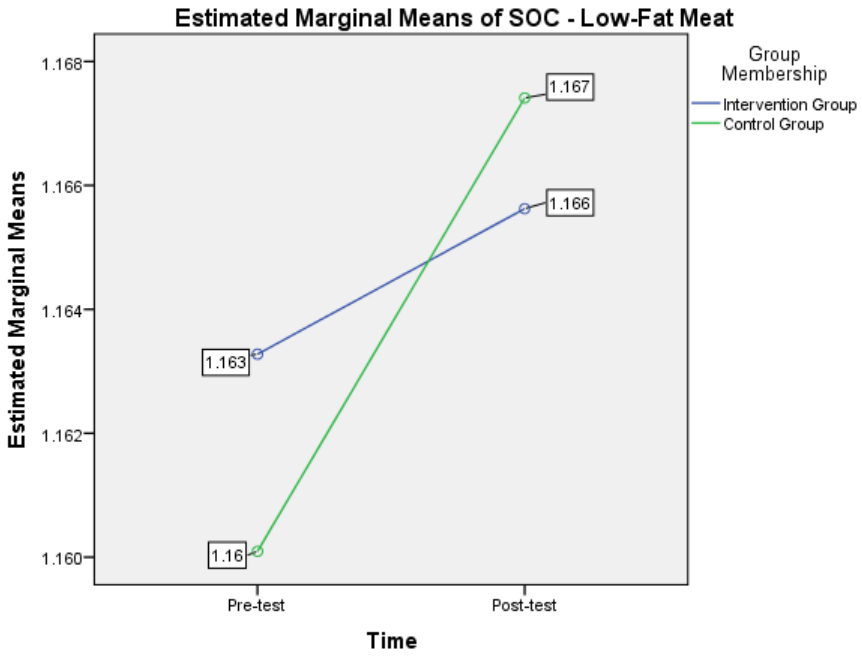

Figure 18: Group differences pre-test to post-test in SOC – Low-Fat Meat

Readiness to Change – Processed Food

Participants were asked to choose the statement that best describes their consumption of processed food. Scores ranged from 1 – 6, and a higher score indicates a higher readiness to change. For intervention participants, the mean pretest score was 2.62 (*SD* = 1.235), and on the mean posttest score was 2.73 (*SD* = 1.589). This was an increase in of .12, which was not statistically significant ($t(25) = -.094$, $p = .926$). Participants in the control group had a mean score on the pretest of 3.10 (*SD* = 1.461), and a mean score on the posttest of 3.04 (*SD* = 1.457). This was a decrease of .06, which was statistically significant ($t(144) = .454$, $p = .650$).

There was a decrease in the percentage of intervention participants that moved from a pre-action stage to an action stage from pre-test to post-test. On the pre-test, 10.3% of the intervention participants were in an action stage, and 6.9% did not eat

processed food. On the post-test, 17.2% of the intervention participants were in an action stage, and 20.7% no longer ate processed food. This was an increase of 6.9% of participants that moved to an action stage, and 10.4% that did not eat processed food. Among control participants, 20.4% were in an action stage, and 6.8% did not eat processed food at the beginning of the intervention. Post-test results show that 16.4% were in an action stage, and 8.0% did not eat processed food at the end of the intervention.

A repeated-measures ANOVA was calculated comparing the pre-post responses of readiness to change for processed food. A non-significant effect was found *(F*(1,168) = .161, *p* = .688) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test in readiness to change for processed food. Figure 19 details the change in pre-test to post-test for the intervention group and the control group.

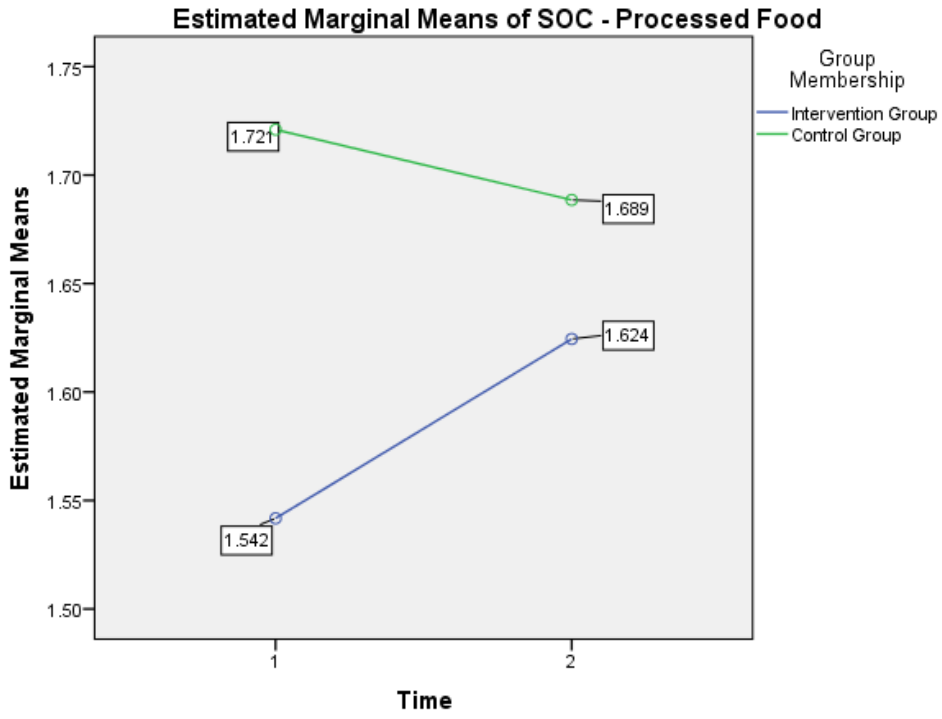

Figure 19: Group differences pre-test to post-test in SOC – Processed Food

Focus Group Findings

During the focus groups, intervention participants made statements that indicated an increase in readiness to change. Multiple students stated that their awareness had been increased, indicating a shift out of the precontemplation stage into a higher stage. One student stated, "*Before this class I really didn't know, I really didn't know, I had no idea about any of it really. I was eating healthy just because that is what I was told to do. Now after learning all this stuff about the different places, I am definitely more aware of everything. Basically mine just went from knowing nothing to learning about all this stuff and I'm still trying to take it all in and do my research*" (Focus Group 2, Lines 814-818). Other students stated, "*Yea, well I think my awareness has definitely expanded, especially with CSA's and organic cause at first I thought organic was more of a hoax and a way to just get people to buy a more expensive product. So I think in that respect it has definitely expanded and I have a new appreciation for*" (Focus Group 3, Lines 1717-1720); "*Well, I didn't even know we had a farmers market until you showed us that. I mean I've been to one but it's like near where I live back home. I didn't even know that we had one locally, so that was kinda cool. And just being more aware because I've heard of Trader Joes and I've heard of Earth Fare and stuff but I didn't know exactly what it was because I had never been*" (Focus Group 1, Lines 25-29). Each of these statements indicate an increased awareness, however they do not indicate a change in behavior.

Other students explicitly stated how the shift in awareness prompted a change in behavior, indicating movement into the preparation or action stages. One student stated, "*My awareness has definitely gone up a lot. I didn't know about anything(before). I would just go to the grocery store and just by whatever. And the same with my parents cause I've gotten them to change and they now only buy organic and grass fed stuff. I'm starting to try to go to more of the Fresh Market stores. So my awareness has gone up.*"

(Focus Group 3, Lines 1733-1737). Another student discussed how they changed the type of meat they eat, "*I found I knew a little bit about this stuff before this class but honestly I didn't care at all but after taking this class it was like wow, I was never really trusting of these organizations. Now I know how bad it is and I can take that information and give it to other people so they can get more interested, and they're looking up stuff on their own now and I'm gonna continue to look stuff up and try to do better myself. I've started eating less meat, I haven't started buying grass fed yet but we'll get there*" (Focus Group 4, lines 2523-2529). Another student discussed their interest in joining a CSA, "*I knew of all these places but I didn't know how good they were. Now I pay more attention to the organic section in Kroger. I haven't found a CSA yet but I think that would be a good idea*" (Focus Group 1, Lines 47-49). Overall, awareness was increased and in some cases, student's behavior changed as a result.

4.7 Beliefs in the Importance of Healthy Behaviors

6. Was the Food, Society, and Public Health curriculum more effective than the control courses in increasing participants' beliefs about the importance of healthy behaviors?
   Hypothesis 6: Students in the intervention group will report strengthened beliefs regarding healthy behaviors than students in the control groups.

The sixth research question evaluates participant beliefs in the importance of healthy behaviors, including eating a healthful diet, staying physically fit, environmental sustainability, animal rights, social justice, and ethics and morality. Participants were asked to judge how important each of these beliefs were compared to other things in their life. Answers included: 1) *Not at all important compared to other things in your life*, 2) *Less important; 3) About as important; 4) More important; 5) Just about the most important; and 6) The very most important.* Scores ranged from 1 – 6, and a higher score indicates a higher level of importance.

The data varied in skew, and were transformed to increase normality. All analyses were performed with transformed data when appropriate, however raw means and standard deviation scores are reported. Table 19 presents the raw pre and posttest means and standard deviations scores for the beliefs variables.

Table 19
Values variables (M±SD)

Variable	Intervention Course (n=29)		Control Courses (n=162)	
	Pre	Post	Pre	Post
Healthful diet	4.03±1.017	4.31±1.004	3.71±0.984	3.67±0.906
Staying physically fit	4.21±1.048	4.17±1.002	3.99±1.034	3.93±0.949
Environmental sustainability	3.14±1.060	3.31±1.312	2.96±1.030	2.88±0.832
Animal rights	2.55±1.021	3.31±1.137***	2.77±1.100	2.78±0.971
Social justice	3.79±1.013	3.90±1.081	3.58±1.136	3.62±0.951
Ethics and morality	4.17±1.014	4.38±1.049	4.34±1.091	4.29±1.002

*p<0.10, **p<0.05, ***p<0.01.

Beliefs – Importance of Eating a Healthful Diet

Participants were asked to choose the statement that rates the importance of eating a healthful diet. For intervention participants, the mean pretest score was 4.03 (*SD* = 1.017), and the mean posttest score was 4.31 (*SD* = 1.004). This was an increase in of .28, which was not statistically significant (*t*(28) = -1.684, *p* = 1.03). Control group participants had a mean score on the pretest of 3.71 (*SD* = .984), and a mean score on the posttest of 3.68 (*SD* = .906). This was a decrease of .04, which was not statistically significant (*t*(160) = .593, *p* = .554).

A repeated-measures ANOVA was calculated comparing the pre-post responses of beliefs of the importance of eating a healthful diet. A non-significant effect was found *(F*(1,186) = 2.332, *p* = .128) when controlling for autonomy. The intervention group and

control group were not different from pre-test to post-test in beliefs of the importance of eating a healthful diet. Figure 20 details the change in pre-test to post-test for the intervention group and the control group.

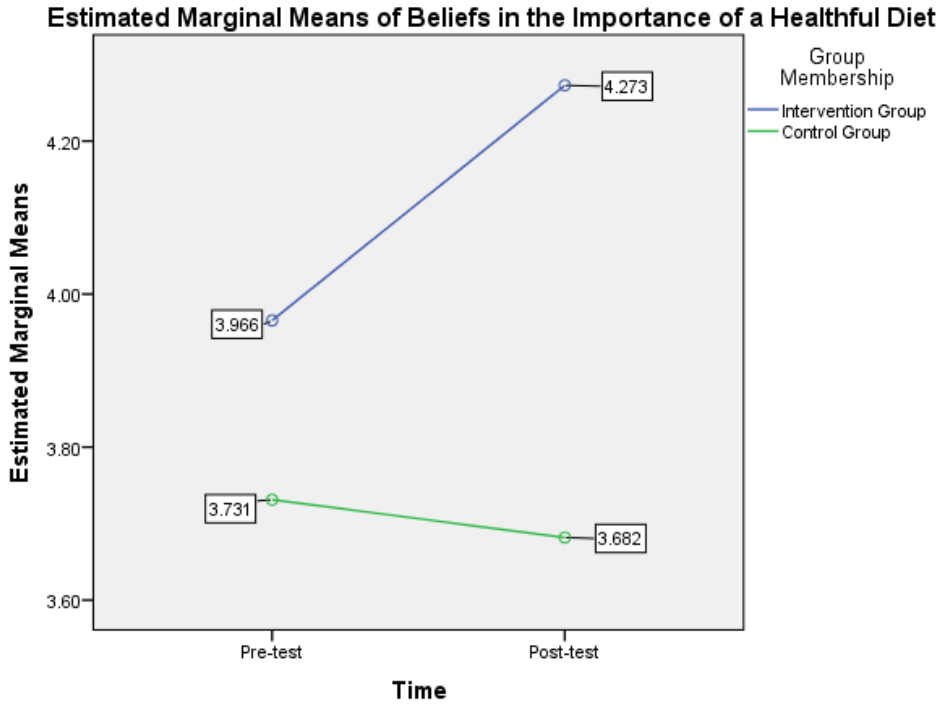

Figure 20: Group differences pre-test to post-test in Beliefs – Healthful Diet

Beliefs – Importance of Staying Physically Fit

Participants were asked to choose the statement that rates the importance of staying physically fit. For intervention participants, the mean pretest score was 4.21 (*SD* = 1.048), and the mean posttest score was 4.17 (*SD* = 1.002). This was a decrease in of .04, which was not statistically significant ($t(28) = .177$, $p = .861$). Participants in the control group had a mean score on the pretest of 3.99 (*SD* = 1.033), and a mean score

on the posttest of 3.93 (*SD* = .949). This was a decrease of .06, which was not statistically significant (*t*(161) = 1.032, *p* = .304).

A repeated-measures ANOVA was calculated comparing the pre-post responses of beliefs in the importance of staying physically fit. A non-significant effect was found (*F*(1,187) = .099, *p* = .753) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test in beliefs in the importance of staying physically fit. Figure 21 details the change in pre-test to post-test for the intervention group and the control group.

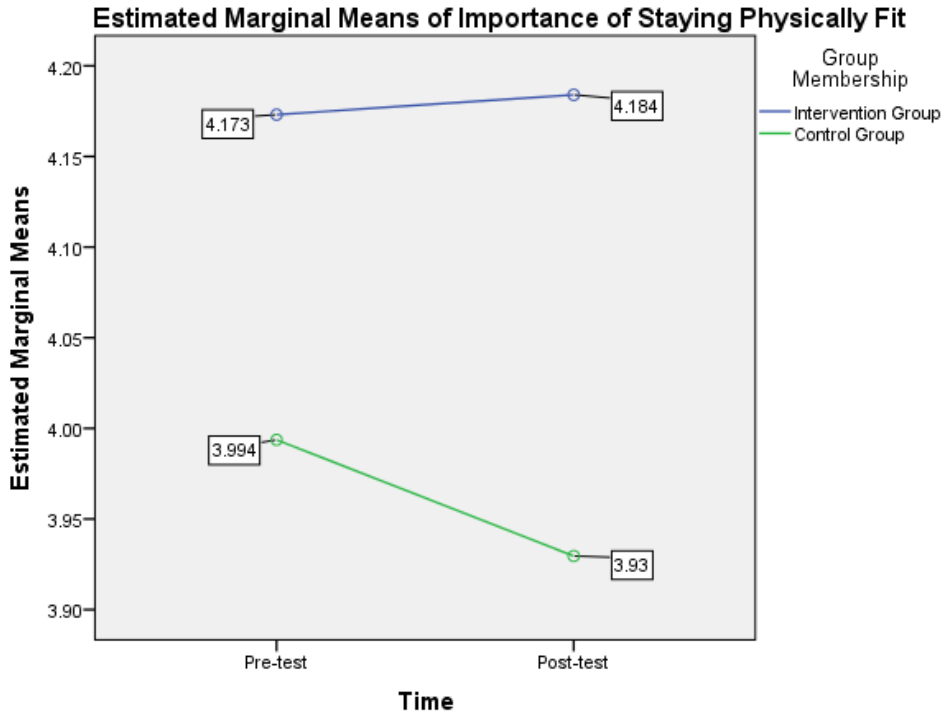

Figure 21: Group differences pre-test to post-test in Beliefs – Staying Fit

Beliefs – Importance of Environmental Sustainability

For intervention participants, the mean pretest score was 3.14 (*SD* = 1.060), and the mean posttest score was 3.31 (*SD* = 1.312). This was an increase in of .17, which was not statistically significant (*t*(28) = -.895, *p* = .378). Participants in the control group had a mean score on the pretest of 2.96 (*SD* = 1.030), and a mean score on the posttest of 2.88 (*SD* = .832). This was a decrease of .08, which was not statistically significant (*t*(161) = 1.111, *p* = .268).

A repeated-measures ANOVA was calculated comparing the pre-post responses of the importance of environmental sustainability. A non-significant effect was found *(F*(1,187) = .154, *p* = .695) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test in beliefs of the importance of environmental sustainability. Figure 22 details the change in pre-test to post-test for the intervention group and the control group.

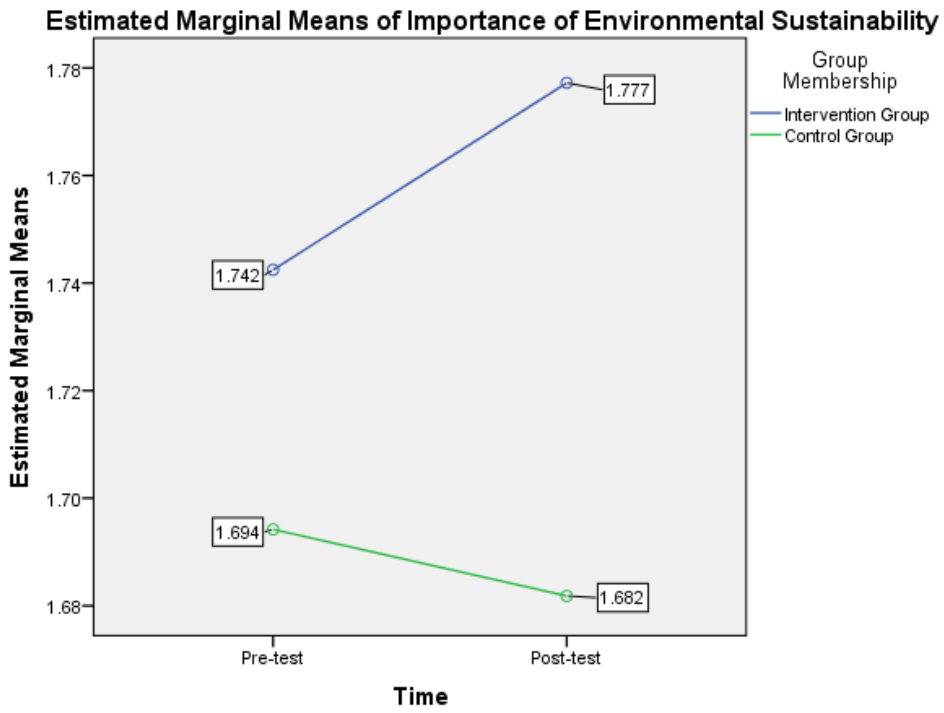

Figure 22: Group differences pre-test to post-test in Beliefs – Environmental Sustainability

Beliefs – Importance of Animal Rights

Participants were asked to choose the statement that rates the importance of animal rights. For intervention participants, the mean pretest score was 2.55 (*SD* = 1.021), and the mean posttest score was 3.31 (*SD* = 1.137). This was an increase of .76, which was statistically significant ($t(28) = -4.504$, $p < .000$). Participants in the control group had a mean score on the pretest of 2.77 (*SD* = 1.100), and a mean score on the posttest of 2.78 (*SD* = .971). This was a decrease of .01, which was not statistically significant ($t(159) = -.452$, $p = .652$).

A repeated-measures ANOVA was calculated comparing the pre-post responses in beliefs of the importance of animal rights. A statistically significant effect was found

(F(1,185) = 21.883, *p* < .000) when controlling for autonomy. The intervention group and control group were different from pre-test to post-test in beliefs of the importance of animal rights. Figure 23 details the change in pre-test to post-test for the intervention group and the control group.

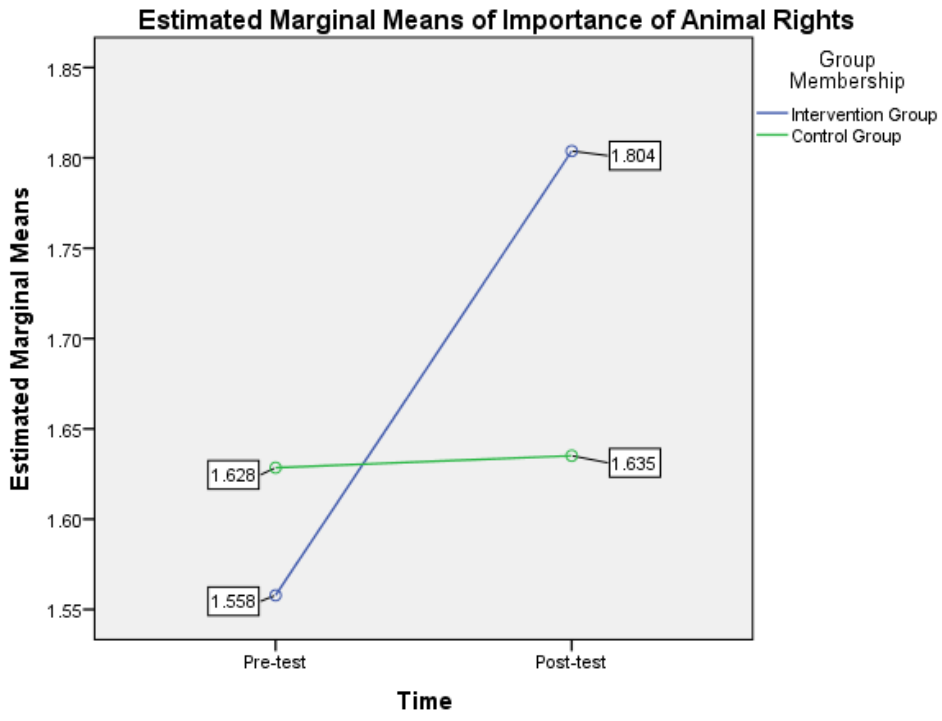

Figure 23: Group differences pre-test to post-test in Beliefs – Animal Rights

Beliefs – Importance of Social Justice

Participants were asked to choose the statement that rates the importance of social justice. For intervention participants, the mean pretest score was 3.79 (*SD* = 1.013), and the mean posttest score was 3.89 (*SD* = 1.081). This was an increase of .10, which was not statistically significant (*t*(28) = -.619, *p* = .541). Participants in the

control group had a mean score on the pretest of 3.58 (*SD* = 1.136), and a mean score on the posttest of 3.62 (*SD* = .951). This was an increase of .04, which was not statistically significant (*t*(159) = -.519, *p* = .604).

A repeated-measures ANOVA was calculated comparing the pre-post responses of beliefs of the importance of social justice. A non-significant effect was found *(F*(1,185) = .112, *p* = .739) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test in beliefs of the importance of social justice. Figure 24 details the change in pre-test to post-test for both groups.

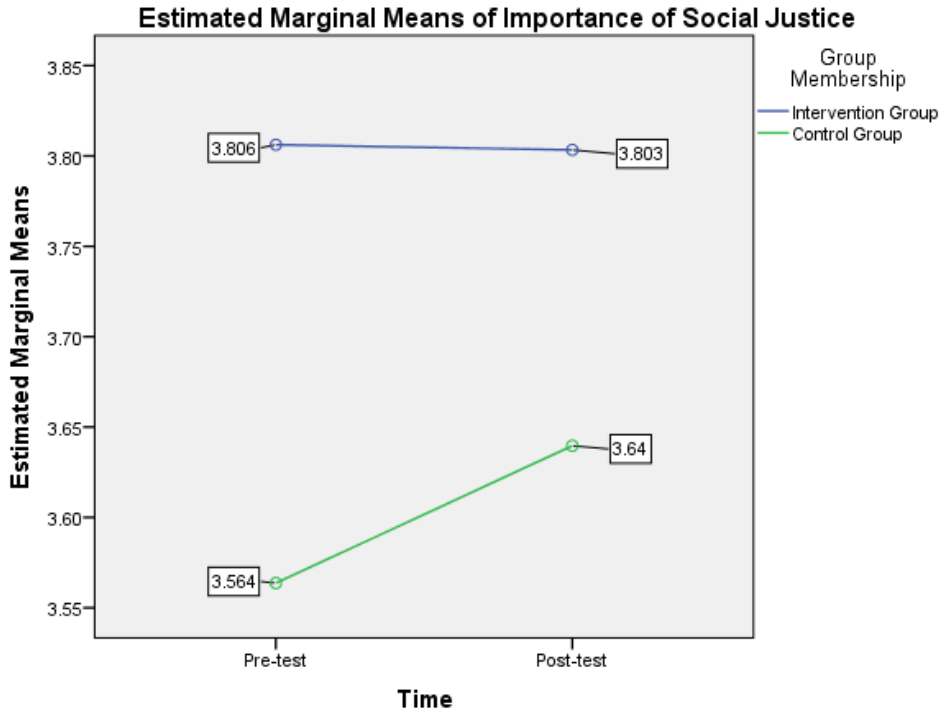

Figure 24: Group differences pre-test to post-test in Beliefs – Social Justice

Beliefs – Importance of Ethics and Morality

Participants were asked to choose the statement that rates the importance of ethics and morality. For intervention participants, the mean pretest score was 4.17 (*SD* = 1.104), and the mean posttest score was 4.38 (*SD* = 1.049). This was an increase of .28, which was not statistically significant ($t(28) = -1.294$, $p = .206$). Participants in the control group had a mean score on the pretest of 4.34 (*SD* = 1.091), and a mean score on the posttest of 4.29 (*SD* = 1.003). This was a decrease of .06, which was not statistically significant ($t(160) = .753$, $p = .453$).

A repeated-measures ANOVA was calculated comparing the pre-post responses of beliefs of the importance of ethics and morality. A non-significant effect was found ($F(1,186) = 1.088$, $p = .298$) when controlling for autonomy. The intervention group and control group were not different from pre-test to post-test in beliefs of the importance of ethics and morality. Figure 25 details the change in pre-test to post-test for the intervention group and the control group.

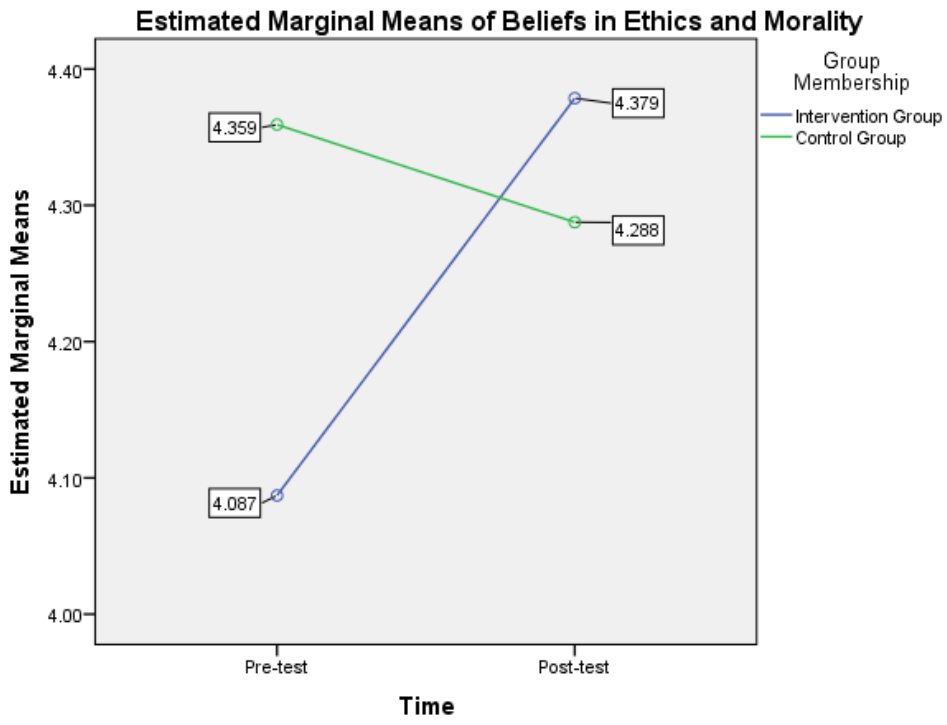

Figure 25: Group differences pre-test to post-test in Beliefs – Ethics and Morality

Focus Group Findings

During the focus groups, intervention participants made statements that indicated the impact the class had on their beliefs related to healthy behaviors. Multiple students commented on issues discussed in class related to animal rights, social justice, ethics and morality, and environmental sustainability. When discussing environmental sustainability, students stated, "*I care about the environment a lot so it's really important for me to eat things that I know are sustainability grown*" (Focus Group 3, Lines 1967-1968), and "*I feel like before the class, I had an idea what was good for me and what was good for the environment and I went along with my general knowledge like organic is typically better quality and what's in season is typically better quality but I never knew exactly why. So knowing why really enforced my habits and made me go want to go*

steps further with the habits I was leaning towards" (Focus Group 4, Lines 2469-2474), and "*Definitely more aware of what to look for to find the type of food that is better for us and the environment*" (Focus Group 1, Lines 21-22). These statements indicate that learning the environmental impact of industrialized farming prompted students to reconsider and change their eating behaviors.

When discussing animal rights, students stated, "*I don't agree with animal cruelty at all so I guess my changing from that would be making a conscious effort to try to pick the things that are free-range, and healthier. If I can get slaughtered stuff from local people that I know that have raised the cows or killed the deer, whatever it may be, I'm more apt to do that*" (Focus Group 1, Lines 531-535), and "*All I picture is those little pigs. I guess the animal thing really gets me, honestly, it's those animals. I keep reliving that video over and over*" (Focus Group 1, Lines 544-546), and "*What I talk about most is probably the treatment of animals cause that horrifies me and slaughterhouses horrify me*" (Focus Group 3, Lines 1844-1845), and "*I'd rather not eat meat at all than see the treatment of animals and everything like that that we talked about, the different nastiness of the organizations*" (Focus Group 4, Lines 2502-2503). Students chose to abstain from meat, to select healthier meat options that were grass-fed and sustainably raised, and they chose to discuss what they learned with others.

When discussing social justice issues, students were impacted by what they learned about the treatment of worker and the ethics of huge corporations. One student stated they'd change what they eat based on the way corporations treat their workers "*That's one thing that I also shared with people when I would talk about it – not just the health of the food itself but just the treatment of the people that work in the factories or work in the fields. A little along the lines of how they treat animals and what not but at the end of the day animals are animals and humans are humans and I just think that the way that the humans, and the people who work in these places, especially the*

slaughterhouses and stuff its basically just modern day slavery. So that was a huge impact and if anything else would be one of the number one reasons why I would change what I eat" (Focus Group 1, Lines 498-506). Another student stated he or she would choose to eat sustainably raised meat because the impact of industrialized meat on human health is a human rights issue, "*I think the reason I would chose not to eat meat wouldn't be from an animal rights perspective but for me it's like this is how the meat is being raised and this is how it's affecting our health. Guess it was the Forks Over Knives, it's like they've got all these hormones and their being slaughtered in such an unclean way and look how it's affecting human health. That's the biggest reason why it makes me upset, these creatures were put here for our use and we're mistreating them. So treat them better, so we are not being hurt. It's more a human rights, let's protect the animals for us, our sake*" (Focus Group 1, Lines 583-590).

Many student's discussed lack of ethics involved in industrialized food production, "*It's kinda sad that some people are just greedy and wanna make that extra dollar that much more that their willing to compromise on what should be basic human decency towards one another*" (Focus Group 4, Lines 2908-2910), and "*I want to be a good person. I do that in all aspects of my life and I feel like eating is such a huge part that you kind of have to be, or I feel like I have to be aware of what's going on. I've made some changes, if I don't support the way that workers are being treated by meat packing, and then I'm a vegetarian*" (Focus Group 2, Lines 1308-1311). Students were shocked by what they learned and often they shared the information with others, researched alternatives, and changed behavior as a result.

4.8 Process Evaluation

Process evaluation assessed dose and fidelity program implementation. Data included quantitative and qualitative measures, including: classroom records, observations made during class, and information regarding student perceptions of the course. These data were collected throughout the semester.

Classroom Records and Observations

Records were kept related to student attendance and participation and were used to determine the intervention dose for each participant and the fidelity of program delivery. During each class, the instructor took notes of who attended, who participated, and what was covered in the class. Appendix D contains the notes taken by the instructor throughout the semester.

During the semester, both classes covered all of the material outlined in the course outline. There were two events that occurred that altered the course plan, which were, 1) the addition of a farm visit during class, and 2) lower attendance than anticipated so there were fewer students in each group for group presentations. Early in the semester a student asked if the class could take a field trip to a farm to see firsthand what was being discussed in class. After researching options of places to visit and getting departmental approval, the class schedule was altered to integrate a farm visit into the curriculum. During the last week of February, the class was scheduled to watch King Corn in class, but instead they were assigned to watch it on their own time out of class. This allowed the class to meet at the University of Georgia Organic Farm to tour the facilities. The original material was still covered, and new material was added.

The second alteration was smaller group sizes for the group presentations. The original goal of the study was to have two sections of 30 students. This would have allowed for eight groups of 3-4 students to collaborate on their end of semester advocacy video. Actual enrollment was 13 and 16 students in each class, limiting

groups to two students per group. This added more work to each member, increasing the time and energy that was needed to complete the assignment. Ultimately, the course curriculum was delivered in the way it was intended, with the addition of a farm visit that enhanced the overall experience.

Attendance

To ensure students received an adequate dose of the intervention, the class policy was designed to make attendance mandatory. Students were made aware of the class attendance policy at the beginning of the semester when it was stated in class, and it was included in the course syllabus. If a student had to miss a class, to ensure they still received the information covered during class, they were required to write a four-page analysis of that week's reading(s), which had to give an overview and analysis of the material. This make-up assignment was due at the very next class session. Additionally, to receive credit for the course, students must have missed no more than four class sessions during the semester.

To track attendance, a sign-in sheet was passed around each day. The daily attendance was entered after class, and if a student was absent, and email was sent the same day reminding them of the course attendance policy. Overall, 25 of the 29 students had zero absences, two students had one absence, one student had two absences, and one student had four absences. Each student who was absent turned in the requisite assignment to ensure the material was covered. The make-up assignment ensured all intervention participants received the same dose of the intervention.

Participation

Student participation measures were participation in class discussions, participation in online discussion boards, and attending events related to the class. At the beginning of the semester, students were told that the class was discussion-based and that participation made up 15% of their final grade. Each day during discussion,

when a student joined the discussion; their participation was recorded and logged. Notes were taken during each class of the topics covered and they were transcribed the same day. There were 23 days when the class actively discussed the course material. Overall, 18 students participated in all in-class discussions, five students participated in all but one discussion, two students participated in all but two to five discussions, and one student did not participate in 12 discussions. The student who did not participate in 12 in-class discussions stated early in the semester that he or she was not comfortable talking in a group setting and made attempts to increase participation.

Participation in the on-line discussions made up 15% of student final grades. Each week a question was posted related to the readings being discussed during class. Students were required to post to the overall question, and then respond to two other postings to increase engagement. Calendar reminders in eLC were provided to serve as a reminder to post each week. Overall, 22 students always participated in online discussions, two students missed one on-line discussion, and three students missed two online discussions. Overall there was not significant variation in participation in class and online discussions, resulting in comparable intervention dose for each participant.

Student Perceptions

During the semester, students were required to write in a journal documenting their thoughts regarding the course and topics. These journals were collected mid-semester and at the end of the semester for review. Halfway through the semester, a mid-semester evaluation was given to the students to provide feedback on how the course was progressing. In addition, focus group questions probed at student perceptions of the course structure, topic, instructor, and overall perceptions.

Student perceptions of the class and activities were overwhelmingly positive. Mid-semester evaluations revealed that the classroom environment was positive, open and friendly, and that students felt comfortable to share their views. Many students

stated the class was managed in a fair format, and they did not feel the instructor was trying to push her views on them. One student stated, "*I honestly couldn't tell if you're vegan, vegetarian or if you eat meat cause you never expressed your views on that. And I appreciate that cause that would have swayed maybe a little bit*" (Focus Group 4, Lines 3140-3142).

Many students felt the discussion based format was ideal, and that they learned so much more when compared to a traditional lecture based format. All of the students felt the class required them to think critically, as reflected by student statements in the mid-semester evaluation "*You cannot come to this class without your brain on;*" and "*The discussions are very thorough and always make me think. I have learned to question more and think critically about the food on my plate*;" and "*You really need to be able to boil down your thoughts and ideas to coherently express them in a group setting. We are constantly being challenged to take our ideas to the next step*." Many students stated that they benefited from taking the class, "*I definitely feel like I benefited from being in this class. I would encourage other people who are not Health Promotion majors to take the class. I'm not a Health Promotion major and I definitely benefited from the class*" (Focus Group 1, Lines 726-728), and "*Yea, I personally benefited from the class*" (Focus Group 1, Line 741), and "*I really enjoyed the class cause it's the one that I mainly talk about to anyone. And it's most interesting; we don't just sit there and read PowerPoints. We read interesting books and the books can be boring at times but then there are interesting parts. It's not just sitting around, we actually talk in class. I don't really talk in any of my other classes because the teacher's teaching. I've told people about this class and told them they should take it if it comes back here, people in our major. I really liked it*" (Focus Group 3, Lines 2188-2194).

Multiple students indicated that this was the most useful and best class they had taken at the University of Georgia, all of them stated they would recommend the class to

their friends, and a third of them felt it should be required and offered again. During the focus group, students stated, "*I really liked – this was my favorite class of the semester. I think it should be required for everyone because people don't know*" (Focus Group 2, Lines 1492-1492), and "*I feel the same way [student] does. It's a really interesting class and I've recommended it to a couple of friends of mine and their thinking about taking the class here. So if you have it next semester they'll definitely be taking it*" (Focus Group 3, Lines 2183-2185), and "*This has probably been my favorite class of my entire college career because I feel like I've learned more in this class than any other course I have taken. It's things I honestly care about so it's fun to come to class, I look forward to it*" (Focus Group 3, Lines 2209-2212), and "*It was definitely my favorite class that I've taken thus far in college. I've never felt so comfortable talking in class. It was so open and I didn't feel like anything I said, I didn't feel like I was offending anybody because everyone was open to hearing different opinions*" (Focus Group 3, Lines 2217-2220).

When the students were asked to discuss things they would like to change about the course, many of them wanted to have more time for reading. Many felt the pace of the class was somewhat fast and wanted more time to read each book and discuss them in depth. During the focus groups, students stated the following, "*And also more time to read books sometimes*" (Focus Group 2, Line 1646), and "*One thing that I might have changed is the information – like take out one or two of the books and let the discussion go a little longer. Just because I think there was so much still to discuss on certain books, especially like Food and Politics, I feel like we didn't get to dive into that book anywhere near as much as that book would have allowed*" (Focus Group 1, Lines 691-695). Other students felt the pace of the class was appropriate for the level of the class, and they suggested additional activities to add "*I feel like the workload was fine because it's a 5000 level class, I mean that's expected. And I think the discussions were fine, if not too long sometimes just because you are kind of repeating the same thing, which*

may be our fault if we're not asking the right questions" (Focus Group 1, Lines 760-763), and "*You could require service hours during class*" (Focus Group 2, Lines 1603), and "*Maybe small group stuff or discussion and stuff like that, I don't always like talking in front of a lot of people but little activities or anything, small group*" (Focus Group 2, Lines 1641-1643).

4.9 Summary

Findings reveal that the course "Food, Society and Public Health" was successful in increasing healthy behaviors when compared to a control. Intervention participants had statistically significant increases in food purchasing behaviors, including buying locally produced fruits and vegetables, organic fruits and vegetables, buying direct from the farmer, and buying grass-fed beef. When compared to the control, there were significant differences between groups for each of these behaviors as well. Intervention participants had an increase in fruit intake and a healthful diet score, and a decrease in high-fat meat and processed food, though not significant. There were no significant increases in nutritional self-efficacy or readiness to change for the intervention participants, however there was a statistically significant increase in the importance of animal rights for intervention participants. Focus group findings identified comparable themes, documenting the importance of grass-fed beef for many of the participants.

CHAPTER 5:

DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

The goal of this study was to investigate whether a stealth nutrition intervention implemented in a college course would increase healthful eating behaviors among undergraduate students attending the University of Georgia. The study was guided by the Transtheoretical Model and the Social Cognitive Theory (Bandura, 1986; Prochaska & DiClemente, 1982). According to the conceptual framework of the intervention, participants who attended the Food, Society, and Public Health course would learn through consciousness raising, observational learning, and facilitation. The knowledge and skills would promote environmental reevaluation, self-liberation, counter condition, readiness to change, and increased self-efficacy for eating more fruits and vegetables and less high-fat dairy, high-fat meat, processed food and sweets. To answer the research questions, an instrument that included the Harvard Food Frequency Questionnaire (Willett et al., 1985), the Nutrition Self-Efficacy Scale (Schwarzer & Jerusalem, 1995), a readiness to change scale, food purchasing behavior questions, and beliefs questions was completed at baseline and following the intervention by intervention participants and control participants (Hekler et al., 2010). This chapter discusses the findings and limitations of this study and presents suggestions for further research.

5.1 Findings of the Study

The primary research questions in this study were whether the stealth nutrition intervention would be more effective than the control courses in increasing intake of fruits and vegetables, while decreasing intake of high-fat meat, high-fat dairy, processed food and sweets. The data support the hypothesis that the stealth intervention may be

effective in increasing fruit intake and decreasing high-fat meat, high-fat dairy and processed food intake, although not to the level of significance. Small sample size reduced statistical power to establish statistically significant findings, however the results suggest change did occur.

There are several possible explanations for the increase in fruits and decrease in high-fat meat and processed food in the intervention participants. Intake of fruits and vegetables was higher at baseline in the control group, so it is possible the control group had more access to fresh fruits and vegetables. Over 40% of the control participants were on the UGA meal plan, enabling them to eat their meals in the on-campus dining facilities 5 to 7 days a week. The dining facilities offer fresh fruit and vegetables at each meal. None of the intervention participants were on the UGA meal plan. The majority of the intervention participants lived in off-campus housing and purchased and prepared their meals themselves. Cost of fresh fruits and vegetables may have been a barrier to for the intervention participants.

Over the course of the intervention, the control participants decreased fruit and vegetable intake, while the intervention participants had no change in vegetable intake and an increase in fruit consumption. During the semester, the intervention group discussed seasonal produce and shopping at the local farmers market. They learned about these food options through facilitation, observational learning, and consciousness raising. Food purchasing behaviors related to buying from the farmers market significantly increased at the end of the intervention among control participants. Increased knowledge of the availability of fresh, local produce that generally is more flavorful may have been an explanation for the increase in the intake of fresh fruit among intervention participants.

High-fat meat intake decreased among intervention and control participants. Intervention participants discussed animal rights during the semester and had an

overwhelming response to the topic. Survey results indicate that beliefs in the importance of animal rights significantly increased among intervention participants at the end of the intervention, resulting in environmental reevaluation. Participants had visceral reactions to the videos and readings regarding animal welfare, including anger, shock, and disbelief. Many students were brought to tears because of the videos, and many students had to divert their eyes due to the disturbing imagery. Students' reasons for reducing or changing the amount of meat they chose to eat included wanting to avoid contributing to animal abuse, avoiding meat that is less healthy, and boycotting companies disregard animal and human welfare. Additionally, purchasing behaviors related to buying grass-fed beef significantly increased. These examples are all indications of environmental reevaluation, self-liberation, and counter conditioning (Prochaska, Wright, et al., 2008). For example, the increased belief in animal rights prompted intervention participants think about their meat purchases (environmental reevaluation). This caused them to make the decision to change their purchasing behaviors (self-liberation) and to purchase less beef, or to purchase grass-fed beef instead of grain-fed beef (counter conditioning). Grass-fed beef is lower in fat than grain-fed beef (Daley, Abbott, Doyle, Nader, & Larson, 2010). Both the reduction in meat intake and the replacement of grain-fed beef with grass-fed beef are indicators of decreased saturated fat consumption, which is a positive finding.

High-fat dairy intake decreased among intervention and control participants, and the decrease was significant among control participants. Students' reasons for reducing or changing the type of dairy they chose to consume included wanting to pursue a vegan diet, wanting to avoid hormones, and boycotting companies that disregarded animal and human welfare. Some students stated that they switched from dairy milk to soy or almond milk because of the class. Switching from dairy products to soy-based products

and almond milk results in decreased saturated fat consumption, which is a positive finding.

There was a decrease in processed food intake as well. The stealth nutrition curriculum covered the infiltration of substances like high fructose corn syrup (HFCS) and genetically modified organisms (GMO) in the food system and the related health implications. Students felt frustrated and somewhat helpless at being able to avoid products containing these ingredients. Local resources such as Earth Fare, Trader Joes, and the farmers market were identified via consciousness raising and facilitation as sources to purchase food that was free of HFCS and GMOs (Bandura, 1986; Prochaska, Wright, et al., 2008). Earth Fare and Trader Joe's do not stock items with HFCS and GMOs. Participant purchasing behaviors indicated statistically significant increases in purchasing locally grown, organic items, and food from the farmers market. Additionally, focus group findings revealed increased shopping at places like Trader Joe's and Earth Fare since products that contain GMOs and HFCS are not available for purchase. Overall, the intervention participants had an increase in their healthful eating score, which the control participants had a slight decrease in their healthful eating score. These changes were not significant, but do indicate the intervention course may have had a positive impact on healthy eating among participants.

The survey data do not support the hypothesis that the stealth nutrition intervention would be more effective than the control in increasing nutritional self-efficacy. There were non-significant increases in nutritional self-efficacy among intervention participants. The non-significant changes could be because the questions were not specific enough to behaviors related to this intervention. The nutritional self-efficacy questions focused on overcoming barriers related to eating healthier foods. The actual health of the food was not the topic of conversation during the class, but instead this social implications of industrialized food production. As a result, any increase in

self-efficacy related to food choices from learning about social issues may not have been measured adequately as the instrument was not specific to the intervention. Measures of self-efficacy need to be specific to the behavior being measured (Schwarzer & Jerusalem, 1995). Focus group findings provide evidence that self-efficacy to buy local food and to avoid GMOs and HFCS when appropriate retailers were accessible increased among intervention participants. Many students indicated they were shopping at these retailers more as a result of the class, however once they moved from the Athens area they were not sure what they would do as these retailers may not be available where they end up. After reviewing the results, it is hypothesized that self-efficacy related to avoiding GMOs and HFCS increased, however the self-efficacy questions used in this study did not address these specific behaviors so this cannot be confirmed.

The survey data do not support the hypothesis that the stealth nutrition intervention would be more effective than the control in increasing readiness to change in healthy eating. There were non-significant increases in readiness to change for eating low-fat meat and processed food among intervention participants. However, focus group findings do indicate increased readiness to change. The majority of the students learned new information regarding food production, and stated they intended to make changes in the future. This indicates a shift from the precontemplation stage to the contemplation or preparation stages (DiClemente et al., 1991).

During the focus groups, students identified multiple barriers to change, including the increased cost of organic food. In a few cases, students described how they were able to convince their families to buy organic milk, produce, or meat, but that were not able to because of the increased cost. Some students stated that it was difficult to implement some of these changes, such as joining a Community Supported Agriculture organization (CSA) because of the temporary nature of college. Many of them stated

that when they graduate or when they start a family they would join a CSA. Another barrier that was identified was the availability of the food items. For a few students, when they go home their families provided the food and they were not interested in changing what they had been doing their whole lives. These students implied they had no control over the food at their parent's house. Additionally, the organic, local, HFCS and GMO-free foods may not be available where the students were from. Many students went home for the summer and places like Trader Joe's, Earth Fare, CSAs, and farmers markets were not available in their region which limited their control and ability to get these types of food while away from UGA. Finally, students identified eating as a barrier, again, especially when away from UGA. There are many local restaurants in the Athens area that provide local, seasonal, organic, grass-fed beef, and free-range chicken so there are available options when choosing to eat out (Farm 255, Clocked, Heirloom Café, Chipotle, Dondero's Kitchen, Earth Fare, 5 & 10, and many more). When students were out of the Athens area, especially those from rural, southern Georgia, the choices were limited. A few students indicated the only food establishments in their towns were fast food places like McDonalds. This limited or removed their ability to choose these healthier options.

The findings of this study are comparable to that of the parent study (Hekler et al., 2010). Both studies demonstrated significant increases in values associated with animal rights and an increase in the healthful diet score. The parent study had statistically significant increases in values associated with the importance of environmental sustainability and eating a healthful diet, as well as significant increases in vegetable intake and decreases in high-fat dairy and high-fat meat. This study revealed similar trends, however the results were not statistically significant. The parent study did not measure nutritional self-efficacy, readiness to change, or conduct focus groups with intervention participants.

The strengths of this study were that it used a quasi-experimental mixed methods design. Integrating instrument data with detailed focus group data provided a better understanding of the impact of the stealth nutrition intervention on increasing healthful eating. The current study expanded on the model study by lengthening the intervention from 10 to 15 weeks, and added a religion module to the course. Each of these modifications provided increased intervention dose to the participants, potentially promoting behavior change.

Protections were implemented to ensure program fidelity and to reduce researcher bias. The curriculum was delivered following a detailed syllabus, and all of the planned topics were covered. Deception was used in the study, in both the intervention and survey administration. Intervention participants were not aware the class was for research purposes, and the survey administered at the beginning and end of the semester was given under the guise of a researcher unrelated to the course. These actions allowed the students to uncouple the survey from the class, reducing measurement bias. Had students related the two, they may have provided socially desirable answers either to ensure their grades were not affected or to make the instructor happy. When students asked the instructor about her dissertation research, she described the work she was doing for her research assistantship, which was unrelated to the course, again ensuring the course, instructor, and survey were not connected. Finally, the optional focus groups were conducted after the semester had ended and grades had been submitted. This was done to reduce grade anxiety related to statements made during the focus group. The instructor developed a strong, positive rapport with the participants which enabled an open and honest environment in the class and focus groups. The students felt comfortable in each setting to discuss the topics. All of these protections served to promote fidelity of program delivery and to reduce bias.

5.2 Limitations

This study had several limitations. The total number of participants in the intervention group was low. The study was designed to increase the number of participants by implementing two sections of Food, Society and Public Health with 30 students in each section. Overall there were only 29 students, with 13 in one section and 16 in the other. Enrollment was low due to unfamiliarity of the course and a perceived high workload. Every effort was made to promote the course across campus to increase enrollment, however only 29 students enrolled. The small sample limited the power of the statistical analyses and may have resulted in change in behavior not being detected by the instrument.

Another limitation was that this intervention used a convenience sample, so the results are not generalizable. Additionally, the intervention participants may have self-selected into the course due to having an interest in health. The course was offered through the Department of Health Promotion and Behavior (HPRB), and 72.4% of the intervention participants were HPRB majors. These students may have had healthier behaviors in place before the intervention began since they were majoring in a field that promotes health. This may be reflected in high-fat meat and high-fat dairy consumption. Baseline data indicate that the intervention participants had significantly lower intake of high-fat meat and high-fat dairy than the control participants. Additionally, the intervention and control participants consumed more fruits and vegetables daily than the general population of students at the University of Georgia. Results from the American College Health Assessment found that 92% of UGA students consumed 4 or fewer fruits and vegetables a day (ACHA-NCHA, 2009). At baseline, 45.8% of the intervention participants and 44.1% of the control participants consumed 4 or fewer servings of fruits and vegetables daily, indicating they did not have a much room for improvement as the general population of students.

Another limitation is that the survey relied on self-report data, which may not be completely accurate. There may be recall issues with the food frequency questionnaire. Students may not have been accurate with portion estimation, and they could have provided inaccurate answers due to social desirability. The participants may have responded on the survey in a manner to make them look better (i.e.) stating they eat more fruits and vegetables than they really did.

Another limitation could be that the instructor was conducting the research, which could have biased the results. In an ideal situation, another teaching assistant or instructor would have taught the course. However to ensure program fidelity was upheld it was best to allow someone familiar with the curriculum and previous research to deliver the information to ensure it was done correctly. Training another individual to deliver the curriculum would not guarantee they would moderate discussions and promote critical thinking among intervention participants in the way it was intended. Fidelity of the intervention was evaluated and the lesson plans and course syllabus were followed almost exactly. Notes were taken during the daily discussions and show that all of the intended material was covered. An opportunity arose to visit an organic farm for a tour of the facility, and the course schedule was modified to allow this activity. Instead of viewing one video in class, the students all watched it outside of class and discussed it as planned. Had another instructor been teaching the class, the farm visit may not have occurred while maintaining the integrity of the planned curriculum. They may not have seen the value in the visit, or they may have decided to cut a book or video to fit in the visit, ultimately impacting dose and fidelity.

5.3 Recommendations for Practice

This course was implemented using a structured syllabus and curriculum, which were followed almost exactly. It is important to follow the curriculum to ensure the intervention is delivered as intended, but it is also important to be semi-flexible in

delivering the intervention to allow situational opportunities. Flexibility in the classroom allowed for the addition of a farm visit that was a beneficial experience to the students. They were able to see firsthand all of the work that goes into producing food. In addition, there needs to be flexibility to allow for unforeseen issues like inclement weather. Ideally, an extra day would have been built into the curriculum to allow for a missed day of class, and this was not considered when formatting the class for the University of Georgia semester schedule. Fortunately, the nothing happened that required the school to close during this study, but this was a concern throughout the semester.

Another thing to consider is the department where the class would be taught. In the parent study, the class was delivered through the Biology department. Biology students learn about the physiology, genetics, ecology, and health. In the current study, the course was delivered through the Department of Health Promotion and Behavior, where students learn about health theory, behavior and concepts. In each case, these students may have been interested in the health implications of the food system, and self-selected into the class as a result. In the current study, this may have been problematic as the students were primed to talk about health. Even though this was not the intent of the class, general health outcomes were discussed during class. It may be beneficial to implement this class in a non-health department like English or Ecology where the students may be less likely to focus on health.

5.4 Further Research

This study was conducted as an evaluation of a stealth nutrition intervention to examine whether the curriculum would be more effective than a control course in increasing fruit and vegetable intake and decreasing high-fat meat, high-fat dairy, processed foods and sweets. The curriculum was implemented through a semester long college course in a discussion-based format. The curriculum was innovative in that it did

not focus on health outcomes to increase healthy eating, but instead it focused on social issues and process motivation. A recommendation for further research would be to implement the course among a different population, such as in a high school, church, or an after school program. Additionally, it may be helpful to implement the curriculum with a larger group of students. An increased sample size would provide more statistical power, however it may have other implications as well. Teaching two small sections of 13 and 16 students allowed for a comfortable and relaxed environment. Each student had the opportunity to express their views and share their opinion of the different topics. If the class sizes were much larger, many students may not feel comfortable sharing their views, as indicated during the focus groups. Often in a larger class, a few students dominate the discussion while others sit back and observe which may result in decreased engagement.

Overall, dietary changes were minimal among intervention participants. To promote dietary change in future studies, additional class activities could be implemented. Students could adopt a week-long diet that requires them to omit genetically modified organisms, high fructose corn syrup, or animal products and reflect on the experience. This exercise would allow them to see firsthand how prevalent these substances are in industrialized food products, and how difficult it is to avoid them. Additionally, students could be tasked to complete service hours for the class. These service hours would require them to volunteer at a local community organization (ie. Farmer's market, co-op, recycling center, butcher) which would give them direct experience with themes and topics discussed in the class. Each of these options could result in the student thinking more about their food choices, promoting eating healthier food.

Another recommendation would be to implement the course and not require attendance. Students indicated in the focus group and the mid-semester evaluations

that the strict attendance policy and the required writing assignment motivated them to come to class. This resulted in minimal differences in dose, with most students receiving the intended dose of the intervention. Not requiring attendance could result in different levels of intervention dose, allowing testing for the effect of dose. Additionally, the scales used to collect data should be refined to provide more relevant information related to the intervention. The general Nutrition Self-efficacy Scale did not assess behaviors specific to study such as buying local produce, grass-fed beef, direct from farmers, organic produce and free-range chicken. Statements made during the focus groups suggested increased nutritional self-efficacy related to these behaviors. It would be beneficial to specifically ask about confidence to perform these behaviors using the Nutritional Self-efficacy Scale root questions so that these data could be combined with the focus group statements to triangulate findings.

An additional recommendation for further research would be to measure the participants after the intervention ended to test whether they maintained any dietary changes. Administering the instrument 3, 6, or 12 months post-intervention could provide valuable information on the long-term behavioral impact of the curriculum. Incentives could be provided at each data collection point to promote participation. Attrition may be high regardless of the use of incentives as many of the intervention participants were seniors and would be graduating and moving away from the university community. Additionally, the overall goal of the study was to reduce the risk of overweight and obesity. Long-term follow-up would enable changes in weight to be measured to determine if an intervention that focuses on process motivation is effective at promoting behavior change.

5.5 Summary

This study provided evidence that a stealth nutrition intervention was more effective than a control course in increasing healthful eating behaviors to reduce the risk

for overweight and obesity. The intervention was successful for increasing fruit intake and decreasing high-fat meat and processed food intake. Significantly positive changes were seen in beliefs related to social and ideological movements, as well as purchasing behaviors related to more healthy food choices. Minimal change was detected in behavioral constructs. Qualitative data in the form of focus groups conducted among the intervention group supported the survey findings of decreased meat and processed food intake. These data provided a deeper understanding of why the students reduced their meat intake or changed the type of meat they chose to eat. The focus group data also revealed a potential increase in self-efficacy and readiness to change that was not detected with the instrument. Additional research using a refined behavioral construct scale would allow for more concrete evidence of the impact the stealth nutrition intervention had on increasing readiness to change and nutrition self-efficacy. Further research using the stealth intervention design could be used with other behaviors and other populations to help increase healthy behaviors via process motivators instead of focusing specifically on outcomes.

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APPENDIX A:

COURSE SYLLABUS

Department of Health Promotion and Behavior

College of Public Health
University of Georgia
HPRB 5160 Section 32-640
Food, Society, and Public Health
Spring 2012

Course Information

Instructor: Ms. Andrea M. Brace
Office Location: Ramsey 314
Phone: 706-542-8477
Email: amb362@uga.edu; **UGA email is the best way to contact me**
Office Hours: Wednesday 10:30am-12:30pm or by appointment

Course Meeting Time and Location

Building: Ramsey (Building #1060)
Room: 213
Day: TR
Time: 9:30am – 10:45am

Textbooks and Other Required Course Material

Kingsolver, Barbara. (2007). *Animal, Vegetable, Miracle: A Year of Food Life.* New York, NY. Harper Collins. ISBN: 0060852569

Lappe, Anna. (2010). *Diet for a Hot Planet: The Climate Crisis at the End of Your Fork and What You Can Do About It.* New York: Bloomsbury USA. ISBN: 1608194655

Menzel, P., & D'Aluisio, F. (2007). *Hungry Planet: What the World Eats*. Berkeley, CA: Ten Speed Press and Material World Books. ISBN: 0984074422

Nestle, M. (2003). *Food Politics: How the Food Industry Influences Nutrition and Health.* Berkely: University of California Press. ISBN: 0520254031

Petrini, Carlo. (2007). *Slow Food Nation: Why Our Food Should Be Good, Clean, and Fair.* Rizzoli Ex Libris. ISBN: 0847829456

Pollan, M. (2006). *The Omnivore's Dilemma: A Natural History of Four Meals.* New York: Penguin Books. ISBN: 0143038583

Safran-Foer, Jonathan. (2009). *Eating Animals.* New York: Little, Brown and Company. ISBN: 0316069884

Schlosser, E. (2005). *Fast Food Nation: The dark side of the all-American meal.* New York: Harper Perennial. ISBN: 0060838582

Schut, Micheal. (Ed.). (2010). *Food and Faith: Justice, Joy and Daily Bread.* New York: Church Publishing Incorporated. ISBN: 0819224111

Course Description

The class examines the array of forces that affect the foods human beings eat, and when, where, and how we eat them, including human labor, agriculture, environmental sustainability, politics, animal rights/welfare, ethics, policy, culture, economics, business, law, trade, ideology, religion, and psychology. The class addresses the impact of current policies and actions that might be taken to improve human nutrition and health; macro-scale influences on food, nutrition, and eating behavior.

Course Learning Objectives

By the end of the semester, students should be able to:

- Explore a variety of influences that affect the foods human beings eat and the related outcomes connected to each influence.
- Gain knowledge of macro-level influences that are detrimental.
- Self-reflect concerning personal attitudes, values, and beliefs.
- Identify local, state, national, & global organizations related to the food movement.

Course Requirements for Grading Purposes

Class discussion and assignments will be expected to demonstrate upper division-level critical thinking and verbal and written communication skills.

Class Discussion Participation:
Attending class and actively participating in discussions is crucial to the course. Each student will sign up to be a moderator for at least one of the class discussion sessions. The moderator(s) will be required to guide discussion to insure that key points are covered during the class session. Moderators are also expected to have read beyond the assigned sources (with particular emphasis on finding alternative/contradictory points of view to those included in the assigned sources). All other students are also encouraged to do the same, even when they are not the session discussion moderators. Students are also asked to identify resources and opportunities for advocacy or direct participation in the community related to the topics covered in the course. Note: Students who cannot attend a class due to an unavoidable conflict are required to write a 4-page analysis of that week's reading(s), which should give an overview and analysis of the material (single spaced, 1 inch margins, 11 point font). This make-up assignment is due at the very next class session. To receive credit, students must miss no more than 4 class sessions during the quarter.

Opinion-Editorial Article
Students are required to write and submit a newspaper Op-Ed/Opinion article (approximately 650-750 words) on a relevant issue of their choosing, related to the readings and discussions. Students will be required to submit their Op-Eds to a newspaper or other appropriate news source for publication. If not accepted, they will be required to submit it to at least three different publications. Evidence of submission and/or acceptance for publication must be provided to the instructors to receive credit. Op-Eds will be graded by the instructors based on demonstrated critical thinking and clear communication (grading will not depend on publication).
Draft due at session 11 (Feb 14); Final version must be submitted before session 13 (Feb 16).

Journal
We ask that all students keep a journal of their thoughts, reactions, and ideas over the course of the semester. The journal should include notes taken while reading, during class discussions, and in the course of completing the assignments. An online discussion board will be utilized to encourage conversations among students.

Course Requirements for Grading Purposes Continued

Group Advocacy Project
Students will work in groups of 4 to write, design and produce a brief YouTube video (5 minutes or less) targeting other young adults to advocate a behavior change related to food and society. Each group will choose its own topic/behavior change, but it must be related to the readings and discussions. Students will present their video in class.

Grading will be based on the thoughtfulness of the research, originality, rationale provided with evidence, and application/construction of the advocacy video, creativity, and within-group reviews. Groups will earn an overall group score for the project. Peers will aid in judging the overall contribution of each member in the group, and individual grades will be adjusted accordingly. *Additionally, if a group member does not contribute sufficiently, the instructor reserves the right to reduce their grade to reflect the inadequate performance.*

You must be in attendance for group presentations. Each absence during presentations will result in a 10% decrease on your group project grade. For example, if you earn 180/200 points on your group presentation and miss two days of presentations, you will get 140/200 points as your final group presentation grade. The dates of the presentations are April 5th – April 12th please note this in your calendar and plan to be in attendance.

Attendance will be taken each day by roll call or an attendance sheet. It is your responsibility to sign the attendance sheet - if you forget to sign in or otherwise do not sign the sheet before I take it up, you will be counted absent. ***You MAY NOT sign in for another student.*** If you are caught signing in for someone else or having someone sign in for you, BOTH of you will be turned in for Academic Dishonesty.

Attendance Policy

Attendance is required in this course. Students who cannot attend a class due to an unavoidable conflict are required to write a four page analysis of that week's reading(s), which should give an overview and analysis of the material (single spaced, 1 inch margins, 11 point font). This make-up assignment is due at the very next class session. To receive credit, students must miss no more than two class sessions during the quarter.

Participation

Students are expected to come to class and participate through active listening, asking questions, and participating in all class assignments, which will be due throughout the semester. In addition, students are required to post a photo on the roster of e-Learning Commons (eLC). To post a photo, go into 'My Settings' and click on 'Edit Profile.' Browse for a photo and upload it to your profile. Click the 'Public' box above the photo to the right, and then click 'Save' on the bottom left of the page. Photos must be head and shoulder shots, similar to what you would find on an ID card.

E-Learning Commons will be the primary communication portal for this class. It is your responsibility to log into eLC regularly (I would suggest multiple times a week) to ensure you are aware of upcoming events and class announcements. Failure to login to eLC regularly can negatively affect your final grade.

Grading Policy

Grading System

A 93 – 100%	A- 90 – 92.99%	
B+ 87 – 89.99%	B 83 – 86.99%	B- 80 – 82.99%
C+ 77 – 79.99%	C 73 – 76.99%	C- 70 – 72.99%
D+ 67 – 69.99%	D 60 – 66.99%	F <60%

Final Grades: Grades are final unless a mathematical error was committed in computing them. If you have concerns, discuss them with me as early as possible and NOT at the end of the semester.

Course Point Breakdown:

Class Discussion Participation	200 points
Op-Ed Article	200 points
Group Advocacy Project	200 points
Total 600	

Classroom Policy and Expectations

My Role

I am available during office hours, by appointment, or over email to assist students in any way to improve understanding of class material. I will respond to emails within 24 hours during the work week.

Students' Role

Students are expected to come to class and participate during class. Class participation facilitates a greater understanding of the material, will stimulate an interactive environment for learning, and will lead to a more productive in-class experience. Additionally, students are expected to follow the established class policies. The instructor reserves the right to withdraw a student from the class for breaking class policy. Students are also required to read the assigned readings before coming to class.

Maintaining a Safe Learning Environment

Students are expected to respect one another during in-class assignments and discussions. Classroom discussions should reflect an environment open to new ideas and opinions and should never become hostile or accusatory. Although it is the instructors' role to moderate classroom discussions, it is the role of each student to maintain an attitude of maturity and respect towards fellow classmates. ***It will be up to the discretion of the instructor to determine which topics are inappropriate for in-class discussion.***

Cell Phones, Laptops and Other Electronic Devices

The use of electronic devices (cell phones, laptops, iPods, iPads, mobile devices, etc) will not be allowed during class. All electronic devices must be turned off during class. Students that engage in using these devices during class time will be counted as absent the day of the infraction. So, please turn off and put away all phones, pagers, laptops, mp3 players etc. before class begins.

Coming Late or Leaving Early

I do not tolerate students regularly coming late or leaving early. If you are aware of a reoccurring scheduling conflict that will require you to arrive late or leave early from this class, please reassess your schedule and choose another section of this course. By arriving late, you will miss important class announcements. If something comes up and you need to leave early from one class, please sit near one of the doors so that your departure will not disrupt the class.

Students with Disabilities

It is the policy of the University of Georgia to make reasonable accommodations for qualified individuals with disabilities. If you are a person with a disability and need certain accommodations to complete course requirements, you must have a statement from the Disability Resource Center before accommodations can be made by the instructor. Further information can be found at: www.drc.uga.edu

Students with disabilities who require reasonable accommodations in order to participate in course activities or meet course requirements should contact the instructor at the beginning of the semester.

Student Athletes

Student athletes must bring the instructor an official letter from the Athletic Department outlining the student's athletic responsibility for the semester. This letter does not grant special accommodations.

University Honor Code and Academic Honesty Policy

The University of Georgia has a strict policy on academic honesty. All academic work must meet the standards contained in "A Culture of Honesty." All students are responsible to inform themselves about those standards before performing any academic work. Please review these standards at:
http://www.uga.edu/ovpi/academic_honesty/ah.pdf

Honor Code: No plagiarism, cheating, lying, or stealing of notes, essays, or projects. Cite the resources you have used for all course work. Ask me if you have questions. Violations will be regarded as a serious matter by the instructor.

I do not tolerate cheating, plagiarism, or lying of any kind in my classroom. This includes signing in for another student on any form, including attendance sheets. Any student found involved in a situation of academic dishonesty will be dealt with to the full extent of university policy.

General Disclaimer

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Tentative Class Schedule					
Class #	**Date**	**Topics (Discussion Leaders)**	**Reading and Viewing Assignments**	**Class Activities**	**Special Assignments due**
1	Jan 10 (T)	Course Introduction	None	Instructor Introductions, Small group project (ice breaker), Survey	
2	Jan 12 (R)	Food and health care, energy, environment	Michael Pollan. Farmer in Chief. The NYT Magazine, October 8, 2008 (~15pgs)	Class announcements, Student-led discussion	
3	Jan 17 (T)	Labor I	Eric Schlosser. Fast Food Nation. pp 1-131	Class announcements, Student-led discussion	
4	Jan19 (R)	Labor II	Eric Schlosser. Fast Food Nation. pp 133-270	Class announcements, Student-led discussion	
5	Jan 24 (T)	Health Impacts (HI) In class video	Forks Over Knives (90min)	Class announcements, watch video (70 minutes)	Takes notes for class discussion
6	Jan 26 (R)	HI - In class video/ Discussion	Forks Over Knives (90min)	Class announcements, finish watching video (30 minutes), Class discussion (35 minutes)	
7	Jan31 (T)	Agriculture I	Michael Pollan. Omnivore's Dilemma. pp 15-119 (Industrial Corn)	Class announcements, Student-led discussion	
8	Feb 2 (R)	Agriculture II	Michael Pollan. Omnivore's Dilemma. pp 124-273 (Pastoral Grass)	Class announcements, Student-led discussion	
9	Feb 7 (T)	Agriculture In class video	Future of Food (2005) 88 minutes	Class announcements, watch video (65 minutes)	Takes notes for class discussion
10	Feb 9 (R)	Ag - In class video/ Discussion	Future of Food (2005) 88 minutes	Class announcements, finish watching video (25 minutes), Class discussion (35 minutes), Assign Op-Ed project (10 minutes)	
11	Feb 14 (T)	Environment/Climate Change I	Anna Lappe. Diet for a Hot Planet. pp 3-126(Crisis and Spin)	Class announcements, Student-led discussion	

Class #	Date	Topics (Discussion Leaders)	Reading and Viewing Assignments	Class Activities	Special Assignments due
12	Feb 16 (R)	Environment/Climate Change II	Anna Lappe. Diet for a Hot Planet. pp 129-251 (Hope and Action)	Class announcements, Student-led discussion	
13	Feb 21 (T)	Ethics I	Jonathan Safran Foer. Eating Animals. pp 81-150	Class announcements, Student-led discussion	
14	Feb 23 (R)	Ethics II	Jonathan Safran Foer. Eating Animals. pp 151-244	Class announcements, Student-led discussion	
15	Feb 28 (T)	Ethics - In class video	King Corn (2007) 88 mins	Class announcements, watch video (65 minutes)	Takes notes for class discussion
16	Mar 1 (R)	Ethics - In class video/Discussion	King Corn (2007) 88 mins	Class announcements, finish watching video (25 minutes), Class discussion (35 minutes), Discuss Op-Ed assignment (10 min)	
17	Mar 6 (T)	Reviews of Op-Ed drafts	None	Class announcements, Review Op-Ed drafts and provide student feedback	Op-Ed draft due
18	Mar 8 (R)	Politics and the Food Industry	Marion Nestle. Food Politics. pp 1-29, 51-110.	Class announcements, Student-led discussion, Assign group project, Allow students time to select group topics and group members (20 minutes)	Final Op-Ed due and submitted before start of class Form Final Project groups
March 11-March 17 – Spring Break					
19	Mar 20 (T)	Current Policy Issues I	Carlo Petrini. Slow Food Nation	Class announcements, Student-led discussion, Answer questions about group project, Survey	Mid-semester evaluation
20	Mar 22 (R)	Current Policy Issues II	Carlo Petrini. Slow Food Nation	Class announcements, Student-led discussion	

Class #	Date	Topics (Discussion Leaders)	Reading and Viewing Assignments	Class Activities	Special Assignments due
21	Mar 27 (T)	Transforming food systems – In class video	Fresh, a Film by Anna Sofia Jones (2009) 72 mins.	Class announcements, watch video (72 minutes)	Post video reflection on eLC; respond to two other postings
22	Mar 29 (R)	Religion and Food	Michael Schut. Food and Faith	Class announcements, Student-led discussion	
23	Apr 3 (T)	Culture, Global Food	Peter Menzel & Faith D'Aluisio. Hungry Planet: What the World Eats.pp 11-20 (intro) & 2 family stories	Class announcements, Student-led discussion, Answer final questions about group project	
24	Apr 5 (R)	Culture	Barbara Kingsolver. Animal, Vegetable, Miracle	Class announcements, Student-led discussion	Final Video Due
25	Apr 10 (T)	Final Project Presentations: groups 1, 2, 3	None	Class announcements, Student presentations	
26	Apr 12 (R)	Final Project Presentations: groups 3, 5, 6	None	Class announcements, Student presentations	
27	Apr 17 (T)	Final Project Presentations: groups 7,8	None	Class announcements, Student presentations	
28	Apr 19 (R)	Agriculture	Our Daily Bread. Film by N. Geyrhalter (2005) 92 mins.	Class announcements, watch video (65 minutes)	Takes notes for class discussion
29	Apr 24 (T)	Agriculture	Our Daily Bread. Film by N. Geyrhalter (2005) 92 mins.	Class announcements, finish watching video (30 minutes), Class discussion (40 minutes)	
30	Apr 26 (R)	Wrap-up	None	Class announcements, Survey, Final thoughts	FFQ (In class)

Important Dates

January 12	Drop Deadline
January 13	Add Deadline
January 15	Martin Luther King, Jr. Day (No Monday Classes)
March 1	Midterm
March 6	Op-Ed Draft Due
March 8	Final Op-Ed Due
March 12-16	Spring Break (No Classes)
March 20	Rough Draft of the Advocacy Video Due
March 22	Withdrawal Deadline
April 5	Final Version of the Advocacy Video Due
April 10 - 17	Group Presentations
April 30	Last Day of Classes
May 1	Reading Day
May ##	Final Exam, Time

APPENDIX B:

CONSENT LETTER AND QUESTIONNAIRE

Dear Student,

You are invited to participate in a research survey about your everyday behaviors. The survey is intended to assess behaviors related to the environment and health. The survey will take approximately 15 minutes to complete.

Your participation is voluntary; you have the right to stop participating at any time, or to leave questions blank. You can refuse to participate or stop taking part at any time without penalty or loss of benefits to which you are otherwise entitled. Any individually-identifiable information will be kept confidential, and your individual privacy will be maintained in any published or written data resulting from the survey. In order to make this study a valid one, some information about the study will be withheld until completion of the study.

We ask for your name and email address in order to be able to ask you to complete a similar survey in the future. Only the researchers will have access to your name and email address and we will keep your name and email address separate from your survey answers. In addition to today, this research survey will be administered at the end of this semester during this class (April 2012). Additionally, a final administration of the research survey will be available online four months after the end of the spring 2012 semester (September 2012) via Survey Monkey. A reminder email will be sent to you at the address you provided on this form. Internet communications are vulnerable to confidentiality breaches, but the data will be submitted in an encrypted format and stored on password protected hard drives to ensure your information is protected and secure.

There are no anticipated risks or direct benefits to you from this survey. Whether or not you participate in this survey will not affect your grades or change how you are treated in any way, and you will not receive payment for your participation in the two surveys administered during the semester. If you complete the third and final survey which will be administered four months after the semester has ended, your name will be entered into a drawing where you could win one of four gift cards in the amount of $25.00. Participation in the research is not required to be entered into the drawing. For more information, please email Andrea Brace at amb362@uga.edu to be entered into the drawing.

CONTACT INFORMATION:
Questions, Concerns, or Complaints: If you have any questions, concerns or complaints about this survey, its procedures, risks and benefits, you should ask the Principal Investigator, Dr. Marsha Davis, at davism@uga.edu or (706) 542-4369.

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199 (706) 542-3199; E-Mail Address IRB@uga.edu

Marsha Davis, PhD, Department of Health Promotion and Behavior, University of Georgia

Survey Instructions:

- You must be 18 years of age or older to complete this research survey.

- Think carefully and be honest with your responses; they will be kept confidential.

- The symbols ">" and "<" represent "greater than" and "less than," respectively. "+" represents "or more".

- Please answer each question to the best of your ability with the options provided. It is okay if you do not know the exact amount; please estimate.

- For behaviors that you engage in frequently, estimate the number of times per day by imagining yourself going through your daily routine, then multiply by seven if the question asks for a weekly estimate.

- If your behavior varies a lot from day to day, try estimating an average if the question asks for a daily estimate.

1. **Your Name** (e.g., first name last name): _____

2. **Your University of Georgia email address**: _____

3. **An alternative email address**: _____

4. Compared to other things in your life, **eating a healthful diet** is:
- ☐ Not at all important compared to other things in your life
- ☐ Less important
- ☐ About as important
- ☐ More important
- ☐ Just about the most important
- ☐ The very most important

5. Compared to other things in your life, **staying physically fit** is:
- ☐ Not at all important compared to other things in your life
- ☐ Less important
- ☐ About as important
- ☐ More important
- ☐ Just about the most important
- ☐ The very most important

6. Compared to other things in your life, **environmental sustainability** is:
- ☐ Not at all important compared to other things in your life
- ☐ Less important
- ☐ About as important
- ☐ More important
- ☐ Just about the most important
- ☐ The very most important

7. Compared to other things in your life, **animal rights** is:

- ☐ Not at all important compared to other things in your life
- ☐ Less important
- ☐ About as important
- ☐ More important
- ☐ Just about the most important
- ☐ The very most important

8. Compared to other things in your life, **social justice** (e.g. human rights, workers' rights, poverty elimination, and/or racial/gender equalities, etc.) is:

- ☐ Not at all important compared to other things in your life
- ☐ Less important
- ☐ About as important
- ☐ More important
- ☐ Just about the most important
- ☐ The very most important

9. Compared to other things in your life, **ethics and morality** are:

- ☐ Not at all important compared to other things in your life
- ☐ Less important
- ☐ About as important
- ☐ More important
- ☐ Just about the most important
- ☐ The very most important

For each food or drink listed, select how often **on average** you have eaten, drank or used the amount specified **during the past month**

	Drinks	Never or less than 1 per month	1-3 per month	1 per week	2-4 per week	5-6 per week	1 per day	2-3 per day	4-5 per day	6+ per day
10.	8 oz. servings of pre-bottled water (glass or plastic)									
11.	8 oz. servings of water from a tap or drinking fountain									
12.	12 oz. of low calorie soda, flavored water or other diet drinks (e.g., Diet Coke)									
13.	12 oz. of regular soda, flavored water or other sweet drinks with sugar (e.g., Coke, Gatorade, lemonade, sweet tea)									
14.	8 oz. of 100% fruit juice (e.g., orange juice, tomato juice)									

For each food or drink listed, select how often **on average** you have eaten, drank or used the amount specified **during the past month**

	Dairy	Never or less than1 per month	1-3 per month	1 per week	2-4 per week	5-6 per week	1 per day	2-3 per day	4-5 per day	6+ per day
15.	Skim or low-fat milk (8 oz. glass)									
16.	Whole milk (8 oz. glass)									
17.	Yogurt (1 cup)									
18.	Ice Cream, ice milk, sherbet, sorbet, or frozen yogurt (1/2 cup)									
19.	Cottage or ricotta cheese, cream cheese or sour cream (1/2 cup)									
20.	Other cheese, e.g., American, cheddar, etc., plain or as part of a dish (1 slice or 1 oz. serving)									
21.	Margarine (pat), added to food or bread; exclude use in cooking									
22.	Butter (pat) added to food or bread; exclude use in cooking									

	Fruits	Never or less than 1 per month	1-3 per month	1 per week	2-4 per week	5-6 per week	1 per day	2-3 per day	4-5 per day	6+ per day
23.	Fresh apples or pears, (1)									
24.	Oranges (1) or grapefruit (1/2)									
25.	peaches, nectarines, apricots, or plums (1)									
26.	Bananas (1)									
27.	Fresh strawberries, blueberries, raspberries or other berries (1/2 cup)									
28.	Other fresh fruits (1/2 cup)									
29.	Frozen or canned fruits (1/2 cup)									

For each food or drink listed, select how often **on average** you have eaten, drank or used the amount specified **during the past month**

	Vegetables	Never or less than 1 per month	1-3 per month	1 per week	2-4 per week	5-6 per week	1 per day	2-3 per day	4-5 per day	6+ per day
30.	Fresh tomatoes (1)									
31.	Fresh green or string beans (1/2 cup)									
32.	Dried beans or lentils, not canned (1/2 cup)									
33.	Fresh Broccoli, cabbage, cauliflower, or Brussels sprouts (1/2 cup)									
34.	Fresh corn (1 ear)									
35.	Fresh carrots (1/2 carrot or 2-4 sticks)									
36.	Fresh zucchini, squash, eggplant, yams or sweet potatoes (1/2 cup)									
37.	Fresh spinach, kale, mustard or chard greens, raw (1 cup) or cooked (1/2 cup)									
38.	Lettuce (1 salad serving)									
39.	Any other fresh vegetables (1/2 cup)									
40.	Frozen or canned vegetables (1/2 cup)									
41.	Prepackaged salad mix (1 salad serving)									

For each food or drink listed, select how often **on average** you have eaten, drank or used the amount specified **during the past month**

	Eggs, Meat, Fish	Never or less than 1 per month	1-3 per month	1 per week	2-4 per week	5-6 per week	1 per day	2-3 per day	4-5 per day	6+ per day
42.	Eggs (1)									
43.	Chicken or turkey, with skin (4-6 oz.)									
44.	Chicken or turkey, without skin (4-6 oz.)									
45.	Bacon (2 slices)									
46.	Hot dogs (1)									
47.	Hamburger (1 patty)									
48.	Processed meats, e.g., sausage, salami, bologna, etc., (piece or slice)									
49.	Beef, pork or lamb as a sandwich or mixed dish, e.g. stew, casserole, lasagna, etc.									
50.	Beef, pork or lamb as a main dish, e.g., steak, roast, ham, etc. (4-6 oz.)									
51.	Canned tuna fish or sardines (3-4 oz.)									
52.	Other fish (3-5 oz.)									

	Sweets, Baked goods, misc.	Never or less than 1 per month	1-3 per month	1 per week	2-4 per week	5-6 per week	1 per day	2-3 per day	4-5 per day	6+ per day
53.	Chocolate (1 oz.)									
54.	Candy without chocolate (1 oz.)									
55.	Pie or cake (1 slice)									
56.	Cookies (1)									
57.	French fried potatoes (4 oz.)									
58.	Packaged snack foods, e.g., chips, pretzels, nuts (1/2 cup)									
59.	Food from a fast food restaurant, e.g., McDonald's, Taco Bell, Subway (1 meal or snack)									

For questions 60-64, below. If you do not understand what the question is referring to (e.g., you do not know what "free-range" is) or you don't know (e.g., you do not know whether or not you buy organic produce) then answer either "I do not buy…" or "never," whichever is most appropriate.

60. When you personally buy fresh fruits and vegetables, how often do you make it a point to buy fresh fruits and vegetables that are **locally grown** (e.g. grown within the state)?

- ☐ I do not buy fresh fruits or vegetables
- ☐ never
- ☐ sometimes
- ☐ about half the time
- ☐ most of the time
- ☐ all the time

61. When you buy fresh fruit and vegetables, how often do you buy them from a **farmers' market, farm stand, or direct from farmers**?

- ☐ I do not buy fresh fruits or vegetables
- ☐ never
- ☐ sometimes
- ☐ about half the time
- ☐ most of the time
- ☐ all the time

62. When you buy fresh fruits and vegetables, how often do you make it a point to buy **organic** fruits and vegetables?

- ☐ I do not buy fresh fruits or vegetables
- ☐ never
- ☐ sometimes
- ☐ about half the time
- ☐ most of the time
- ☐ all the time

63. When you buy beef from a store or order beef in a restaurant, how often do you make it a point to get **grass fed beef** (instead of grain/corn fed)?

- ☐ I do not buy or order beef
- ☐ never
- ☐ sometimes
- ☐ about half the time
- ☐ most of the time
- ☐ all the time

64. When you buy chicken from a store or order chicken in a restaurant, how often do you make it a point to get **free-range** chicken?

- ☐ I do not buy or order chicken
- ☐ never
- ☐ sometimes
- ☐ about half the time
- ☐ most of the time
- ☐ all the time

For questions 65-69, please indicate how certain you are that you could overcome the following barriers:

65. I can manage to stick to healthful foods even if I need a long time to develop the necessary routines.

- ☐ Not at all true
- ☐ Hardly true
- ☐ Moderately true
- ☐ Exactly true

66. I can manage to stick to healthful foods even if I have to try several times until it works.

- ☐ Not at all true
- ☐ Hardly true
- ☐ Moderately true
- ☐ Exactly true

67. I can manage to stick to healthful foods even if I have to rethink my entire way of nutrition.

- ☐ Not at all true
- ☐ Hardly true
- ☐ Moderately true
- ☐ Exactly true

68. I can manage to stick to healthful foods even if I do not receive a great deal of support from others when making my first attempts.

- ☐ Not at all true
- ☐ Hardly true
- ☐ Moderately true
- ☐ Exactly true

69. I can manage to stick to healthful foods even if I have to make a detailed plan.

- ☐ Not at all true
- ☐ Hardly true
- ☐ Moderately true
- ☐ Exactly true

70. How many days per week do you perform any regular physical activity, like brisk walking, jogging, bicycling, etc., long enough and hard enough to make you breathe hard and work up a sweat?

☐ 0 ☐1 day ☐2 days ☐3 days ☐4 days ☐5 days ☐6 days ☐7 days

71. On average how many minutes per day do you perform regular physical activity, like brisk walking, jogging, bicycling, etc., long enough and hard enough to make you breathe hard and work up a sweat?

- ☐ I am not physically active once per week
- ☐ less than 15 minutes
- ☐ 15-29 minutes
- ☐ 30-44 minutes
- ☐ 45-59 minutes
- ☐ 60-74 minutes
- ☐ 75-89 minutes
- ☐ 90 or more minutes

For questions 72-75, please indicate your eating behaviors related to fruit and vegetable consumption. Please read to directions after each question carefully.

72. How many servings of fruits and vegetables do you usually eat each day? (a serving is 1⁄2 cup cooked vegetables, 1 cup of salad, a piece of fruit, 3⁄4 cup of 100% fruit juice).

☐ 0☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐6 or more

If you answered 0, 1, 2, 3, or 4 in question number 72, please answer questions 73 and 74. If you answered 5 or 6 or more, in question number 72, please skip to question 75.

73. You answered that you usually eat 4 or fewer servings of fruits or vegetables each day. Do you intend to start eating 5 or more servings of fruits and vegetables a day in the next 6 months?

☐ No (If you answer no, please skip to question 76)
☐ Yes (If you answer yes, please answer question 74)

74. Do you intend to start eating 5 or more servings of fruits and vegetables a day in the next 30 days?

☐ No (If you answer no, please skip to question 76)
☐ Yes (If you answer yes, please skip to question 76)

75. In question 72 you indicated that you were eating 5 to 6 servings of fruits and vegetables each day. Have you been eating 5 or more fruits and vegetables a day for more than 6 months?

☐ No
☐ Yes

76. Please choose the statement that best describes your consumption of low-fat dairy products (1% or skim milk).

☐ I am not currently consuming low-fat dairy products and I am not thinking of doing so in the upcoming six months.
☐ I am not currently consuming low-fat dairy products but I plan to do so within the next six months.
☐ I am not currently consuming low-fat dairy products but I plan to do so within the next month.
☐ I am currently consuming low-fat dairy products but I have been doing so for less than six months.
☐ I am currently consuming low-fat dairy products and I have been doing that for more than six months.

77. Please choose the statement that best describes your consumption of low-fat meat products (90% lean ground beef, baked chicken or fish) as your primary source of meat.

☐ I do not eat meat.
☐ I am not currently consuming low-fat meat and I am not thinking of doing so in the upcoming six months.
☐ I am not currently consuming low-fat meat but I plan to do so within the next six months.
☐ I am not currently consuming five low-fat meat but I plan to do so within the next month.
☐ I am currently consuming low-fat meat but I have been doing so for less than six months.
☐ I am currently consuming low-fat meat and I have been doing that for more than six months.

78. Please choose the statement that best describes your consumption of processed foods (foods made with trans-fats, saturated fats, refined flour, large amounts of sodium or sugar).

- ☐ I do not eat processed foods.
- ☐ I currently consume processed foods but I am thinking of stopping in the upcoming six months.
- ☐ I currently consume processed foods but I plan to stop consuming them within the next six months.
- ☐ I currently consume processed foods but I plan to stop consuming them within the next month.
- ☐ I have stopped consuming processed foods but I have been doing so for less than six months.
- ☐ I have stopped consuming processed foods and I have been doing that for more than six months.

79. Do you consider yourself a vegetarian? ☐ Yes ☐ No

80. In the past year, have you been a member of: (mark ALL that apply.)

- ☐ An environmental organization
- ☐ A garden organization
- ☐ A vegetarian organization
- ☐ An animal rights organization
- ☐ A human rights or social justice organization
- ☐ None of the above

81. Your Major: _____

82. Your Class: ☐ Freshman ☐ Sophomore ☐ Junior ☐ Senior ☐Other_____

83. Your age: _____

84. Your current living situation:

- ☐ Residence Hall
- ☐ Fraternity/Sorority House
- ☐ Off-campus housing (not with parents/relatives)
- ☐ With parents/relatives
- ☐Other (specify) _____

85. What is the five-digit zip code of the home where you grew up? _____

86. Your Gender: ☐ Female ☐ Male

87. Your Ethnicity (mark all that apply):

- ☐ White
- ☐ Latino/Hispanic
- ☐ African-American/Black
- ☐ Asian/Asian-American
- ☐ Pacific Islander
- ☐ Other (Please Specify) _____

88. Do you participate in the UGA meal plan? If you answer no, please specify where you eat most of your meals.

- ☐ Yes, the 5-day plan
- ☐ Yes, the 7-day plan
- ☐ No (Please Specify) _____

89. Are you a student athlete? ☐Yes ☐No

90. Do you belong to a fraternity or sorority? ☐Yes ☐No

91. With what religion do you most closely identify?

- ☐ Christianity
- ☐ Judaism
- ☐ Hindu
- ☐ Buddhist
- ☐ Muslim
- ☐ Utilitarian Christian
- ☐ Agnostic
- ☐ Atheist
- ☐ Other (Please specify) _____

92. How often do you attend religious services?

- ☐ Never
- ☐ Less than once a year
- ☐ Once or twice a year
- ☐ Several times a year
- ☐ Once a month
- ☐ 2-3 times a month
- ☐ About weekly
- ☐ Weekly
- ☐ Several times a week

93. About how often do you pray or meditate outside of religious services?

- ☐ Never
- ☐ Only on certain occasions
- ☐ Once a week or less
- ☐ A few times a week
- ☐ Once a day
- ☐ Several times a day

94. Your Weight (in pounds): _____ pounds

Your Height:

95. Feet

☐ 4 feet ☐ 5 feet ☐ 6 feet ☐ 7 feet

96. Inches

☐0 ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ☐8 ☐9 ☐10 ☐11

Thank you for completing this survey.

APPENDIX C:

CONSENT LETTER AND FOCUS GROUP QUESTIONS

Focus Group Guidelines

Introduction

The purpose of this focus group is to understand the impact of participation in HPRB 5160, Food, Society and Public Health on personal behaviors.
The one-hour focus groups will be conducted by me under the direction of Dr. Marsh Davis, Department of Health Promotion and Behavior, University of Georgia. There will be two note takers jotting down main discussion points, and the discussion will be audio recorded.

You participation in this focus group is voluntary. You can refuse to participate or stop taking part at anytime without giving any reason, and without penalty or loss of benefits to which you am otherwise entitled. Your final course grade has been calculated and turned into the departmental secretary to be entered before the focus groups are conducted. There are no risks or discomfort is expected in participating in this research.

Please sign two consent forms, one for my records and one for your records. Please return one of them to me before we get started. There are three types of data I would like to use for this research: 1) the focus group data, 2) the online discussion postings from HPRB 5160, and 3) your personal journals from HPRB 5160. Please indicate on the consent form if you agree to allow me to use these data.

No individually-identifiable information about you will be shared with others without your written permission. You will be assigned an identification number and this number will be used to label all of the documents or records collected. The audio tapes will not include names. If names are mentioned during the recording of the focus group, they will be changed during transcription of the audio files. The audio files will be destroyed after the recording has been transcribed.

Do you understand the goals of this focus group and your role in the research?
You will receive a $10 gift card for participating in the focus group.

Rules/Guidelines

I will act as moderator asking questions and guiding the discussion. I would like to hear from everyone during the discussion. During the discussion I will ask each question to the group and allow every participant to answer. Once each person has answered, the group as a whole can discuss the question. To ensure we cover all of the relevant topics I will guide the discussion from topic to topic.

I expect an open, polite, and orderly environment where everyone in the group feels comfortable to participate.

At the end of the focus group you will receive a $10 gift card for participation. I will need you to sign your name indicating you received the gift card, and this information will be kept on file with the Department of Health Promotion and Behavior. Your name will not be linked in any way to the focus group data or your class information.
In addition, if you are interested in participating in the one-hour individual interviews later this month, please sign up on the related sheet. I will be contacting you to schedule the interview.

Are there any questions before we begin?

Questions:

Indicators of engagement in the food movement

1. How does your current level of awareness of regarding organizations related to the food movement compare now to before you took this class? (Ask each person to speak and then open if for discussion among the group).
2. What organizations have you joined or are you planning to join related to food?

Indicators on social capital and social engagement

3. What are topics from the class that you discuss with your family and friends outside of the class, if any?
4. Who do you talk to about food and food related issues outside of class?
5. What reception do you receive from others when talking about the course topics?

Basic moral foundations

6. How has this class influenced your perspective on the role of morality and ethics in eating and food production, if at all?

Eating Behaviors

7. How do your eating behaviors compare now to how they were at the beginning of the semester?
8. If your eating behaviors have changed, what do you attribute to that change?
9. If your eating behavior has not changed, what to you attribute to your consistent eating behavior? Can you describe any barriers that prevented behavior change?

Perceptions of HPRB 5160

1. What are your thoughts regarding HPRB 5160?
2. Do you have any suggestions for improvement?

Thank you very much for participating in this research.

APPENDIX D:

FOCUS GROUP NOTE TAKER FORM

Note taker: _____
Session Start Time: _____

Focus Group Notes

General Session Notes:
Description and Number of participants (gender, ethnicity)

General mood of discussion (complete at end)

Additional Notes:

Indicators of engagement in the food movement

1. How does your current level of awareness of regarding organizations related to the food movement compare now to before you took this class?

2. What organizations have you joined or are you planning to join related to food?

Indicators on social capital and social engagement

1. What are topics from the class that you discuss with your family and friends outside of the class, if any?

2. Who do you talk to about food and food related issues outside of class?

3. What reception do you receive from others when talking about the course topics?

Basic moral foundations

1. How has this class influenced your perspective on the role of morality and ethics in eating and food production, if at all?

Eating Behaviors

1. How do your eating behaviors compare now to how they were at the beginning of the semester?

2. If your eating behaviors have changed, what do you attribute to that change?

3. If your eating behavior has not changed, what to you attribute to your consistent eating behavior? Can you describe any barriers that prevented behavior change?

Perceptions of HPRB 5160

3. What are your thoughts regarding HPRB 5160?

4. Do you have any suggestions for improvement?

APPENDIX E:

CLASS NOTES AND OBSERVATIONS

1/10/12; 9:30

Today I introduced the class. Fourteen students were enrolled, fourteen were present, and one was absent (one person had not formally enrolled). I introduced myself, gave some background information (edu, growing up, interests). I had the students go around the room and tell me 4 things: name, major, something interesting about the class, why they chose to take the class. Multiple students from HPRB heard about the class from their advisors, and three students who had taken Environmental Sciences like the food section of the course and took this class as a result.

I went over the syllabus in depth, describing the schedule, the readings, movies and assignments. Students asked questions about the reading schedule and the advocacy assignment. I showed them a video made last semester to give them an example of the advocacy video. Towards the end of class, a guest speaker from Campus Kitchens came in to talk to the class about Campus Kitchens. She described the program to the students, which is related to some of the topics we will be discussing in the class. She sent around a clipboard allowing students to sign up for the list-serve for the organization and invited them to come volunteer.

5160 12:30

Today I introduced the class. Eighteen students were enrolled, and seventeen were present. I introduced myself, gave some background information (edu, growing up, interests). I had the students go around the room and tell me 4 things: name, major, something interesting about the class, why they chose to take the class.

I went over the syllabus in depth, describing the schedule, the readings, movies and assignments. Students asked questions about the reading schedule and the advocacy assignment. I showed them a video made last semester to give them an example of the advocacy video.

Towards the end of class, a guest speaker from Campus Kitchens came in to talk to the class about Campus Kitchens. She described the program to the students, which is related to some of the topics we will be discussing in the class. She sent around a clipboard allowing students to sign up for the list-serve for the organization and invited them to come volunteer with the organization.

1/12/12; 9:30

There were 16 students in attendance today. Class started with brief announcements and students began signing up for discussion days. A graduate student came in to administer the survey at 9:39, and she ended at 9:58. All 16 students completed the survey. Class began with a brief summary of the class expectations and an example of the group project. At 10:10 we began discussing the reading for the day, Michael Pollan's *Farmer in Chief*. There were two new students so I briefly summarized the reading, and opened the discussion to the class. I started by asking general thoughts and reactions to the reading and two or three people responded. I had nine guiding questions planned, but the discussion was free-flowing, guided by student comments so we did not follow my questions (which I was okay with). We touched on the importance of local farming, with benefits and barriers presented (knowing where your meat comes from, being able to trace problems more easily at a local level vs. access and affordability). We talked about the need for change in the food system, but how this is such a huge process and how it would be time consuming and costly, and who was going to pay for it. We talked about defining food, not only as an individual but also the influence the government has on defining what food is (Pizza is labeled as a vegetable if enough tomato sauce is on it, Reagan and classifying ketchup and relish as a vegetable). Finally we discussed labeling food (specifically with bar codes to track the processing of food and how this could be ignored, could still be deceitful, and it would be

costly (so overall not feasible). Overall it was a great class with great discussion, and most of the students (95%) participated at least one time.

1/12/12; 12:30

There were 18 students in attendance today. Class started with brief announcements, and a graduate student came in to administer the survey at 12:35. She ended at 9:53. All 18 students completed the survey (two came in late but still finished with everyone else). Class began with a brief summary of the class expectations and an example of the group project. At 12:10 we began discussing the reading for the day, Michael Pollan's *Farmer in Chief*. I started by asking general thoughts and reactions to the reading and four people responded initially. Many of the students interpreted the reading as rude or forceful, and felt that in order for the message to get across to others that it needed to be "dumbed down."

The discussion was free-flowing, but I had to resort to the guiding questions at the end as students ran out of things to say. Early on the discussion was guided by student comments so we did not follow my questions (which I was okay with). We touched on the importance of local farming, focusing more on barriers (access, logistics, and affordability). We talked about the need for change in the food system, but how this is such a huge process and how it would be time consuming and costly, and who was going to pay for it (many suggested the local governments and when I raised the point that many communities are vastly different economically (Peachtree City compared to Quitman County), that it would be difficult to do across the board. When I asked for suggestions to overcome this barrier I got a lot of shrugs). We talked about defining food and the influence the government has on defining what food is (Reagan and classifying ketchup and relish as a vegetable). We discussed the logistics of moving from CAFOs to grazing farming and the challenges involved with that (Land availability,

animal ability to transition, the left over ecological impact, etc). Overall it was a great class with great discussion, and most of the students (85%) participated at least once. 1/17/12; 9:30

Today [student] and I led the discussion on chapters 1-5 of *Fast Food Nation*. We had a PowerPoint with guiding questions to help keep the discussion moving. Everyone was present and prepared for class. I started with few brief announcements, and then opened the discussion with a general question about the reading regarding the goals the author had in writing the book. Responses included providing a look into the fast food industry and opening our eyes to the influence of the advertisers. Labor, advertising to children and food quality were major themes discussed during class. There were opposing views on labor laws, offering benefits through employment, controlling food purchasing using food stamps, and immigration issues. We spoke for about 10 minutes regarding immigration issues in GA, and how jobs that were once help by illegal immigrants are not filled and produce is rotting on the vine because there is no one willing or available to pick the food. I had to divert the conversation back to the reading. Advertising to children was the next topic of discussion, and a theme was that parents need to basically parent. One student mentioned that she is glad she is taking this class before she has children so she can use this information when she raises her children. We discussed how the combination of a lack of education about nutrition in schools, parents having little time to cook, and economic hardship can contribute to parents serving their kids fast food since it is cheap, fast and tastes good. Match that with the "freight train" that is the advertising industry promoting these products, we have a David and Goliath situation. The last few minutes of class were spent recapping the discussion, and suggesting ways they could use these topics in their Op-Ed article and their group projects.

1/17/12; 12:30

Today [STUDENT] and I led the discussion on chapters 1-5 of *Fast Food Nation*. We had a PowerPoint with guiding questions to help keep the discussion moving. Everyone was present and prepared for class. I started with few brief announcements, and then opened the discussion with a general question about the reading regarding the goals the author had in writing the book. The class felt the goal was to inform and educate the general population about the fast food industry. Labor, advertising to children and food quality were major themes discussed during class. We talked about the overall impact of fast food on the culture, how it cycles between being busy and needing something fast and tasty and inexpensive to feed or kids. We talked about advertising to children, and how it can have such an impact on what kids want to eat. It was stated that companies need to be more cognizant of providing healthier portions (grilled chicken fingers at Chic Fil A) and parents need to promote these foods to their kids. We discussed how McDonalds is a brand known worldwide, which is why they felt Schlosser chose them to focus on. We also discussed the differences in the types and quality of food found at McDonalds both in the United States and in other countries, with other countries having better tasting and quality McD's. We wondered if there were differences in quality within the US, in regions that differ economically. The last few minutes of class were spent recapping the discussion, and suggesting ways they could use these topics in their Op-Ed article and their group projects. We also discussed the possibility of bringing food to the days we have group presentations.

1/19/12; 9:30

Today [STUDENT] and I led the discussion on chapters 6-the epilogue of *Fast Food Nation*. We had a PowerPoint with guiding questions to help keep the discussion moving. One student was absent, and everyone else was present and prepared for class. I started with few brief announcements, asked them about their interest in

bringing food during group presentations, and then started the discussion. We spent quite a lot of time talking about the meat industry and I showed 6 minutes video clip that demonstrated the inside of a slaughterhouse. Students were shocked at the stories outlined in the text telling of the injuries sustained in the factories, the types of things that end up in the meat, the quality of the meat, and how the corporations were concerned with only money, and not with the quality of the product or the treatment of their employees. We talked briefly about how "accurate" the video we watched was, and how much preparation (gaining permissions, cleaning the facility, slowing the line" and editing of the final video probably occurred. We talked about ways to promote local farmers and meat producers, and barriers to them becoming main stream (access, more expensive). The discussion then moved to food additives, including natural and artificial flavorings, preservatives and high fructose corn syrup. Students were concerned about the shelf-life of bread and other products. One student mentioned she is so concerned about those chemicals that she makes her own face cleansers. One student raised the question if people would even enjoy the flavors of natural foods anymore, so I plan to bring in fresh baked bread and natural peanut butter and preservative-laden bread and peanut butter for us to try next week. The class ended with brainstorming on issues from these discussions that could be used in the class projects.

1/19/12; 12:30

Today [STUDENT] and I led the discussion on chapters 6 – Epilogue of *Fast Food Nation*. We had a PowerPoint with guiding questions to help keep the discussion moving. Everyone was present and prepared for class, however two students did not participate. I started with few brief announcements, and then opened the discussion with a question about the Nation's view of McDonald's. Students stated they are seen on two fronts, first as a philanthropic organization that provides scholarships, a place to stay during medical emergencies, and they support the Olympics. On the other hand

they are seen as a food establishment, which is seen as good by some and negative by others. They felt that the information presented in the book painted the suppliers as negative, and wanted information that provided suggestions for safe and sustainable farming (not just “Eat grass fed beef” but instead a list of responsible businesses that are doing it better or right. We spent quite a lot of time talking about the meat industry and I showed a 6-minutes video clip that demonstrated the inside of a slaughterhouse. Students were immediately suspicious of how accurate the video was, and we talked briefly about how “accurate” the video was, and how much preparation (gaining permissions, cleaning the facility, slowing the line, an almost “scripted” response to the questions, etc.” and editing of the final video probably occurred. The class ended with brainstorming on issues from these discussions that could be used in the class projects.
1/24/12; 9:30

Today we began watching *Forks Over Knives* during class. All students were present during class. I started with few brief announcements, showed them the sign-up sheets located on eLC for the food and advocacy project, and then started the movie. We watched approximately 70 of 90 minutes of the movie, which we will finish on Thursday. I met with [STUDENT] and [STUDENT] briefly after class to touch base about the discussion on Thursday. I told them to get me their discussion questions before class, and that I would send them a few to add if they were needed.
1/24/12; 12:30

Today we began watching *Forks Over Knives* during class. All students were present during class. I started with few brief announcements, showed them the sign-up sheets located on eLC for the food and advocacy project, and then started the movie. We watched approximately 70 of 90 minutes of the movie, which we will finish on Thursday. I met with [STUDENT] and [STUDENT] briefly after class to touch base about

the discussion on Thursday. I told them to get me their discussion questions before class, and that I would send them a few to add if they were needed.

1/26/12; 9:30

Today we finished watching *Forks Over Knives* during class. All students were present during class. I started with few brief announcements, and then we moved into the discussion. [STUDENT] and [STUDENT] lead the discussion, and prepared a PowePoint of questions to follow. The discussion started questioning the classes thoughts on how something so small (diet change) could result in such huge health changes and benefits. Two of the students currently enrolled in Health Consumerism questioned if the claims in the video were "Quackery" as they seemed too good to be true. The students also questioned if one on a plan-based, whole-foods diet would be able to get all of the necessary nutrients from, or if it would be necessary to take supplements. We talked about how western medicine allows a person to continue their current food habits, but patching up the problem, but how this diet could resolve problems. We showed a clip from the Pink music video "Raise Your Glass" which depicted women hooked up to lactation machines to feed calves. We talked about the ethics of keeping cows pregnant, and how accepted it is to consume species milk. Many students had not thought of it in that way before, and the video was unsettling to them.

1/26/12; 12:30

Today we finished watching *Forks Over Knives* during class. All students were present during class. I started with few brief announcements, and then we moved into the discussion. [STUDENT] and [STUDENT] lead the discussion. They started the discussion asking general thoughts on the video, and the overall feasibility of the diet. Many students felt it was unrealistic to give up all animal products. They questioned why the physicians did not call it a vegetarian or vegan diet. They picked up on how meat is such an integral component of our western diet, and how it is just used as a flavoring in

other cultures (then relating that to obesity rates in this country). The discussion moved to consuming milk, and e showed a clip from the Pink music video “Raise Your Glass” which depicted women hooked up to lactation machines to feed calves. Many students were taken aback by the video, visibly uncomfortable. When we discussed the ethics of how the animals are raised, one student, whose family owns a small dairy farm defended her families treatment of cows. She stated that their farm only had six stalls, and the animals were grass fed. I had the class step back to remind them that the readings and videos were not how everyone grows food or treats animals, but it was often common with larger, corporate farms and not so much with small, family-owned farms. Another student added that in the rural community where she is from that the small dairy farms could not compete with large corporations. These corporations bought them up. As this transition occurred, she noticed a movement of the cows grazing on the pastures to never seeing them as they were all confined to the barn, eating corn. The students did not feel this diet was feasible due to the amount of time it would take to prepare food, and they would have to eat too much to get the needed calories each day.

1/31/12; 9:30

Today a speaker from P.L.A.C.E. came in to talk to the class (http://www.localplace.org/). All of the students were present. He started with a PowerPoint which went through some of the history of our food system, he defined local food (involving the class in defining the term), he talked about differences in food consumption on a global level, using images from the Hungry Planet book, talked about food insecurity, and civic agriculture. After his presentation, which lasted about 35 minutes, he joined the class in the discussion of the first half of *Omnivore’s Dilemma*. The students discussed how antibiotics are used in CAFOs to control disease. They discussed the need for the antibiotics (confined quarters, unnatural diet, contact with fecal matter) and the implications of the use of antibiotics (superbugs, health for

individuals with cancer or other diseases). Students were asked if they thought it was feasible to go back to grass fed beef, and students were meek. They felt there would be a need for more land, that the price of beef would increase, and that would impact the profitability of the industry; resulting in pushback from big business. The students discussed why the farmers stay in the corn/monoculture industry, how they got there in the first place, and how difficult it would be to move away from it. They also brought up that the land would have to be remediated to treat for all of the chemicals being used, and how this would take a long time. At the end of class, the students discussed how this class is impacting their behaviors. They stated that they were reading the labels more and how they were shocked that corn was in almost everything in one form or another. They felt a sense of helplessness at how to change, and Craig suggested changing one food at a time. He shared that he began eating only local tomatoes in the summer and when he returned to grocery store tomatoes in the winter he realized they had no flavor and he no longer wanted them. Class ended with reminders to bring their journals Thursday.

1/31/12; 12:30

Today we began discussing *Omnivore's Dilemma*. All but one student was present, and everyone participated in the discussion. We started with a brief summary of the three themes presented in the book, and students added one to the list. We then moved into the questions where the first asked what do you the class felt is be the proper role of government in deciding how we grow, process, and eat our food? Students discussed corn subsidies and how they promote the excessive growth of corn. They discussed how this translates into an overabundance corn in all of our food. We discussed HFCS, and how media makes it look natural. We looked up the commercial that promotes HFCS as a natural product to determine the company promoting the product, and it went right back to the major corporations like Cargill, Inc. We talked about

how corn is everywhere, and you cannot get away from it. Two students took a class where they had to not eat food with any corn products in it, and they described their experiences. It was difficult and their diet was limited for a week. The ethics of food production was discussed, focusing on labeling and advertising (who regulated labels which are not necessarily factual), the ethics of what animals are fed, and who is responsible for inspecting the facilities. We discussed how current food production and processing is resulting in us creating a nation-wide food desert, as well as the environmental impact this is having (water, soil). Finally, we discussed the dangers of having one crop and the issues related to that, including crop failure, or acts of terrorism. Overall the class agreed that it would take something big to make a change in the current system (relating the laws that changed after 9/11).

2/1/12; 9:30

Today we finished discussing *Omnivore's Dilemma*. All students were present, and almost everyone participated in the discussion. [STUDENT] and [STUDENT] led the discussion. They started by writing the themes on the board and then had the class rank them in order of priority. The themes presented were: 1) Industrial farming promotes quantity over quality, 2) The more one is involved in food production and preparation, the more pleasure they get from the food, and 3) Labeling devices. The class discussed how organic is defined by the government, and how it is different than what actual organic is. We compared and contrasted industrial farming vs. local, sustainable farming. They showed clips from *Food, Inc*. which showed video of an industrial chicken farm, as well as video filmed at Polyface Farms, the farm Pollan visited and described in the book. Students discussed the implication for the animals, the workers, the quality of the meat, and the environment. They then began to discuss policy, and how we could change it. They felt we needed to work at the individual level and spread the word. They felt a lot of people would not read books, and that using

media like television would be useful. They also felt that if celebrities were promoting a change in the food culture, then the general public would follow. They briefly touched on religion and food, stating that there is a lapse in ethics and how we need to have more of a respect for people, animals, and the land. We discussed the overproduction of food, and how much of it is wasted. Food labeling was mentioned, and the mandatory caloric labeling in NY was discussed. Many students felt they were not at all concerned with the caloric information, but instead with the nutrients and production information, as a result of what they are learning in the class.

2/1/12; 12:30

Today a speaker from P.L.A.C.E. came in to talk to the class (http://www.localplace.org/). All of the students were present. He started with a PowerPoint which went through some of the history of our food system, he defined local food (involving the class in defining the term), he talked about differences in food consumption on a global level, using images from the Hungry Planet book, talked about food insecurity, and civic agriculture. After his presentation, which lasted about 35 minutes, he had to leave. The class then started their discussion of the second half of *Omnivore's Dilemma*. The discussion started with a question asking if the current food culture in the US was a reflection of our character or values. Students felt we are a society of instant gratification, that we choose to have blinders on or we just do not want to know what is going on regarding the food industry. They felt that age is a factor, and older adults who have been eating a certain way for their whole lives do not feel it is necessary to change. Many students talked about how the information they have learned in this class has them evaluating their eating behaviors. Six students are reading all of the food labels they encounter, and three of them have not eaten meat since the semester began. The last part of the discussion revolved around comparing and contrasting the industrial food system with Polyface farms. The students discussed the

expense of ethically grown food, and they spent time talking about the choices people make. Many students admitted to not thinking twice about paying $4 for a cup of coffee or a steamer (which is the same price as a whole gallon of milk), yet $3 for a dozen eggs is “expensive”. They said they would be more considerate of their future food purchases.

2/7/12; 9:30

Today we began watching *The Future of Food* during class. All students were present during class though three students came late and one left 15 minutes early. I started with few brief announcements, I returned the journals and described the grading and clarified expectations, and passed out the attendance sheet. We watched approximately 71 of 88 minutes of the movie.

2/7/12; 12:30

Today we began watching *The Future of Food* during class. All students were present during class. I started with few brief announcements, I returned the journals, described the grading and clarified expectations, and passed out the attendance sheet. We watched 71 of 88 minutes of the movie.

2/9/12; 9:30

Today we finished watching *The Future of Food*, and one of the video extras on Community Supported Agriculture. The computer would not play the video, so I had to run upstairs to get my laptop, so we lost about 7 minutes of class time to that. All but one of the students were present. Once the video was finished around 10:10, [student] began leading the discussion. She had a PowerPoint prepared with three questions, and I added two additional questions. The first theme we discussed was the patenting of seeds, and life. One student felt this was us humans stepping on Mother Nature’s toes, and that nothing good was going to come from trying to control Nature. They were appalled at the fact that Monsanto sued farmers for seed blowing into their fields and cross-pollinating. They raised the point that if you own a dog it is your responsibility to

fence your dog in, not others to fence the dog out. They feel that Monsanto should be treated the same. They disagreed with Monsanto getting away with controlling farmers. One student stated sarcastically that she should be able to patent her eggs and control all generations that come from her, and be able to get government subsidies to sustain the process. One student felt we as Americans need to start seeing food as an investment again, not just a product, and compared the industrial food system to Mac and traditional farming to a PC. She stated Mac has more restrictions on sharing, and PC's seem more open to sharing. The next theme we discussed was labeling of GMO's. They did not feel it was fair to require organic farmers to go through so much red tape to label their food as organic, while GMOs do not have to label. They felt the GRAS were unacceptable and felt that we cannot generally follow policy in other areas of life, so why is this okay here. Finally, we discussed how Europe has passed laws to label all GMOs, but the US has not, and why they felt this was the case. They feel Americans are too individualistic, and they Europeans care more about food policy and what they eatg. 2/9/12; 12:30

Today we finished watching *The Future of Food*, and one of the video extras on Community Supported Agriculture. All of the students were present. Once the video was finished around 1:00, two students began leading the discussion. They had a PowerPoint prepared with eight questions. They first asked for the class's initial reaction, and many of them were surprised that GMOs are not required to be labeled in food. They assumed they were labeled and they had not noticed. One student stated that they are not surprised as Americans are not concerned as they feel they are invincible or they may not care for the health. There is a pill or procedure to fix most anything. They were questioning how much food contains GMOs, and we talked about corn and soy, and the number of products they are in. They were concerned at not even knowing what contains GMOs and not having a choice to avoid those products. The next

them we discussed was Monsanto, and their overwhelming presence in the food industry. They were concerned/frustrated/angered by the overlap between Monsanto and the Federal Government, and how the people no longer have a voice or a choice as a corporation is having all the say. They felt the government has too much control and are being paid off by the companies. They were concerned about the impact our regulations had on other companies, and wanted to know what Canada did regarding GMO labeling (I looked this up and sent it to the class). They stated the US was too big and had no common culture so it was hard to bring everyone together. I raised the issue that Europe, which is made up of multiple countries, was able to do it so what was stopping us? They were distressed at this thought. Finally, we discussed patenting and they were on the fence about patenting life. They expressed fear at the power and irrelevant attitude of the companies, but still felt patents were necessary. They felt the companies had no regard for human welfare and needed to be reigned in, except they were paying off the government to avoid doing so. Overall the students were concerned about the unknown health effects of GMOs, they feared an allergic reaction, describing how they have noticed their reaction to produce is different to how it was years ago. We briefly discussed how fruits should be peeled before eating them, and I found article telling the top 12 foods to buy organically.

2/14/12; 9:30

Today we began discussing *Diet for a Hot Planet*, and the discussion was led by [student] and [student]. They led the discussion until about 10:05, and then a speaker from Farm 255 came in to talk to the class. All of the students were present. The themes of the discussion revolved around the amount of energy needed to produce food, ways to reduce individual emissions, and using the climate crisis as a marketing strategy. Overall the students were not aware of the amount of energy used to produce food, and they felt the general public would be even less aware. They were aware of the

transportation issues, but had not considered the production and disposal issues. Some felt that the disposal was the primary issue do to packaging and over-purchasing. Some felt this was a topic they did not really care about; that there were more important issues in the food system (GMOs, pesticides, animal welfare, etc). Students were asked to complete an ecological footprint activity, and they were asked to provide their suggestions for how they could reduce their footprint. Many suggested recycling, replacing light bulbs, cutting back on meat, educating others and recycling for others, as well as being mindful of usage. They were upset by the power that corporations have over the industry, and upset that many use the climate crisis as a marketing strategy. They gave examples of green-washing, including Wal-Mart and their new packaging of granola bars (while not changing the unhealthy ingredients in the food). I suggested that they questions things like this, as the author did in the book. If something does not seem right, call the author, call the corporation and demand the information.

At the end of the discussion, the speaker began talking. She gave the history of Farm 255, and explained that small steps do make a difference. She said they use the restaurant as a political platform to raise awareness of where food is coming from and to start a dialog to get people thinking about where their food comes from. She suggested the students check out www.locallygrown.com to find ways they could purchase locally grown food.

2/14/12; 12:30

Today we began discussing *Diet for a Hot Planet*, and a speaker from Farm 255 came to talk to the class. All of the students were present. The speaker talked at the beginning of class for about 30 minutes. She gave the history of Farm 255, and explained that small steps do make a difference. She said they use the restaurant as a political platform to raise awareness of where food is coming from and to start a dialog to get people thinking about where their food comes from. She suggested the students

check out www.locallygrown.com to find ways they could purchase locally grown food. At the end of her discussion students asked questions regarding the challenges they faced with the business and how they advertise.

When the speaker was finished, two students led the discussion of *Diet for a Hot Planet*. The themes of the discussion revolved around their initial reaction with the material, their reaction to their ecological footprint, things the students can do to reduce their footprint, the impact on farmers, and their definition of nature. The students felt overall this was a more positive book regarding the way the author handled the information; presenting problems and solutions. They liked the call to action, and that the suggestions gave them hope. They were shocked by their ecological foot prints, at how high they were. One student who was in my HPRB 1710 class in 2009 completed the assignment for that class as well. She was pleasantly surprised that her score dropped from 8 earths in 2009 to 3.4 earths in 2012. The students suggested ways to reduce their ecological footprint, which included buying local food, putting more vegetables on their plate, being more mindful in what you choose to eat, and choosing items with less packaging. They were surprised to learn about the deceptive use of language of corporations who were trying to give an air of being green but who actually were not green. They were very surprised that methane was so harmful and so prevalent; previously only being aware of CO2 was an issue. The last topic touched on the student's perception of nature. Many students felt nature only occurs where humans cannot touch it. They do not see the food system as nature. Some students who grew up on farms felt differently, that food production was nature. They felt industrial farming was more like a factory, and not at all "nature".

2/16/12; 9:30

Today we finished discussing *Diet for a Hot Planet*, which was led by [student] and myself. All of the students were present. I briefly explained the Op-Ed article requirements, and allowed for questions. After about 10 minutes, we moved into the discussion of the book. We began by discussing the Wump World principle described in the book, and students felt there were some optimistic activities and changes occurring, unlike what was described in the book. They felt the farm was able to rehabilitate a piece of "unusable" land in 10 years, and that was promising. They felt the changes described by Olivia regarding Athens-Clarke County were commendable, and provided hope. We then reverted back briefly to a part of the conversation from Tuesday where a student expressed they did not feel that had a sense of control in their housing-environmental choices and I suggested strategies to gain some control (asking for low-flow fixtures, negotiating environmental upgrades if pay slightly more or sign a longer lease, etc). I told them they just had to ask, and the worst someone would say is No. The discussion then moved to talk about the parallel between Kudzu and GMOs. Kudzu was thought to be a beneficial addition to the ecology, but has turned out to be very problematic. Students felt GM foods could follow the same past as there is not enough research to show the long-term effects. They felt perhaps many of the corporations started out with good intentions of feeding the world, but lost sight of their intentions and may be unaware of what the research is showing (possibly the researchers are not aware, or even some of the corporate leaders as their lawyers may be handling much of the legal issues). They also felt that the financial benefits propel these companies to keep trying to grow their businesses, and that they could not see past the profits. They also felt that these companies have the resources to spread their food around the world, so if they were truly concerned with doing well, they could do it (which makes them think it is all about the money). We talked briefly about McDonaldization of other countries, and how our country pushes our culture on others, whether it is when giving aid or

expanding businesses. Finally we discussed ways we could green our diets, by eating more greens, eating at home more, bringing our own bags and the taxing of bags. They felt these would be easier methods. They also thought eating local was easy in this area, and that composting would be a good way to reduce waste making its way into landfills. We ended class by taking 15 minutes to brainstorm specific activities the students could do as an individual in the community and on campus (I took a photo of their ideas which were written on the board).

2/16/12; 12:30

Today we finished discussing *Diet for a Hot Planet*, which was led by two students. All of the students were present. I briefly explained the Op-Ed article requirements, and allowed for questions. After about 10 minutes we moved into the discussion of the book. We started by defining progress, and the students felt there were multiple definitions. For industrial farms progress was related to making lots of money and fast output and using huge amounts of resources. For smaller, local farms progress was rehabilitating the land, raising a polyculture of species on the land, and still making money. They were then asked if Sheppard's farm was realistic (Organic, small scale) and they were hesitant to respond. They felt that overall farming is not an aspiration anymore as many people have moved away from it. Farmers are seen as uneducated and the work is very labor-intensive. We discussed the actual knowledge requirement of traditional farmers, and they students tried to figure out ways to improve their image in society (media campaign, Facebook). They felt for more farms like this to be successful, there needs to be more support from the government, more education about the health benefits of the food, and more promotion of the farms. They also stated that we need to be careful, as current local farms in the ACC region are not currently producing enough food for the entire region, so there would need to be controlled growth. They said barriers to eating from local farms is that it would be difficult to eat

seasonally, as Americans are used to eating what they want, when they want it for no regard for seasonality. They felt of the 7 principles, that eating more vegetables and locally (depending on region) would be easier, while eating organically (access and cost), reducing packing and cooking your own meals would be more difficult. We ended class by taking 15 minutes to brainstorm specific activities the students could do as an individual in the community and on campus. We ended class by taking 15 minutes to brainstorm specific activities the students could do as an individual in the community and on campus (I took a photo of their ideas which were written on the board).

2/21/12; 9:30

Today we began discussing *Eating Animals*, which was led by two students. All but one of the students were present. We started by talking about the concept of "locked doors" in factory farming and what they meant. The class was surprised the author did not get any response from Tyson for the multiple letters sent, and they felt the whole system was locked. They felt it was locked on the front end as info about their practices were kept under wraps, and locked on the back end in the form of confidential settlements. They stated that if the companies were doing things right, they wouldn't need all this deception. The class was then asked if the concept of factory farming was a radical, middle of the road or conservative issue and the class overall felt it was a middle of the road issue as it deals with something as simple as our food and this impacts everyone. Most people just want safe food. They stated that some of the barriers to this was that people were unaware of what is going on, that they didn't want to know, and that the companies are trying to hide their wrong-doings.

One student mentioned the World Peace Diet, which I need to look into. We then showed the video *Meet Your Meat*, and discussed their reactions. A few students chose not to watch, and a couple were brought to tears (as was I the first time I watched it). The students raised the point that we are nicer to deer and have more laws to protect

their welfare (seasonal hunting, limits to number can kill, fines if break the laws, etc). We talked about the inhumane treatment of the animals, and many students were concerned with how they could abuse the animals so badly; what it took for them to get to that point. We talked about the lack of control the workers have over their jobs, that they are not able to speak out as risk of being fired, that they are stressed with making quotas and possibly being abused themselves, so the only thing they can take it out on are the animals. The question was raised if we could hold animal abuse and human abuse in the same light, as the author compares animals to children, and most of the class agreed that humans take precedent. One student is appalled at the human rights violations the workers are suffering through and felt that the animal abuse stems from that. She thinks we need to work on changing the working conditions for the animals, and other changes for the animals would follow. Another student shared her views on animals and religion, that we are all "God's creatures" but that animals are not at the same level as humans. She stated we are taught to have dominion over animals, that God put them here for our use, but we were to use them in a human and careful way and treat them with respect as they were His gift to us. One student felt that animals are treated so poorly because they cannot speak up for themselves. If they had a voice there would be laws restricting the abuse, and the laws would be enforced. We talked briefly about cultural differences, and how that translates into what we eat. We talked about the onset of new illnesses in kids and how this is most likely related to the processed food the kids are eating. We are going to end up in a place where antibiotics no longer work, where kids are going through puberty younger.

2/21/12; 12:30

Today we began discussing *Eating Animals*, which was led by [student] and [student]. All of the students were present. We started by showing the *Meet Your Meat* video and then talking about it. I preempted the video telling them it was made by/for

PETA and that their goal was to promote veganism. This video would be followed up by a video showing the humane treatment of animals for meat production. One student felt the PETA video was contradictory, that they did not deliver a clear message (other than do not eat meat). Another student felt the video used guilt and shame to stop you from eating meat, and they did not feel this was successful. They felt the video should have provided more options that just not eating meat. We compared the video, which was a compilations of clips shot illegally in the factory farms to the one produced by Oprah, and the PETA ad was more graphic and less controlled. The same went for the Willis Farms video – it was transparent, and seemed to be promoting healthy, sustainable meat production. One student talked about the promotional videos on the Tyson site and how scripted they were, using catch phrases like "We are stewards of the land" over and over, yet then telling you that it is your responsibility to cook the meat thoroughly and wash your hands (because the meat is covered in shit) as the student put it. The students discussed the authors attempts to get a response from Tyson and how they ignored him, and they felt their lack of response was telling that they were doing something wrong. One student felt that the company was so big that they would not just respond to one person, but other students jumped in to talk about how this is a well-known author giving them a chance to tell their side, and how their lack of response makes them look even worse. One student raised the point that Michael Vic was prosecuted for animal abuse, but these companies get away with it (because of the types of animals they are). They tried to figure out why people are accepting of abuse to livestock but not pets. We then discussed the differences between animals raised on factory farms versus those raised in nature. One student stated regardless of how they die in nature, they don't live like that (factory farms) in nature. They have a chance to try and get away and fight back, and this is not the case in industrial farming. They also have more space in nature, which is something drastically lacking in farms. We talked

about how hunting has rules that govern the practice, and yet factory farms are lacking in rules controlling the treatment of animals. We then talked about how taste guides our choice in what we eat. Many students felt we don't have enough emotion tied to the foods we eat, and that our culture is lacking an appreciation of food. One student raised the point that in Europe people take time to eat, at least 20 minutes and many students talked about how fast they have to eat. One student asked how to slow down her eating, so I discussed some of the principles of mindful eating (eat in same place, lack of stimulation, pay attention to your food and the taste and texture, etc). They seemed really engaged in these suggestions. They related it to how much time is given to eating, and they if people actually slowed down to eat that they might actually taste how bad the drugged up meats really are. Finally we talked about how the author was pursuing this information and how he wanted the best for his kids. I asked if they felt parents should have to work so hard to make sure their food is healthy, and they felt the corporations should provide safe and healthy food as their business model. They felt the government should have more control, not the corporations.

2/23/12; 9:30

Today we finished discussing *Eating Animals*, which was led by [student] and [student]. All but one of the students were present, and she arrived 15 minutes before class ended. We started by talking about the concept of "ignorance is bliss" and students shared their experiences regarding talking about the class with others. Many of their friends and family are tired of hearing about the class, they claim to already know the information to refrain from hearing about it further, or they get defensive about the topic. They feel many people do not want to know because either they would have to make a change or would just know they are eating crap. We discussed choosing kindness over cruelty, and compared how Pollan suggests we can be compassionate while eating meat while Foer had the opposite view. They brought up the point that in

other cultures, many people in poverty survive of meat and would have no food if not for the meat; we as Americans just consume too much. We briefly touched on the implications of claiming to prepare foods certain ways, and the implications in not doing so. The example from the book discussed the kosher meat producer and we discussed how devastating it would be to find out the food you were consuming was not prepared to your moral standards. We talked about taking consideration in preparing food for others, and how to respectfully decline food that others prepare that does not fit your lifestyle. We talked about the reactions (insulted, hurt, etc) people would have if you refused to eat a meal they prepared if it had meat or dairy, etc. I stressed communication – ask your guests their dietary restrictions and communicate your own with others. We talked about Will Tuttle and the World Peace Diet, who promotes honoring and respecting all food, and that we reap what we sow. We are disconnected from the food we eat, and we do not eat meat considering it was an animal once. We talked about Wayne Dyer, and the power of intention and being more aware of the food we are eating. We talked about mindful eating, and learning to appreciate the land that created the food. Blessings over meals was discussed, and many students had not considered the blessing as a way of considering where food comes from. One person raised the question if you should thank the animal or God, or both. One student asked if we should be eating God's creatures, and another defended eating them; stating that is was well laid out in the Bible that the animals were put here for us to eat. One student compared this gratitude and awareness to the movie Avatar, which seemed to resonate with the class. A student then raised the question of what would happen if we all stopped eating meat, thinking all of the animals would be free to roam. I reminded them they animals are so unhealthy they their probability of survival would be minimal. That led is to discuss deer hunting and how that serves as a mechanism of population control. We rapped class up by talking about valuing animals and how they are treated transfers

into what we are eating. If they are stressed, we are eating their stress. Many students did not see this as being a health issue for meat-eaters, but instead were more concerned about the effects of eating meat treated with antibiotics and hormones. Finally, we talked about how communities like those in NC could stand up against the huge pork factories and demand the right to health, and demand their responsibility to clean meat production. A strong advocate that believes in the cause would be necessary, and lawyers ready to fight would be necessary.

2/23/12; 12:30

Today we finished discussing *Eating Animals*, which was led by [student] and [student]. All but one of the students were present. We started by asking the class what affected them most by what was presented in the book. One student stated he was so affected by the horrible conditions in the factory farms and slaughterhouses (treatment, cleanliness, lack of respect for the concept that food was being created for consumption) that he switched to eating grass-fed meat. Another student has started trying out different types of veggie burgers, describing them to the class. She said if you go into it thinking they will taste like meat, you will be disappointed, but as a veggie burger they are delicious. Many students stated they felt limited in making changes since the Farmer's Market did not start until April, and the local CSA had a waiting list. We discussed local alternatives, such as the online "locally grown" site, supporting local restaurants, and looking for other CSAs. Overall the consensus from the class is their trust in the federal regulations and the USDA had been depleted based on what they have been learning. They wanted options to be able to track their food, and I introduced them to the HarvestMark phone app which offered just that option. Many of them made note of the app, and one student downloaded it in class. We talked about regulation, and how the meat industry needed something along the lines of what our restaurants have; the publicly posted grading system on the facility and on each package of meat so we

can be informed consumers when shopping for food. A few students felt the USDA inspectors probably felt limited in their jobs, fearing that going against what the company wanted would result in losing their jobs. They felt if they had control in their job (which they should have as they are governmental employees), then they would be able to enforce the regulations and report those not following them. The discussion then moved on to discussing animal rights (all killing for food is bad) vs. animal welfare (raising animals humanely and killing them humanely for food is okay). All of the students supported animal welfare; even the vegetarians. They do not feel it is feasible to get everyone to be vegan or even vegetarian, so as a result they felt supporting animal welfare would be most productive. One student felt the two types of organizations should join forces and have an even bigger impact. Additionally, many students feel that PETA, the most known animal rights organization is too absolute in their views and it is hard for people to support them. A few students also criticized PETA regarding their media campaigns, as they objectify women while advocating for animals. The discussion then moved to asking the students their views on comparing animals to slaves. The students were very hesitant to discuss this topic, and everyone that spoke basically stated that you cannot compare animals to humans. A few students were uncomfortable reading this part of the book. Next we discussed the health implications of eating animals that are stressed out. They were concerned that this would have negative impacts on human health. They were even more concerned with the scientists that felt it was better to genetically modify pigs to remove the stress gene instead of providing them appropriate living conditions and removing the stress from their lives. They were befuddled and angered by the disconnect in the industry. This led us to discuss the worker's behavior in the food lots and slaughter houses. By being around stressed out animals who were acting out, they workers had to be aggressive resulting in animal abuse. Some of the students could not understand how the workers could get to that point, but others raised

the fact that many of the workers work in no-control jobs, they are often from vulnerable populations so they have no voice, and this could result in them taking out their fear/frustration/etc. on the animals. Their mental health is most likely negatively impacted working in these conditions, constantly killing animals. Finally, we talked about the environmental factors surrounding factory farms. They were enraged that companies found paying fines more profitable than doing things right. They proposed the industry pay for allotted pollution credits, that the fines are increased (who sets the fines anyway?), that the corporate workers have to clean up their own mess (hands on), that the power to shut them down in restored, and that they start mandating they pay for their own messes, including the environmental and health outcomes.

February 28 – Organic Farm Visit

Both classes met at the UGA Organic Farm for class. The classes each met for 45 minutes, providing the students 15 extra minutes to get to and from campus safely. All of the students but one was present during the morning class, and [student] joined the morning class. Once everyone arrived, we were lead around the farm. The guide gave us an in-depth description of the different natural chemicals used on the farm (Nitrogen, Phosphate, Potassium,), and how they use a 10/10/10 blend in organic farming. He described the increased cost in synthetic fertilizers (from $2 a bag 10 years ago to $20 now) and how this has shifted to a move back to conventional farming using cover crops to restore nutrients to the soil. He described how industrial farming feeds the plants while organic farming feeds the soil which in turn feeds the plant. He described the technology they use on the farm, including green houses, white cover fabric and adjustable walls to extend the growing season. He gave us a tour of the green house where they were growing lemongrass and various vegetables, which they sell to the Georgia Center for use in their restaurant. The students were allowed to smell the lemongrass which they seemed to enjoy. We walked down to the raised bed area of the

farm and past the vermiculture area where the students got to see some early crops being grown (asparagus, herbs). They seemed very intrigued by the worms.

During the afternoon class, the students started by touring the greenhouse, getting to smell the lemongrass and learning about edible flowers. The guide described the process of becoming certified organic and described the difference between certified organic and naturally grown (using no chemicals and being certified vs. being peer certified). He described how the weeds are 80% of the labor that goes into organic farming, and that insects and disease were only about 20% of the workload. We then walked out into the fields to learn about vermiculture, when it started to rain.

3/1/12; 9:30

Today we discussed *King Corn*, which was led by [student]. All of the students were present. She identified three themes, which are Industrialization, Regulations and Consumer. She showed a brief video about the McDonalds lettuce producers and asked their thoughts on the subsidies. Multiple students felt subsidies were the main part of the vicious cycle and that farmers are not paid enough. The farmers are stuck with what the government sets the subsidies, and the farmers are stuck/forced into monocropping. It was suggested that farmers should revolt and boycott, but the students were reminded about the farmer's huge debt and needing to be able to feed their families. We then began talking about regulations and watched the Butz clip from the film. The class did not feel he made a good change in agriculture policy as what resulted helped the consumers get cheap food but ultimately hurt the farmers. They questioned why we cannot change back to the old ways; if one person had so much influence back then, what is stopping change now (industry, government, etc). They stated a need for honest politicians and a need to cut the ties between industry and politicians. We discussed how this could have implications for their campaigns (losing campaign contributions which would limit the ability to campaign). One student shared his or her experience working

with Congressmen Bishop, who was described as listening to his constituents and took their needs and desires into consideration. The student said elected officials need to be approachable, and that he was effective as he was. The conversation then turned to HFCS and how the video showed it being made in a home kitchen and the precautions that had to be taken to make it safely. Hazardous materials were needed to process the materials, and one student suggested that all of the materials and chemicals used in the processing HFCS should be on the label as well. We talked about the marketing of HFCS and how they try to apply to your morals. They depict a strong, attractive man with a small, delicate little girl which makes you think of protection. A man like that would not serve his child something harmful, so it cannot be bad for me to consume. We talked about how some companies are making Throwback sodas, using cane sugar in the processing. We then talked about the use of antibiotics in cows, and how this keeps them alive longer to prevent illness versus just treating illness. They were concerned with the interactions with these drugs and hormones given to the cows with their own medications upon consuming the cow. They were also concerned with the increased resistance to antibiotics. We then discussed how the consumers demand needs to be increased to change the system. One student felt that consumers lost value in food, that we just consume what is produced. Class ended about 15 minutes early so the students could complete a mid-semester evaluation.

3/1/12; 12:30

Today we discussed *King Corn*, which was led by [student]. I started the class by administering a mid-semester evaluation, and then we voted to have class outside. All of the students were present. The discussion started by talking about the chemicals used in processing HFCS, and the subsidies used to supplement corn production. The students stated they learned a lot about subsidies from the film. One student stated that this was their second time watching the film, and that they learned different things

watching it this time than before. The students were not aware of the fat percentage difference between grass fed beef and corn fed beef, and they were uplifted by the increased trend in farmers markets. They were asked if the movie glorified corn farming since you can plant an acre of corn in 18 min (easy work) but the students agreed there was not enough money in the industry to make it worthwhile. They were amazed that two college students with no training could just start farming; that they did not need a formal education to farm. One student suggested the corn fields be used to graze cattle (after some remediation), and that if enough consumers demand grass-fed beef then the market would follow. Instead people want cheap meat, specifically in price but not in quality. The students seemed to struggle still with the idea of subsidies, and wanted to know what would happen if the farmers boycotted them (they all banded together). They felt prices would increase, variety would decrease, and that it would have a negligible impact on family farmers. They suggested shifting the subsidies to different crops, but that would result in broccoli being fed to cows instead of corn…(Sarcasm). We talked about taxing bad foods and diverting the taxes into replacing subsidies so that those who choose to consume the bad food pay for it, not everyone. This money could be used for educational purposes. We talked about how to change things, and one student felt that people will choose to believe what they want or what is easier from opposing views and that we need something drastic to make a change.

3/8/12; 9:30

Today we discussed *Animal, Vegetable, Miracle*, which was led by [student]. We started class by watching an example video for the advocacy project, and I answered questions about the group project for the class. I informed them about the use of Natamyacin on cheese for mold growth retardation, which did not sit well with the class. Then we began discussing the book. I asked their overall impression of the book, and overall there was a good response. Many students felt this book was more positive,

relatable, uplifting and they like the stories and recipes. They liked that it showed a group effort and then they involved their kids. One student felt the book seemed almost magical or fairytale-like since the family moved from a desert to a lush farm. The first book theme we talked about was getting Agriculture education into schools. We watched a video showing this idea and then discussed it. Some students felt this kind of education was implemented or able to be implemented more easily in rural areas than metro areas. They felt ag education should be implemented in high school and that the information is relatable. They were unsure how helpful it would be in more urban area (lack of access to teach this) and that rural students would be more aware of food. Overall they felt the food system affects us all everyday so it should be taught in schools. They mentioned that some students look down on Ag Science, and that at UGA the Ag fraternity provides evidence of how much knowledge is necessary by managing their own property (while other Greek residents pay others to do it) and as a result the Ag frat has the best maintained yard. One student shared that they saw a school in ACC that has a garden that the kids manage. She told the class that they school uses the garden to teach about food and nutrition, and that they are looking for volunteers. Next we talked about the long term effect of agriculture education and how it could help rural health. It can help at a younger age to get the information as the students could incorporate what they learn into their life as they age. This could also be used to get more people to advocate for farmers. We talked about the vocabulary used in the book to describe farmers vs. city folk, and how lopsided the derogatory comments were. One student who grew up in an urban setting had rural friends and she stated that she was the different one, that they looked down on here. But in GA, the rural workers are looked down upon. Overall, the class felt it depended on where you lived as to how you valued farmers. The students thought these opinions of farmers may be hurtful, but they also felt that they probably do not care how they are perceived by others as they themselves

see others as “others” as well. One student felt they are probably more concerned with their lost freedoms to grow what they want because of the current agriculture system in the country. One student was frustrated by the divide and discrimination towards farmers, stating “each job contributes and is important so who are you to say any job is not important” She felt the cultural stigma was frustrating. People in the agricultural areas know their own farmers and have more respect for the job and lifestyle as a result; incorporating agriculture education into all schools could help spread this mentality. Next we discussed seasonal eating and asked the class if they thought our society could do this. One student stated she did not really react to this concept as she does not eat much out of season as it tastes bad. They did not think it would be easy to get the rest of the country on board because they do not even know what is in season, and Americans are all about instant gratification and they do not like change. It would take something huge to force Americans into adopting seasonal eating. One student stated she had not thought about it before but now seeing the benefits, she planned to push for it with her family. A student felt fruit would be the hardest to wait on as they rely on bananas, also stating that this would cut out exotics. They mentioned that we “seasonalize” processed foods “pumpkin lattes in the fall, eggnog in the winter” which they found ironic. The processed food industry capitalizes on seasonal tastes to promote their product but we do not do that with the whole foods we consume, as we would appreciate the whole foods more since they would taste better. One student felt eating seasonably would be feasible and easier than doing a solely plant-based diet. We discussed how this would require planning by canning and freezing food to ensure access to healthy produce described in the book. Finally, we discussed childhood diet-related diseases and how our current food system contributes to these conditions. We discussed how local and seasonal food could help change the current obesity rates. The students felt it was the responsibility of parents. One student described her childhood stating her parents made

sure they knew her friends, grades, activities, etc and that that is required in good parenting. Adding what is in the food the kids are eating is only natural. They discussed how many restaurants cater to the bad food for kids, talking about how bad the choices are on kid's menus. Overall they felt it boils down to the parents, that they need to know what is going on and promote a good environment for their kids, taking into account things like budget and food deserts.

3/8/12; 12:30

Today we discussed *Animal, Vegetable, Miracle*, which was led by [student]. I asked the class their thoughts on the book, and overall they liked the book. They liked the story component, and the included recipes. The first theme we discussed was the environmental impact of industrial food production, including the amount of fuel used, the increase in greenhouse gases, and how this method of farming is unsustainable. We talked about how expensive transport is, and how this was one of the driving forces behind the author's choice to live off the local land. We talked about how the true price of food is lost due to the political climate, which includes tax deductions for corporations to offset the expense of transporting food. This transfers the expense to the tax-payers, charging us for the food before we even get the food. Since gas prices have been increasing, soon the cost of food will equalize rising to it's true cost. Next we talked about marketing and ultimately the class felt parents need to parent their children better. They ultimately have control over what is purchased in the homes, so marketing to children should have less effect (if the parents supervise their kids and actually parent the kids). One student suggested labeling foods with images like found on cigarette packages, but the class did not think the labeling would be effective due to things like impulse buys. One student (a marketing student) stated that the fruit and vegetable industry needed to increase the positive marketing for fruits and vegetables; to beat the processed food companies at their own game. The class could only identify a few

produce products that are marketed to the point of recognition (Chiquita bananas, Cuties, Popeye spinach, etc). He suggested we use sex, puppies, and kids to promote the products. That is what the marketing industry does for other food products (Dolly Parton tomatoes). Another student suggested regulating commercials to ensure only truthful information is conveyed. We briefly discussed the comparison of food health effects with alcohol and tobacco, looking at instant effects vs. long term effects, and how there needed to be more positive advertising for produce. If health marketing is not effective, they could focus more on the environmental impact and the use of fossil fuels in industrial food production, ultimately persuading people to buy local food to reduce their environmental footprint. Finally, we talked about seasonal eating, and overall the class did not know what was in season. A few students shared their experiences growing up with local food, and how now they will not eat corn or tomatoes out of season because they do not taste right. A few other students reflected on recently noticing that tomatoes in the winter really have no flavor, but they were so used to eating them year round that they just accept the tasteless variety. I gave them a homework assignment to get two tomatoes in the summer, one from the local farmers market and one from the grocery store and do a side by side comparison and see firsthand how they are different.

3/20/12; 9:30

Today we started talking about *Slow Food Nation*, which was led by [student] and [student]. They started out by providing a brief background on Petrini and defining the slow food movement. The students then began discussing how hard this would be to implement in the U.S. and among college students. Americans are trained to grab and go. When we do not pay attention to what we are eating, it is hard to know how the workers are treated. If we look for things like free trade coffee, we pay more but can also know it was raised appropriately. Ultimately, if food is cheap, you should question how it was produced and where it comes from. Next, we discussed the concept of the

Gastronome, and overall they felt this was hard to implement as a college student. The students questioned what “our” national food is, and they only thing they could think of was taste tests with Coke vs. Pepsi. One student felt it was hard to accept pleasure is the most important thing regarding food, and felt this was an elitist mentality. She was annoyed throughout the book because not everyone can be an intellectual as those that are low income do not have the choice of eating high quality food (though they should). Another student saw this as a dying art and that the author romanticized food which was hard to relate to. They liked that he did not obsess about calories but do obsess about the taste (my impression was that the class did not seem to think they were worth the effort of good taste). Next we talked about production and the benefits of small scale production. We should train people to scale down consumption so production is reduced and the reliance on industrial agriculture is reduced as well. This would be hard to do in a capitalist society as businesses are promoted to grow so they feel a sense of urgency so how would they stay small. What is the threshold? Ultimately, we need training to eat less and eat seasonally while also having respect for food, but slow food may be hard to implement at this stage in their lives and in this country. Next, we talked about the pros and cons of globalization. They felt it was appropriate to trade raw materials that cannot be accessed domestically (coffee, spices, etc) but that it was asinine to trade whole products like cookies when a simple email containing the recipe would suffice. I asked them how they felt about the international perception of the US being identified by McDonalds and overall they were sad but they accepted it. We briefly talked about how the US food culture has food from all other cultures and a few students wanted to know if you could find this in other countries. Next we watched a brief video about the Edible Schoolyard and the class felt it was full of potential. They equated it to the White House Garden, and how both were beneficial to kids and learning from the gardens promoted life skills. I polled the class and asked them if they had a choice between sending their

kids to a school with an edible schoolyard versus one that does not (all other things the same), which would they choose and all of them would send their children to the school with the edible school yard.

3/20/12; 12:30

Today we started talking about *Slow Food Nation*, which was led by [student] and [student]. We started by talking about their reaction to the tulip-pepper growing exchange between Holland and Italy. The students were sad and disappointed that this is occurring. Why change something that is working so well. They could relate based on their experiences eating tasteless strawberries. They felt it was a waste of money, quality, and transportation costs and time and ultimately it is best to buy fresh and local. Next we talked about the edible school yard after watching a brief video clip. Some of the students had programs like this in their schools, while others did not. Those that had these programs said they were the "fun" classes in their schools, and participation was promoted with incentives so many students joined. They said these programs helped promote a sense of community with their peers and family, and they really felt this was beneficial. Gardening is seen as a dying art in this society, and programs like this could revive gardening. A few had home economics but the classes taught you to cook using mixes, not using whole ingredients. One student raised the point that the local climate could limit this type of program, and another student told the class about the school garden at Barrow Elementary in Athens. The current educational climate (teaching to the test) was seen as a potential barrier to implementing programs like this as making AYP was the most important. We moved on to talk about the health implications of Gastronomic eating, discussing the author's health problems. This led us to talk about moderation and mindless eating, and how we need to move towards focusing on quality not quantity. Next, we talked about the food being supplied to institutions like schools, hospitals, and prisons. They all agreed that schools should offer healthy food, and

hospitals should as well. Hospitals are places of healing and food can play a huge role in that. The class was divided about the food available in prisons. Some students were adamant that the prisoners were there for a reason, so they should get what we give them at the least cost to us. Other students felt that they are people too and we need to treat them as such. Engaging prisoners to grow their own food can be used as an incentive for good behavior, it can teach job skills, provide healthy food which could result in an increase in health and a decrease in health expenditures, etc. The debate went on for about 10 minutes and was very charged. This led to us talking about the food in nursing homes and sorority houses.

3/22/12; 9:30

Today we finished talking about *Slow Food Nation*, which was led by [student]. A speaker from the Ethical Choices Program came to talk to the class about sustainability, and she talked for the first 30 minutes of class. She started by giving us her background information and then stating that our food choices do matter. She told the class that she tries to leave as minimal of an ecological footprint as possible. The current industrial food system promotes deforestation because so much land is needed to raise cattle and to produce the feed necessary to raise the cattle. This is problematic as the tropical forests are the lungs of the world and all we are doing is harming ourselves. She went on to define slow food, giving examples of Good, Clean, and Fair. She talked about the sustainability issues surrounding animal agriculture, stating that 70% of the grain grown and 50% of the water used is for animal production. She suggested reading *Comfortably Unaware* which cites additional studies about the sustainability issues surrounding industrial agriculture. Next she discussed some of the ethical issues surrounding Slow Food, including will we be able to feed the world with Slow Food practices? She stated no. She stated Slow Food still promotes eating animals, and animal agriculture has one of the largest impacts on the environment so we should move more towards a plant-

based diet. Animal welfare is still an issue in Slow Food due to mutilations, disposal of unwanted animals, slaughtering, and speciation. There are also health issues related to eating animals, and she recommended that the earth can sustain a diet of 90% plant based foods and 10% animal based, stressing the importance of being a locavore. It is better to eat locally grown food than organic food that is shipped long distances. Lorena ended with time for a few questions, and then we moved into discussing the second half of Slow Food Nation. The first thing asked was weather slow food will make a difference, and ultimately the class agreed that even though it is not perfect, anything is better that the current system in place. The class also felt the idea was a luxury illustrating the financial limitations college students and others may have. Also, they may be lacking an understanding of what is good, clean and fair. They discussed how it is would be hard to get to those without basic nutrition information, bringing up Maslow's Hierarchy of needs. We then shifted gears and started talking about the principles of Slow Food. They liked the idea of knowing the origins of food, and the pride that goes along with making their own food. They talked about how they remember these meals more, post photos of them to Facebook, and want to share them more. Additionally, one student stated that when you know the history of your food and the amount of work that went into making it, you are less likely to waste it. I asked them to think about their breakfast and to try and trace the origin of all of the ingredients – this stumped them. Those that ate breakfast barely remembered what they ate. One student stated that she'd probable remember more of her meal if she prepared the food. She'd think more about it if she uses whole foods or the whole product. She gave the example of appreciating coffee more when you grind your own beans versus going to a coffee shop and ordering a cup of brewed coffee. You can connect with your food more when you see the whole product. The coffee comment lead us to talk about the benefits of free trade coffee, and how supporting free trade production helped with reducing slave labor used in coffee production. Next, we

discussed whether we should incorporate Slow Food teaching into schools. They were mixed about this. May felt only those passionate about food would consider taking the courses. They did not think this would be well received my most as it is not aligned with the fast pace of U.S. culture. They then shared personal examples of how hard this would be in their own lives. Mindful eating was brought up, and the class felt like it is a lost art. One student who was home schooled described her experience as being very much in support of slow food, while the others in the class described their experiences in school (bad food, short lunch breaks, long lines, etc). Overall, they felt our current culture is too fast and job demands will not slow down and two incomes are needed to make ends meet. I talked to them about my choices and how I know the financial implications of those choices (avoiding R1 schools due to high stress and lack of free time but also knowing this, results in less money and success). I told them planning for things like this now, and knowing what you want in advance can help guide the decisions you make and reduce the stress. They also talked cooking meals in advance for the week. Overall it was a very upbeat discussion!

3/22/12; 12:30

The speaker delivered the same lecture to this section of the course as she had done that morning. After she presented she joined the class in the discussion of *Slow Food Nation*, which was led by [student] and [student]. They started out by asking is gastronomy was a legit science and whether it should be taught at a University level. Students were on the fence about it, some felt they would take it if the course fulfilled a requirement, others thought it could be interesting. They then asked if gastronomy was the same as food Science, and the students were confused. Food science is more lab based and gastronomy is more subjective, so they were not sure. I told them it made me think of the scientific divide between qualitative and quantitative research. Both are valuable and can complement each other. I then asked them to think about Public

Health since it was made up of information from Biology, Psychology, Social Work, Chemistry, etc., and Gastronomy was developed from the same background. They seemed uncomfortable with that comparison, and did not seem to want to accept it. On student bluntly stated that gastronomy is a glorified hobby and no more. Next we talked about presidiums and eating as an agricultural act. They specifically asked what could be done in the U.S. like was described with the chickens in Italy (to promote their consumption, to revive the industry). The students suggested moving subsidies around, spreading them out to include fresh produce instead of mono-crops. It was obvious that what they did with corn backfired, so why not try a new strategy. They were asked if eating was an agricultural act, and again they seemed to struggle with the idea. Many students felt that because of the class they see it more as an agricultural act, but that they do not feel like a co-producer. One student who grew up on a farm could relate to the idea of being a co-producer. She suggested by going to farmers markets and joining CSA'a that others could connect on a deeper level as well. We then discussed bringing this idea into schools, and how teaching these ideas could raise awareness at an earlier age of the issues surrounding our food system. This class has caused students to reflect more on the food they are eating, to look at meat differently, and to be more mindful of their food choices. Overall, this results in feeling better. One student shared she only buys humanely raised meat, other students have begun eating less meat. We then talked about whether we could make food central again. Suggestions included spending more time with food, connecting with food and family by talking about it with them, paying attention to the region and focusing on that food (some were confused about US "food culture"), and by reprioritizing what is important in your life, and that work should not be the be all end all.

3/27/12; 9:30 & 12:30

Today I gave announcements during class, and gave them the opportunity to ask questions about the draft of the advocacy project which is due Thursday. I described an extra credit opportunity, and talked about the upcoming farm visit. Once the announcements were over, we watched *Fresh* for the rest of the class period.

3/29/12; 9:30

Today we began talking about *Food and Faith*, which was led by [student] and [student]. They began the discussion asking the students to think about how they look at food and what shapes their thoughts of food. Responses included society, their families, their current education (which has a significant impact now), and this course. Many students shared that they tell their families about what they have learned in college in HPRB courses and Nutrition courses, as well as this course specifically. Some students stated that their families have utilized some of this information, while others are resistant to being told to change their behaviors to include healthier options. One student said her parent has been told by his physician to change their behavior, and by his daughter, and he rebels against the recommendations, that are goes against his traditions. Next, they asked the class for them to define what food is to them. One student said food was a social thing, and that they only paid attention to food when they were in social settings; that it was a form of fellowship. One student related this to Gastronomy, stating it was an intimate experience. Another student shared how food was viewed at her church, that it is considered a “meal with Jesus” and that food and Jesus were often together and that ministry often revolves around food. This kind of ministry is intimate and deep. People “meet to eat” for ministry, feeding both the body and the soul which is overfilling. They talked about how churches have a weekly meal, which serves to bring people in and foster fellowship. They felt that lunches less more intimate than dinner. Next, we discussed the anthology layout of the book, and which parts resonated more with the

class. One student liked the gardens in town section, they liked that the book was not "preachy" and that is had a base in the Bible but was not in your face with it. They talked about food as a sacrament as described by the author, but they struggled to see it that way themselves. One student stated that Jesus was a sacrifice so we do not have to sacrifice animals any longer and they see the sacrament as a sign of grace. Eating should be an act of communion and blessing and people should be grateful. They discussed communion, talking about the difference between eating bread at dinner and at church and how they only difference is the setting but it is a sacrament at church and not seen that way at home. One student stated she did not think of sandwich bread as the body of Christ. She stated that thinking of it that way, that breaking bread at home would slow you down (which would be a good thing). Food provides life so if you begin to look at it differently, you can appreciate it more. Cooking as a form of meditation also allows you to appreciate it more. Next, we talked about where the joy of food comes from, and one student stated the amount of effort that goes into the food plays a role. In addition, the social aspect of food plays a role; many students felt it was not worthwhile to cook only for them, but they do like to cook for others because of the sense of fellowship it creates. Another student stated it is more worthwhile when others get to enjoy what they prepare. It is a way to share joy with others and your inner self gets to come out.

3/29/12; 12:30

Today we began talking about *Food and Faith*, which was led by [student] and [student]. They began the discussion, asking the students about their general thoughts on food and faith and if eating was a spiritual act. The class discussed how the Native Americans were so connected with the Earth and how all of their acts were spiritual. One student stated that they only think of it during Lent as a catholic, but others could see eating as a spiritual act. Each student had their own take on it, including being

thankful for the people that prepared it more than the food itself, thinking of food as nourishment for the body and faith as nourishment for the soul, that faith gives people purpose and they are thankful to God for the food. One student stated that as a Christian, they treat their body as a temple and food nourishes their body. The moderators then asked whether the class viewed food as a product of the Earth's fertility. Students responded that they say grace to give thanks and that they appreciate the fertility and the cycle of the earth and growing. Next they discussed food and love, and were asked to describe the best meal they ever ate and why. Students reflected on meals with family, often around the holidays. One student stated that sharing a meal with someone if sharing his or her life with them. The talked about passing recipes down through a family, and how they looked forward to special dishes being made when their families gathered. One student discussed how intimate a meal is when going out on a date. Discussing the meal is a way to get to know another person. Students reflected on how they learned values through food in their family. One student learned how to cook from her grandmother and her dad, and how these cooking lessons were a generational tradition. Another student was a latchkey kid and her mother left her detailed instructions daily of how to prepare food. This enabled her to have a breadth of knowledge of healthy cooking and a deeper connection with her mother since she took time to pass on information instead of having her reheat food. Next, the students discussed food as a sacrament vs. a desecration. Overall, there was a consensus that mindless eating that had little effort in preparation was less of a sacrament than a home cooked meal or healthy food. Fast food and unhealthy food was seen as a desecration. They felt that care should be taken in preparing food, making it more of a sacrament. Finally, we discussed what food symbolized. Students felt that before the class, they never really thought about food and religion, but now they can see the connection. Food is used to heal, people bring food when someone is ill or passes, bringing them comfort.

Food symbolizes caring for others. They talked about how churches provide food, not only to care for others but also to foster fellowship. Jesus' last event was sharing a meal together. Reflecting on all of this made them rethink the connection of food and faith. 4/3/12; 9:30

Today we began talking about *Hungry Planet*; *What the World Eats*, which was led by [student] and [student]. All of the students were present, though four students arrived to class late. The discussion opened with students reflecting on the book. Overall, they liked it; it was refreshing and not as heavy as some of the other books. They like the comparison of other cultures food to the United States, including the cost comparison and the related health implications. They looked specifically at Italy and the United States, and compared them. They felt the description of Italy in the book was accurate depending on where you go (tourist area vs. rural). They enjoyed the description of the multiple course meals, and how they seemed to value food. The discussed the smoking prevalence in Italy, and the manner in which they shopped for food (daily instead of weekly like in the US). They were surprised at how much time went into food, but saddened by the apparent shift that towards the US ways.

When we discussed the examples from the United States, they reflected how these examples compared to their own families. Overall, they did not feel this was an accurate representation of their family, but it could be for the region of the country that was being showcased. They felt these examples were sad, shocking, and gross. The abundance of fast food and processed food depicted was disturbing, but one student stated they all probably felt like that because of what we learned in this class. One student felt we needed to move back towards more developing countries that were depicted as they had more natural foods and whole foods. Students were asked to also choose one story on their own and share their reasoning. One student chose Guatemala because she was going there over the summer. Another student chose

Okinawa because her best friend lived there. Other countries chosen included Cuba, India, Egypt, and Germany. They compared the food consumption of each place to what they knew, and were surprised at how different the US was from other countries.

4/3/12; 12:30

Today we began talking about *Hungry Planet*; *What the World Eats*, which was led by [student] and [student]. All of the students were present and overall they like the book and felt it was an easier read. The discussion began with them reflecting on the changes in the global food system. They discussed acculturation of families in the United States and how there are generational changes in food preference. In addition, acculturation seems to promote less fresh food and more fast and processed food. They discussed how personal choices matter regarding health and food. They specifically looked at Australia and the United States. They discussed how far removed people are from food production, not realizing that tea comes from tea leaves, not tea bags. Until one student went to a U-pick farm, she did not know peaches grew on trees. They talked about food labeling and choices, and how some places do not have enough food to make healthy choices.

When discussing the US examples, they talked about government's role in promoting healthy food and increasing access to healthy food. They did not feel like government should support contracts with fast food companies and soft drink companies in schools as it is sending the wrong message. Students were asked to also choose one story on their own and share their reasoning. One student chose Germany because they liked the idea of primarily outdoor markets and the simplistic labeling for organic food. Other countries chosen included Egypt and Italy.

4/5/12; 9:30

Today we began talking about *Food Politics*, which was led by [student] and me. All of the students were present, but two students arrived to class late. The discussion

opened with students reflecting on the book. Overall it was not well received. They felt it was repetitive, boring, and not their favorite. The students discussed the history of the food pyramid and how instead of promoting what is good for health and nutrition, the food pyramid promoted what is good for the food industry. They discussed taxing bad foods and how the subsidies could be used to promote growing healthy food. They equated it to taxing tanning beds and thought it would be beneficial. They discussed the relationship between food companied and congress and how it has changed. One student stated "It is not okay to double-dip in ketchup, so why is it okay in politics?" There was a lot of discourse over this topic. They were split regarding lobbying, as some of the class supported it and others did not, depending on what was being lobbied. They felt it was a double-edged sword, promoting something like GMOs as they do allow for growing in drought climates but the health consequences are unknown. They felt there should be stronger lobbyists promoting healthy options. They discussed the irony that the larger companies have more lobbyists that can push their agenda (often the unhealthy food options) and the smaller companies have fewer lobbyists. The discussion leader spoke of her experience as an intern in government, and how lobbyists bring gifts to promote their products to politicians, influencing legislature decisions, and it created an uneven playing field, which was seen as unfair by the class. 4/5/12; 12:30

Today we began talking about *Food Politics*, which was led by [student] and [student]. All of the students were present. Overall, the class did not like the book, finding it boring. They discussed how misleading the food pyramid messages were and how people without the proper knowledge could be misled by the ever-evolving information. They felt the term moderation is too vague and that serving sizes needed to be defined more clearly. They said the nutrition information is too vague and equated that with the apparent conflict of interest of the USDA and the food industry. They then

discussed subsidies and the impact they have had on the food system. Generally, students understood why they were created and used, but a few students questioned whether we still needed them and if the farmers could succeed on their own. They suggested more participation in CSAs as those are another form of protection for farmers. One student said that companies are trying to make a profit and it is not their fault that they are contributing to the problem. The class did not agree, stating they could find ways to do better business. They used Trader Joe's and Whole Foods as examples of companies trying to make a profit while also promoting products that do not harm health.

4/10/12, 4/12/12, 4/17/12 - Group presentations

Students paired up with another classmate to create an advocacy video on a topic of their choice related to the class. Students presented information on the process of creating the video, their purpose for the topic and showed the video. After the video, a question and answer period allowed the class to ask for more information. In addition, students were invited to bring food to class to eat during the presentations. They were told to make sure the food fit within the themes of the class, so no high fructose corn syrup, no GMOs, no fast food, and they should try their best to find local and seasonal food. The students were asked to explain the food and why they chose to bring it. Many students made the food themselves; using ingredients that they got from the farmers market.

4/19/12; 9:30

Today in class, we watched the first half of *Our Daily Bread*. All but one student was present for class. One student asked at the beginning of class while I was giving announcements if the class would be taking the survey again like we did at the beginning of the semester. I responded that we would be taking a survey next week.

4/19/12; 12:30

Today in class we watched the first half of *Our Daily Bread*. All of the students were present for class. The students were engaged in the movie, asking questions when they did not understand something.

4/24/12; 9:30

Today in class, we finished watching *Our Daily Bread*. [Student] led the discussion on the video, and she brought bread to share with the class. All of the students were present for class and one student was 5 minutes late. The class discussed the meaning of the title and the purpose of the video not having any narration. They felt the title resonated worldwide and it makes you consider religion while watching the video. The video however presents a stark contrast between personal food environments and the industrialized food system where it was created. They also related the title to "earning dough" as the video showed workers earning money for their families. This lead them to discuss the common used of bread terminology, focusing on "breadwinners" who make the money to buy bread, and then "breaking bread" when eating it at the table.

They liked the video because you could form your own opinion of what was happening; there were no outside influences and a picture is worth a thousand words. They did have questions during the movie to clarify what they saw, but they liked that a narrator or music choices did not guide them as to what was good or bad.

They discussed the workers and how they looked lonely and disengaged, and how technology appears to be replacing manual labor. The baby chicks disturbed them, and hearing the cows cry out and fall to the ground after being bolted was unsettling as well. They did think this was a good way to have a glimpse into the workers daily activities to show how monotonous their work live were.

4/24/12; 12:30

Today in class, we finished watching *Our Daily Bread*. [Student] and [student] led the discussion on the video. All students were present for class, and two students was 10 minutes late. The class discussed the meaning of the title and the purpose of the video not having any narration. They felt that the video eliminated language barriers and presented a topic everyone can relate to since everyone needs to eat, however for those not in a class like this, they may not understand what was going on. The video was open for interpretation. They felt it showed the daily struggle and destruction involved in getting food on the table. The title was related to the Lord's Prayer, but one student mentioned how it appeared that God was removed from the landscape since man controlled the fertility and production of the entire food system. The class felt the director wanted to show where food comes from and what the workers endure to get it to people. They thought the director wanted to expose the factory farm system. They felt there was a contrast and relationship between the innovations shown and the cruelty imposed.

Many students were interested in what the workers in the video brought for lunch and what they did on their breaks. They were conflicted since many of the workers were eating while still wearing the blood soaked clothes they wore to work. Very little protective gear was used in many of the settings. Many of the workers appeared to be desensitized to the job, appearing bored and impersonal.

4/26/12

A graduate student administered the final survey in each of the classes. It took about 15 minutes to complete and all students were present for the survey. After the survey was completed, the students were given information on the focus groups which were to be held during the final exam period for the class. Students were given the chance to sign up for a time and to ask any questions.

APPENDIX F:

MID-SEMESTER EVALUATIONS

Mid-Semester Course Evaluations HPRB 5160

Do not write your name or 810# on this sheet. Please think about all of the things we have done in this course (videos, speakers, farm visit), and well as the speed of the class, organization of the instructor, usefulness of the information, and anything else that pertains to the class. Please answer the following questions. Use the backside if you need more space. Your answers will not impact your grade (they are anonymous).

1. Please describe the things about this class that are working for you.

- I really like that we are all about open discussion. It's nice for everyone to be able to put their own opinions in because it shows so many different views on a single subject. I also like that there is no pressure of testing or anything because by having discussions you can tell we do all the readings and watch the videos.
- What is working best for me is the way Mrs. Brace has coordinated the class. The interchangeable books and movies has really made this so enjoyable.
- It is teaching me to pick healthier choices and understand the truth to many topics I never really thought about b4. I love the discussion, it allows you to understand and see others viewpoints.
- The book are good. They are informative and pertain to my interests. Just are a little depressing. The speakers (especially Farm 255) was great, pertains to many interests.
- Discussing the issues, love all the material we have been reading thus far, love allowing the students to lead the discussions.
- I enjoy videos and not just books – provides a visual, like trips.
- I like when we view videos because they help with the understanding of what we're reading.
- Open discussion, no tests, journaling.

- I've learned SO much. This class has honestly changed my life. I've become a vegetarian and have some knowledge that I sometimes wish I didn't have.
- I like the syllabus (Schedule) of the class. I like how we discuss a book for a week and the next week we watch a video. I like the discussion-style of the class.
- The content is very interesting which makes it an awesome discussion class. The number of people in the class is small enough so everyone can feel comfortable to speak.
- I like the discussion and hearing about the different things going on but sometimes speaking up feels weird. Since this class is open, maybe take more consideration of people who are not Health Promotions.
- The book list is awesome. The assignments are up to date and varied. Also, the discussion component and eLC forums are good to get multimedia ideas.
- The class discussions and the environment you have created in the classroom have taught me so much about not only the health of my diet but also how to talk to people and discuss feelings about sometimes controversial topics.
- I absolutely loved the discussion based format of each class. This way of learning and teaching works much better than lectures. I also enjoyed the videos, both clips and movies that were shown. In addition, I liked reading the different books that were assigned.
- I love this class! The format is very comfortable and it is easy to talk and add in feedback. I have learned so much already and am so much more aware of everything I eat. Farm visit was great. Guest speakers are as well because it provides information regarding healthy choices for food in Athens.
- I like how it is more of a discussion based class. I like hearing people's opinions and also this way of teaching has taught me a lot.

- This has honestly been the most useful course I have ever taken, the group discussion setting has been very enjoyable and taught me a great amount about the food system.
- Talking in class, class discussions, and posting on eLC.
- I really enjoy the structure of this class. It not only allows me to voice my thoughts and opinions of the reading but also learn from so many others. The books and movies we watched have to me so much that I never knew.
- I like that we can demonstrate our knowledge in ways other than testing. Also I like how we are given an abundance of information and the class is set up to discuss it.
- I enjoy the discussion and the books and <u>especially</u> the documentaries since I am a visual learner.
- I am really enjoying this class and learning a lot. I really like the discussion aspect of the class. I gain a lot from it. I also like the speakers and farm visit.
- I love the discussion based idea. I feel like I learn more than reading and being tested. It gives is the opportunity to get other people's views. I also like the book-video rotations. Gives us time to read the books.
- I like having a reading schedule that is mixed with movies so you can read anytime in the 2 weeks leading up to discussion.
- I love the discussions. Ms. Brace has really created a positive and open atmosphere where people feel comfortable sharing. The book/wk and movie/wk are also running really smoothly. Guest speakers are awesome as well!
- I really love how we are accountable for the information through eLC and in-class discussions as well as journals. I think I have learned so much more from hearing other opinions from people and really analyzing my reaction to materials.

- Discussions, reading.
- I've learned a lot that I can share with others. It forced me not to remain ignorant of what I'm eating.

2. What components of the class could use improvement?

- Sometimes I feel like I am being rushed to read a book and cram all the info. I don't know if I am just a slow reader or what but I feel like sometimes I am stuck just skimming pages to get the last couple of chapters done.
- I like more guest speakers. Sometimes our thoughts are repeated and would and is always nice to get outside feedback/conversation.
- Maybe more time to read the books so possibly few book w/ more in depth discussions.
- I didn't expect that this was a discussion course before I signed up. I love the topics but I do find it hard to speak up. A suggestion for discussion may be a small group of 4-5. Also, we are given little time to read long books, which just means more skimming.
- Presenting the other side of own modern food system so we can look at several different views. Not a huge fan of responding to discussions on eLC but no suggestions.
- Sometimes I feel we are "beating a dead horse" – constantly talking about the same things. Readings feel rushed, lots to read in a short time.
- Maybe give more time to read the books, I know I'm a slow reader and have lots going on in other classes so it is sometimes hard to find time to read.
- There are a lot of books. Some weeks it is hard to get reading done because of other classes. Farm visit wasn't really helpful.

- Journals – maybe only require notes on discussion, not on books. Some of the books are very repetitive.
- The journaling requirements are a little strict. I would just want more leeway on how I organize and what I write in my journal. Even though I haven't missed a class, I feel the missed-class assignment is too much.
- As the course progresses it seems a lot of repeat of content. The consequence for missing a class should not be a 4-page single spaced paper. Maybe after missing 3 classes, students should be allowed to miss one class without severe consequences.
- Everything seems awesome to me, I like the structure.
- I feel like the discussions are sometimes forced. I think it is important to emphasize the discussion leaders as moderators not just experts on the book that happen to be asking questions. They should want the class to uncover something <new> and find <revelation>. If this means playing the devil's advocate then they should strive for that.
- My only complaint (if you could even call it that) is the submission deadlines at first were a little hard to follow. Maybe making one deadline for all submissions (i.e. Thurs night) w/ comments too would be easier for people to remember.
- I think a few books might have been slightly redundant so maybe one or two could be taken out and spend a little more time on some of the more complex topics of the class.
- None!
- Maybe some more space in between reading books. It can be a lot to read with other course work going on.
- It is sometimes difficult to complete the assigned readings on time.

- More time for the class to read the books and maybe more discussion.
- I feel that possibly a little more time b/w postings on eLC would be beneficial.
- I thoroughly enjoy this class. I wish we had more non-Health Promotion people in it though, because I think it could be eye opening for them as it has been for me.
- The speed of reading the large chapters can be too difficult when I have many other classes. I think allowing one absence should be allowed. Maybe more classroom activities to synthesize the material would be nice.
- Maybe not quite as many books. I feel like 2 days worth of discussion is not always enough time to get into everything.
- While the book-video rotation is good, I would like it if we had more time to discuss some books (ie Eating Animals). I would also like if we discussed more about what we are doing differently after taking this class.
- Blank.
- I think the timeliness for posting in discussions could be a little clearer because I keep getting confused.
- I think overall the class is great! One minor suggestion is to order the first few books on the reading list to the UGA bookstore. Buying books on a short time span can be stressful if the assignments are due the following week and having access to them on campus would help.
- We talk about corn a lot. I think we should have 1 book/move on corn, one on meat, and of on fast food industry and then everything else like farming, organic, etc. I think we need less books and more time to read them.
- Speed was a little fast for me. I had enough time to read the first half of the books, but I never really got to get a good grasp of the second half because I was rushing to finish. Order books at the library.

3. Does this class require you to think critically? Why or why not?

- Yes because I have never critically thought about my food and now that I am sort of forced to it has really changed my perspective.
- Def. You cannot come to this class without your brain on! Think outside the box and always challenge with questions.
- Yes because the discussion make you want to see other viewpoints and realize the real truth.
- Yes, first of all having discussions, but also that this stuff is so relevant for today and relevant for use. We have to think and relate it to our choices.
- Yes!
- Yes, sometimes hurts my head ☺ I see multiple sides of issues, where otherwise I might only see one.
- Yes, because you really have to know what you're reading and think about the way you feel.
- Yes. In order to write and discuss it is very important to think.
- Yes, the discussions are very thorough and always make me think. I have learned to question more and think critically about the food on my plate.
- Yes, I think about how I eat, policies, food industries, environment issues, animal rights, etc.
- Yes, because all of the discussion between people really makes you want to voice your opinion about all sides of the argument because these topics are very passionate.
- I do think critically. I want to make a change now event thought I feel I might have rejections. However number one is I will change MY family if that's the most I can do.

- Yes. By considering the views from all angles regarding food safety and production.
- Yes. I really does and it also challenges me to really utilize the information that I am learning and apply it to my own life.
- Absolutely. Especially when making/leading the discussion. You have to come up with thoughtful questions and do extra research. And when participating in the discussions you have to think through your responses.
- Yes, because it makes me think about everything regarding food, including how to fix the current problems.
- Yes, because during discussion the questions are open ended, so you have to think why you believe in this and think strategically on how to change it.
- Yes, the class make me evaluate my decisions regarding what I eat and the consequences of my choices.
- Yes, it does because some of the reading makes me think about where the food are coming from.
- Yes, everything is discussion based so I am constantly thinking critically.
- Yes, critically and quickly because you are allowed to discuss other people's opinions.
- Yes, because I am exposed to things I am normally not.
- Yes, the group discussions and discussion posts require me to think on my own. I am forming many new opinions and viewpoints b/c of this class.
- Yes, the discussions we have about the books and movies make us apply our health promotion knowledge about what we can do to make the health issues surrounding food more well known.

- Yes, the class discussions have really gotten me to think about what I think could be solutions for some of the problems the US faces with food, and where the root of the problem.
- Yes, because it is so discussion based. You really need to be able to boil down your thoughts and ideas to coherently express them in a group setting. We are constantly being challenged to take our ideas to the next step.
- Yes! It totally questions my everyday habits and why I haven't questioned them before. Extremely eye opening!
- Yes, because of the discussions posted on eLC.
- Yes and no. The stuff is there in your face so you don't really have to think about it, but then you have to think about what it means to you.

4. Would you recommend this class to your friends? Why or why not?

- YES!! I think this should be a required class and then we would have a much more informed and healthier culture.
- DUH! Mrs. Brace is a pleasure and this class amplifies the goal of PH (Public Health)
- Yes, it teaches you so much and the smaller environment is welcoming to be able to talk and share.
- YES, I will explain the course and definitely recommend it so they can learn more. These issues are important and important to me. A lot of work, so if they have time, do it.
- Yes!
- Yes, really opened my eyes to things I was ignorant to before.
- I would because I have already learned so many new things and I am glad I did change the way I look at food and what I eat.

- Yes, if they loved reading and writing.
- Yes, but I would warn them that it will take up a lot of time outside of class. Because it's an elective most people would not take it.
- Yes! This class should be offered on a permanent basis.
- Yes, very interesting and never boring. The amount of info I learned is one of the most amounts of any of my classes.
- Yes, it opens your eyes. It ends the out of sight out of mind.
- Yes, because it makes me more aware of issues pertaining to food. Enlightening.
- Absolutely! Love this class! Awesome teaching style and the material covered is really relevant to everyday life.
- Yes, definitely! Everyone need to be more aware of what is going into our bodies and learn more about the food system because this is part of our daily life!
- Absolutely Yes! Because you learn so much and the reading material is incredibly eye opening. It really makes me take a step back and look at the food I am eating and where it came from.
- Yes I would because this class has taught me more than any other and changed my views for the good. It has gotten my parents to change from what I have told them.
- Definitely. Like I said, I have learned more in this class than any other courses.
- Yes, I think they would be interested in what they learn from this class.
- Yes, this class has been one of the best classes I've taken at UGA. I can apply it to my life!
- Absolutely. I think it is a topic we should all learn about.
- Yes, but I would say there is lots of reading/ especially during midterm time.

- Yes. I am learning so much and enjoying the class. I am much more aware and think it would be beneficial for anyone to take.
- Yes. It is a very informative and fun class. I enjoy learning and discussing this topic because we do not really have this option in other classes.
- Yes, I think the discussions are great. I like the format of reading a book and discussing it each week and the material has been very interesting.
- YES! So informative and educational. Everyone should know this info. Given in an interesting and unique way.
- ABSOLUTELY! Such an important and somewhat overlooked.
- Yes, b/c I think it will make them a more aware consumer.
- Yes, people will remain ignorant and without it, but I hate discussion based classes.

5. Do you have any additional comments or thoughts?

- Overall love the class ☺
- Thank you for your caring and for all your effort! Rare to have a teacher like you!
- Thank you for your hard work and dedication you put into class!
- Informative class, relates to my interests.
- One of my favorite courses, very interesting every day!
- More class trips –actually getting out there. I liked the organic farm and possible pig trip. I wish the organic farm guy didn't talk so long about fertilizer – SHOW US STUFF!
- I think you are a great teacher and I love the class.
- Just want to make sure grading is fair. Some people never talk in class or post correctly to eLC (it's not that difficult). My partner also wasn't helpful when we lead discussion.

- Blank.
- I really enjoyed going to the organic farm and listening to the guest lectures.
- Blank.
- More visitation to farms. Do out of the box type of things too because this is a touchy subject ppl need the hands on.
- More multimedia. More debates about material to strengthen knowledge of entire issue. Avoid redundancy/reiteration.
- If you're not planning on being a teacher , you should re-evaluate your plans! You have a real gift of connecting with your students. I'm so sad this class is over in a few short weeks.
- This should be required for all Health Promotion majors!
- Great Class!
- This should be more than a special topic and become a real class every semester.
- You are a great and organized professor and I love this course!
- I think this is an overall great class. No changes.
- I look forward to coming to this class!
- I would give opposing sides, like FOK (Forks Over Knives)
- Blank.
- Blank.
- GREAT CLASS! Please offer it again! It is very valuable. Make it more well known and campus-wide. I think when people see the book list and get scared but it is really not that hard. Ample time to get the readings done.
- I really enjoyed the trip to the farm and the guest from Farm 255.
- Love this class! Look forward to it ☺

- GREAT CLASS! Please offer every semester.
- Instead of having responses due by mid-Monday, I think it should be due by when class starts.
- Blank.

Thank you!