

OUTCOMES OF KNOWLEDGE, EMPATHY, AND ACTION FROM A FRESHMAN
SEMINAR ON WORLD HUNGER

By

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(Under the Direction of Mary Ann Johnson)

ABSTRACT

The purpose of this study was to explore the impact of a freshman seminar about world hunger on student learning, empathy, and action towards hunger. Study participants were freshmen at the University of Georgia (N = 30 and 67% female). The educational intervention, a 15 week freshman seminar conducted in the fall semester of 2010 entitled “FRES 1020: Let the Big World Eat,” met once a week for 60 minutes. Evaluations included a multiple choice pre-test/post-test to assess knowledge, short answers to assess knowledge of domestic hunger organizations, a short answer question to assess knowledge transfer, Likert scale pre-test/post-tests to assess empathy and activism orientation, a frequency scale to assess actions taken, and an informal qualitative analysis of written hunger activity responses. Following the seminar there were statistically significant increases in both knowledge and actions taken and a positive significant relationship between knowledge scores and knowledge transfer. Hunger activity responses revealed positive trends in empathy and willingness to act. These results provide encouraging data for the development of future courses for undergraduate students to improve their knowledge and action toward hunger-related problems.

INDEX WORDS: World Hunger, Hunger Education, Nutrition Education, Undergraduate Education, Knowledge Transfer, Empathy Scale, Activism Orientation Scale (AOS), Science Technology Engineering and Math (STEM)

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CHAPTER 1

INTRODUCTION

In 2000, 189 countries were represented at the UN Millennium summit. During the summit, eight time-bound targets known as the Millennium Development Goals (MDG) were adopted. The number one MDG was eradicating extreme poverty and hunger; specifically halving hunger rates between the period of 1990 and 2015 (UN, 2010). Unfortunately, the Food and Agricultural Organization of the United Nations estimates 925 million people were undernourished in 2010, which outside of 2009 is more hungry people than any point since 1970 (FAO, 2010). Hidden hunger, the lack of one or multiple micronutrients, affects more than twice this number (UN, 2007). Hunger also exists in many developed countries. The Household Food Security Survey showed that 14.7% of U.S. households were food insecure at some point during 2009 (Nord, 2010; USDA, 2000).

However, there is reason to think hunger can be eradicated. Many believe hunger is not a problem of a worldwide food shortage, but of poor distribution. Indeed, few places currently under-produce to the point of caloric deficiency, and even though much of the morbidity related to hunger results from micronutrient deficiency, many cheap and effective methods of supplementation have been developed (Sanchez, 2002). In the U.S., 57% of food insecure households participated in one of three major federal food assistance programs (Nord, 2010). There are also many around the world working for non-governmental organizations or volunteering for food banks that make fighting hunger a priority. Until distribution and access problems are solved, new techniques to help better nourish the world's citizens must be researched. Universities play an integral role not only in current research, but in educating the

next generation of nutritional scientists, food technologists, agricultural scientists, public health specialists, chemists, economists, journalists, and policy makers to understand and act to end this global burden.

Universities are taking steps to educate that next generation. The University of Kentucky has a three course track that addresses food production, the influence of poverty and affluence on diet, and other information pertaining to world hunger (University of Kentucky, 2009). Harvard has a graduate level workshop where students explore in depth the complexities of world hunger and food policy (Harvard, 2010). However, to my knowledge, no previous studies have formally reported an evaluation of student outcomes in a course on world hunger.

Students should come away with more than a list of memorized facts after a course is completed. Ideally they should be able to apply concepts learned in the past to generate new solutions. Persuading students to participate in activities that address hunger issues may require increasing empathy towards those that are suffering by illustrating on a more personal level how a micronutrient deficiency or poor access to pre-natal care might impact lives. Creating an environment conducive to significant learning experiences requires a lasting change that is important in the learner's life (Fink, 2003).

The current study is centered on a freshman seminar that was developed in the Department of Foods and Nutrition at the University of Georgia to teach nutrition-related issues in world hunger entitled "FRES 1020: Let the Big World Eat." It was presented during the fall semester of 2010 and included a variety of educational experiences. The study measures the impact of this freshman seminar about world hunger on student learning, empathy, and action towards hunger issues. Assessing these areas allows for a broad picture of the effects the seminar had on students. This study provides insights into the development and implementation of a

seminar on world hunger and the results will aid future attempts to teach similar courses so future generations might be motivated to devote time as volunteers and/or pursue careers in any number of fields that are working to alleviate world hunger.

Chapter two is a review of the literature outlining the modules presented during the seminar, past courses taught on the topic of world hunger, the theoretical basis for study measures, and the study hypothesis and specific aims. Chapter three is a manuscript to be submitted to a journal. This chapter includes the methods, results, discussion of outcomes from the seminar, and data tables. Chapter four presents a summary of major findings and conclusions for this study.

CHAPTER 2

LITERATURE REVIEW

The following literature review offers a summary of information presented during the seminar, the constructs and measurements used to evaluate the students, and the study hypothesis and specific aims. The review begins with the current state of world hunger including international and domestic statistics, how hunger is measured, and review of the topics covered in the seminar. Next, the theoretical constructs of the evaluation are defined and explained. Finally, the study rationale, research question, hypothesis and specific aims are summarized.

Review of topics presented during the seminar

International hunger overview

Beginning to understand the problem of international world hunger means becoming familiar with the language and the magnitude of problem. Worldwide there are about 7 billion people and of those 1 billion suffer from malnutrition (US Census Bureau, 2011; FAO, 2010). Malnutrition is defined by the UN World Food Programme as “a state in which the physical function of an individual is impaired to the point where he or she can no longer maintain natural bodily capacities such as growth, pregnancy, lactation, learning abilities, physical work, or resisting and recovering from disease” (WFP Hunger Glossary, 2011). Malnutrition includes issues such as underweight, obesity, total caloric deficits, and micronutrient deficiencies. Ninety-eight percent of the world’s malnourished people live in developing countries and the majority of

these live in the rural areas, although urban percentages are on the rise (WFP FAQ, 2011). The four leading micronutrient deficiencies are iron, iodine, vitamin A, and zinc. These and other deficiencies lead to respiratory diseases and dehydration, the two main vehicles by which hunger and malnutrition eventually cause death (WHO, 2008).

Hunger is measured internationally in several different ways, leading to different prevalence estimates. Stunting, which in 2005 affected almost a third of children worldwide, is measured as low height-for-age and indicates the prevalence of chronic hunger (WFP Hunger Glossary, 2011). Wasting is calculated as low weight-for-height, reflects a “recent and severe process that has led to substantial weight loss,” and is often used in emergency situations (WFP glossary, 2011). Finally, undernourishment describes a hypocaloric state, while underweight describes low weight-for-age (WFP glossary, 2011). All of these terms are used as proxies to measure a scourge that has been a focus of the international community for many years. It is no wonder that reducing hunger and poverty rates by half is goal number one of the United Nations Millennium Development Goals (UN, 2010).

Hunger in the developed world: Hunger measures in the United States

Hunger is not just a problem in the developing world. Knowing the facts about hunger domestically and in other developed countries is imperative to understanding the many forms of hunger in the world and in illustrating the complexity and size of the problems we face. Hunger in the United States is calculated using a measure of food insecurity defined as a “limited or uncertain availability of nutritionally adequate and safe foods or the ability to acquire acceptable foods in socially acceptable ways” (USDA, 2000, p. 6). Domestic food insecurity is measured using a questionnaire that asks respondents to agree or disagree with statements such as “we

couldn't afford to eat balanced meals" and "in the last 12 months, did you lose weight because there wasn't enough money for food?" (Nord, 2010). The Household Food Security Survey showed that 14.7% of U.S. households were food insecure at some point during 2009. This included 5.7% that were very food insecure, meaning "the food intake of one or more household members was reduced and their eating patterns were disrupted at times during the year because the household lacked money and other resources for food" (Nord, 2010; USDA 2000). The highest percentage of food insecurity in a demographic subgroup was 36.6% among households headed by single women. These numbers were basically unchanged from 2008 (Nord, 2010).

In 2009, 57% of food insecure households participated in one of three major federal food assistance programs: Women Infants and Children which provides education, support services, and food vouchers to mothers during pregnancy through birth until the child is five; the National School Lunch Program which provides free and reduced price breakfast and lunches at schools nationwide; the Supplemental Nutrition Assistance Program, formerly the food stamp program, which provides food vouchers for those below certain state-determined percentages of the poverty level (for Georgia this number is 130% of the national poverty level) (Nord, 2010; Schneider, 2010). Other federal nutrition programs include the Commodity Supplemental Food program and Meals on Wheels (also receives state, local, and private funding). There are also many non-governmental organizations, faith-based or otherwise, that work to reduce hunger domestically including food banks and homeless shelters.

Hunger in the developed world: A closer look at food security in developed countries

Food insecurity in developed and developing countries can be incredibly similar. A study in Minnesota showed that children from households with very low food security were twice as

likely to have iron deficiency anemia, one of the most prevalent nutrition-related diseases worldwide (Park et al., 2009). However, food insecurity in developed countries is defined differently than in the developing countries because it encompasses an often overlapping but distinctly different subset of issues. A study of Mexican five year-olds living in separate immigrant communities in California and Mexico analyzed food insecurity status as well as food and nutrient intakes. The Mexican food insecure population ate less total calories and less total fat than the food secure population; however, the opposite trends were seen in those living in California (Rosas et al., 2009). Higher total fat and caloric intake are associated with many non-communicable diseases such as hypertension, heart disease, and diabetes, thus food insecurity in the US may exacerbate common chronic health problems.

Food insecurity itself has a positive association with diabetes in developed countries. A Canadian study concluded that 9.3% of the diabetic population was food insecure versus 6.8% of the non-diabetic population (Gucciardi et al., 2009). The same study also found that among people with diabetes, those who had a lower opinion of their own general health had an increased likelihood of being food insecure and were three times more likely to report unmet health care needs (Gucciardi et al., 2009).

Individuals with diabetes, as well as those who are food insecure, have also been shown to suffer from mental health problems (Grigsby et al., 2002; Melchior et al., 2009). A British study conducted between 1999 and 2006 examined the relationships among income, food security, and maternal and child mental health issues. The study found that families having any food insecurity were 2.5 times more likely to have children with behavioral problems. The same study also found that at all income levels, depression, maternal depression, alcohol or drug-related problems, and domestic violence were close to twice as likely in households that were

ever food insecure (Melchior et al., 2009). While most of those who are food insecure in developed countries probably don't have to worry about getting enough calories day after day, food insecurity clearly takes a toll on quality of life no matter what corner of the earth one calls home.

Iodine deficiency and Guatemala

Ensuring adequate iodine status in the vast majority of developing and developed populations is both cheap and easy in theory. In practice, high rates of iodine deficiency worldwide greatly reduce the productivity levels and mental capacities of many people. The story of Guatemala and iodine deficiency is one of progression followed by regression that showcases the intricacies of enforcing fortification legislation and the issues developing countries face as they try to improve iodine status on a national level.

An important component in the development of brain, heart, kidney, pituitary gland, and muscle tissue, iodine is essential for the synthesis of thyroid hormones (NAS, 2001). It is estimated that 2 billion people have insufficient iodine intake worldwide and deficiencies lead to not only death but impaired cognition, cretinism, and goiter (Zimmerman, 2008). In fact, a meta-analysis concluded that iodine deficiency alone lowered mean IQ scores by 13.5 points, which is almost a whole standard deviation on the IQ scale (Bleichrodt and Born, 1994). Low iodine status is seen in both developed and developing countries. A 2009 study in New Zealand found that school children in a major city were in the range of mild iodine deficiency. At the end of a 28 week supplementation period, the intervention group significantly improved on cognitive tests compared to the placebo group (Gordon et al., 2009). The recommended intake according to the International Council for the Control of Iodine Deficiency Disorders is 90 $\mu\text{g}/\text{day}$ for those under

age 7 years, 120 µg/day between the ages of 7 years and 12 years, 150 µg/day for anyone over 12 years, and 200 µg/day for pregnant women (ICCIDD, 2009). Natural dietary iodine is found mostly in seafood such as seaweed, fish, or shellfish. Fortification of salt or water is often used to ensure populations maintain proper status. Although salt was once required to be fortified with iodine in the U.S., this is no longer the case as high amounts are present in foods that the general population tends to eat regularly such as dough conditioners used during the bread making process (NAS, 2001). Yearly potential losses attributable to iodine deficiency in the developing world before iodization are \$35.7 billion and the worldwide estimated cost of salt iodization is between 2 and 5 cents per child per year. Unfortunately this 71:1 benefit to cost ratio remains inadequately addressed (Zimmerman et al., 2008).

Goiter prevalence (a proxy for severe iodine deficiency) in Guatemala had been reduced from 38% in 1952 to 5% in 1967 with 90% of the country's iodized salt coming from one production facility (Dary, 2004). Even though Guatemala made the fortification of salt with iodine mandatory in 1954, decentralization of salt production led to increased goiter rates. After the destruction of these salt fields to make room for a shipping port in the late 1970's, goiter prevalence had rebounded to 11% by 1979 and 20% by 1987 (Dary, 2004). More recently, a 1998 study found Guatemalan salt samples to have some of the highest concentrations of impurities, and many of the standards such as proper labeling, storage, and fortification techniques were not regulated strictly enough to ensure responsible industry practices (Stewart et al., 1995). Although it remains one of the easiest ways to reduce the effects of malnutrition, Guatemala and many other countries continue to struggle with maintaining a high prevalence of iodine adequacy. Topics emphasized during the seminar concerning iodine deficiency were

fortification, quality control, the cost benefit ratio of iodine fortification and supplementation, and the impact a single micronutrient can have on total cognitive capacity.

Iron deficiency and anemia in India

The incredibly high global rate of iron deficiency makes it one of the main focuses of many malnutrition initiatives. Iron's role in maternal and infant nutrition cements its place as one of the most important essential minerals. The story of iron deficiency in India showcases an overwhelmingly deficient population not only because of poverty but also because of cultural practices and beliefs that hinder adequate iron status.

Iron is a constituent in many enzymes and proteins that are essential to life. It is integral in cell differentiation processes as well as oxygen transport in the body and into cells (NIH, 2007). The dietary reference intake for iron is 11 mg/day for infants, 7 mg/day for children 1 to 3 years, 10 mg/day for those 4 to 8 years, 8 mg/day for those 9 to 13 years, 11 and 15 mg/day for males and females 14 to 18 years, respectively, 8 and 18 mg/day for males and females 19 to 50 years, respectively, and 8 mg/day for adults over the age of 51 (NAS, 2001). Iron is found in the diet in two distinct forms. Heme iron comes from animal sources and is absorbed more efficiently in the human body than non-heme iron, which comes from plant sources. While nearly all animal proteins (excluding eggs) are sources of heme iron, good sources of non-heme iron are lentils, beans, dark green leafy vegetables, and fortified grains (NIH, 2007). The most common morbidity associated with iron deficiency is iron deficiency anemia, which presents as low blood hemoglobin concentrations and low numbers of fully functioning red blood cells. Morbidities include dizziness, shortness of breath, headache, pale skin, cold extremities, chest pain, arrhythmia, and eventually mortality. Iron deficiency is the most prevalent nutrition

deficiency in the world, affecting one-third of the global population and 40-60% of children ages 6-24 months. If this worldwide deficiency was corrected it could raise national productivity levels up to 20% (TMI, 2004).

Iron deficiency along with folate deficiency, malaria, and parasite exposure are the main causes of anemia in India (Kalaivani, 2009). Iron absorption across the Indian population is impaired not only by low intakes of heme-iron, but high intakes of foods that inhibit iron absorption including phytates and calcium. Phytates are compounds found in coffee, tea, wine, certain vegetables, herbs and spices. For instance about 8 ounces of black tea can inhibit non-heme iron absorption by about 50% even when ingested one hour after consuming the meal (Brun et al., 1989; Sharma, 2003). These inhibitory food patterns are seen across all socioeconomic statuses and in most regions of the country. While dietary education is key to decreasing iron deficiency, other methods are being tested. In a two month period, between 60% and 90% of children given a powdered dietary iron supplement in sprinkle form that was culturally acceptable achieved adequate iron levels (Hirve et al., 2007; Zlotkin et al., 2004). Biofortification methods that increase iron content in rice and wheat varieties are also being employed in attempts to introduce culturally acceptable ways of decreasing deficiencies (Nestel et al., 2006). These three strategies represent efforts that take place in all corners of the earth in various disciplines to combat not just iron deficiency but many of the micronutrient deficiencies that are holding back much of the developing world. Topics emphasized in the seminar concerning iron were bioavailability, biofortification, the magnitude of global anemia and iron deficiency prevalence, and ensuring that solutions to this form of hunger are culturally acceptable.

Vitamin A deficiency in Kenya and Mozambique

Vitamin A was chosen because it is a major focus of programs to reduce micronutrient deficiency in the developing world. Kenya and Mozambique were profiled because they are in sub-Saharan Africa and represent some aspects of failure and success in ensuring adequate vitamin A status. Vitamin A is found in many different chemical forms and foods, and plays a role in vision, bone growth, reproduction, and cell growth where it promotes healthy surface lining along the gastrointestinal tract that keeps potential bacterial infection at bay (NIH, 2006). The dietary reference intake for vitamin A for children 1 to 3 years is 300 µg/day, children 4 to 8 years is 400 µg/day, males 9 to 13 years is 600 µg/day, males 14 years and above is 900 µg/day, females 9 to 13 years is 600 µg/day, and females over 14 years is 700 µg/day (770 µg/day for pregnancy, 1,300 µg/day for lactation) (NAS, 2001). Vitamin A is found in the diet as preformed vitamin A, which is absorbed as retinol, or as provitamin A and carotenoids that are converted to retinol in the body. Good sources of preformed vitamin A include beef and chicken liver. Good sources of the provitamin form are orange and red fruits and vegetables, as well as dark leafy greens (NIH, 2006). Morbidities associated with vitamin A deficiency include night blindness and reduced immune function. A deficiency of vitamin A can be caused by poor dietary intake or poor zinc intake as zinc is needed to make retinol binding protein which transports vitamin A. Poor immune function can lead to gastrointestinal infection causing diarrhea which exacerbates the deficiency as poor absorption follows (NIH, 2006).

Kenya's child-under-five mortality rate is 121 per 1,000; this is partly due to a vitamin A deficiency rate of 84% in children under six. Kenya's partnership with the Micronutrient Initiative has aimed to boost coverage of vitamin A supplementation programs, bring more vitamin A-fortified products to market, and introduce new vitamin A-rich foods into the diet

(TMI, 2007). A bit further south in Mozambique, people in a resource poor area were introduced to and cultivated the orange flesh sweet potato that has high amounts of β -carotene, a form of provitamin A. After two years, the rate of deficient children in the intervention group had dropped from 60% to 38%, whereas as the control group remained almost constant at around 53% (Low et al., 2007). Other programs that partner immunization campaigns with vitamin A supplementation help to decrease deficiency; however, food-based approaches remain the best models of sustainable, culturally sensitive, and financially viable methods of fighting micronutrient deficiencies. Topics emphasized in the seminar included cultural competence, the role of non-governmental organizations in hunger, cultural competence, and using nutritional status of children as a national health indicator.

Maternal and infant nutrition review

Millennium Developments Goals 4 and 5 deal specifically with child and maternal health, a clear indication that these two subjects are of the utmost importance to effective global development (UN, 2010). Assuring adequate nutritional status is essential to the health of mother and child and incorporates many of the strategies by which hunger and food insecurity are addressed worldwide. Topics emphasized in the seminar include promoting education, gender roles in developing countries, highlighting the crucial period of life between birth and two years of age, and related topics summarized below.

The period between conception and the age of two is arguably the most critical time in a person's development and nutrition plays a critical role in pregnancy and lactation; processes that require adequate caloric intake and proper micronutrient nutrition. It is well documented that during periods of starvation fertility is lowered due to cessation of ovulation, reduced sperm

production, loss of libido, and other stress responses. When malnourishment is chronic and intake exceeds starvation levels, there is little relationship between nutritional status and fertility (Menken et al., 1981).

In the United States, the 2010 Dietary Guidelines for Americans recommend supplementing folic acid for women who are capable of becoming pregnant and iron for those are capable of becoming pregnant, pregnant, or lactating (USDA and USDHHS, 2011). Adequate iron status is important to prevent anemia, which is a major cause of maternal mortality during delivery and folic acid is essential in prevention of neural tube defects (LINKAGES, 2001). Other important micronutrients during pregnancy and age two include vitamin A for cell growth and division, calcium and vitamin D for bone and teeth development, zinc to prevent stunting, iodine for mental development, and vitamin B12 for red blood cell production and intellectual development (LINKAGES, 2001). Micronutrient deficiencies can increase risk of low birth weight, pre-term birth, fetal death, and maternal premature rupture of membranes (LINKAGES, 2001).

Breast milk is the optimal nutrition source for newborns up to age 6 months and breastfeeding should be strongly encouraged. After the first six months, complementary foods should be introduced including iron-rich foods (LINKAGES, 2001). Breast milk serves as the baby's first immunization and breast fed babies are at lower risk for respiratory infection and infection from diarrhea than those fed other foods (NIH, 2009). Breast milk volume is related to infant demand and not necessarily to nutritional status with larger infants having a higher demand for milk and the mother in turn responding with higher output (Emmett and Rogers, 1997). Total calories in breast milk vary from woman to woman due to milk lipid concentrations (WHO, 2002). Lipid levels vary depending on time of day, infant age and associated caloric

requirements, maternal adipose status, and maternal dietary intake (Emmett and Rogers, 1997). Carbohydrate concentration does not seem to be affected by nutritional status of the mother; however, studies have shown contradictory results on the effect nutritional status has on protein concentrations (Emmett and Rogers, 1997). Micronutrient content of breast milk varies with respect to maternal nutritional status. In general vitamins tend to be more sensitive than minerals (NAS, 1991). Allen groups thiamin, riboflavin, vitamins B-6 and B-12, vitamin A, and iodine as "priority nutrients for lactating women...based on the fact that low maternal intake or stores reduces the amount of these nutrients in breast milk" (Allen, 2005). Breast milk is viewed as such an important source of nutrition for newborns in the developing world that risk of passing HIV through the breast milk is not seen to outweigh the benefits during this critical period (LINKAGES, 2001).

Improper nutrition can lead to weakness in mothers, growth retardation and low IQ in infants and, in mother and child, low immunity, anemia, and even death. Infant mortality is an important measure of national health status (LINKAGES, 2001). In 2008, Afghanistan's rate of deaths in children <5 years was 257, compared to 17 in Mexico and 7 in the US. This number not only reflects efficacy of national healthcare, but in these examples, political unrest (Lancet, 2010).

Nepal's health system

Much of the information presented in the seminar elicited negative emotions with constant reminders of how far much of the world is from food security. Presenting a positive example like Nepal, a country that successfully implemented policies to help make substantial

gains towards better health, helped to balance the emotive spectrum of the seminar. The focus of this lecture centered on the issues discussed below.

Nepal is a mountainous landlocked country in South Asia with a total population of 29 million, 83% of which live in rural areas. In 1990 the government moved to a multiparty democracy system; however, six years later, Maoist extremists started an insurgency that would last ten years (CIA, 2009). Although there are many examples of health indicators plummeting during times of political unrest throughout the developing world, Nepal actually made some incredible gains during this period.

Between 1951 and 1991, Nepal drafted periodic development plans every five years culminating in 1991 with the establishment of the Ministry of Health and the Department of Health Services. The goal of these agencies was to generate a hierarchy of medical services ranging from the central government to village level community clinics with an emphasis on decentralization of medical care and mobilizing communities to be more self sufficient (HMG/MoH, 2001). Decentralization in particular empowered local communities including minority groups to make decisions based on their specific area needs (Houston, 2009).

In 1988 began the formation of the Female Community Health Volunteer (FCHV) program in order to improve community involvement. This program was an integral part of insuring quality medical care during the political unrest. FCHVs act as voluntary health educators, promoters, referral agents, and community based service providers, providing a link between the community and large primary health centers. They promote the adoption of preventative practices and play a role related to family planning, maternal/neonatal health, and child and infectious disease health (New ERA, 2008). In short, these nearly 50,000 women, who volunteer on average 8 hours per week and span the socio-economic, political, and religious

continuum, are on the front lines of Nepal's public health and medical care. FCHVs are responsible for the biannual vitamin A supplement program. This program reaches 3 million Nepali children and provides 98% coverage of children under 5 in all districts (USAID, 2009). In 2001, de-worming was added to the vitamin A distribution at no added cost. In one year, anemia in the target population was reduced 77% using a medication that had been manufactured in Nepal (WHO, 2002; 2005).

The FCHV program is successful because the benefits are tangible (Houston, 2009). They were able to see health improvements during political turmoil because those on both sides of the battle knew the people would stop supporting a political organization that tampered with this invaluable health care resource. These programs have afforded accelerated improvements to Nepal because they were developed to service the different needs of the people, an important tenant of any successful development plan (Houston, 2009).

Review of the green revolution and trade

A discussion of world hunger would not be complete without a discussion of the green revolution. This period gave birth to the agricultural techniques that helped drastically reduce the global burden of hunger. The focus of this part of the seminar revolved around the issues discussed below.

As the first half of the twentieth century came to a close, populations were growing at a rate with which agriculture could not keep up. In 1944, Dr. Norman Borlaug began researching methods to increase wheat yields in Mexico (TRF, 2010). He worked to breed varieties that could be planted closer together and yielded more wheat per stalk. To combat the resulting increased stalk weight he bred wheat with shorter stalks while coping with disease by crossing

these with breeds that were resistant to strains such as wheat rust. This increase in the use of high yielding, disease resistant plant varieties coupled with more fertilizer use and better management practices is termed “the green revolution.” By 1956, Dr. Borlaug had developed more than 40 high yielding, rust-resistant strains (TRF, 2010). In 1960, Dr. Borlaug began training Asian wheat scientists in Mexico and in 1965 he arranged for 450 tons of semi-dwarf wheat seed to be imported to India and Pakistan (TRF, 2010).

As countries realized the benefit of these new varieties, they began financially supporting their agricultural sectors. Successful implementation of these new methods required consistent water in the form of irrigation, advanced management practices, such as the use of pesticides and artificial fertilizers, and the research of people like Dr. Borlaug to discover higher yielding, more resistant varieties that took advantage of this increase in resources focused on agriculture (Hazell, 2009). Success of the green revolution was seen in both developed and developing countries and it fueled economies worldwide. A 1982 Indian study showed that a 1% increase in agricultural sector growth rates equaled a 0.5% increase in industrial output and a 0.7% increase in national income growth (Hazell, 2009).

Today’s developing nations continue to reap the benefits of the green revolution by subsidizing fertilizer and high yield seed. Between 2005 and 2007, Malawi tripled its maize production and went from a net importer of maize to a net exporter. The next phase of the green revolution is already starting in developing countries (Dorward et al., 2008). Cover crop nitrogen fixing methods, use of indigenous rock phosphates, and high nutrient composting methods are being used to sustainably replete the soil of much needed nutrients to ensure that yields rise at adequate rates to support the earth’s growing population (Sanchez, 2002; 2010).

Nutrition transition and China

As countries move from “developing” to “developed” and onward, a host of new nutritional issues mostly revolving around increased rates of chronic disease become relevant. This set of non-communicable diseases are equal in importance to those of the developing world because they threaten to reduce productivity and place a large financial burden on governments, much in the same way issues stemming from chronic malnutrition hinder national growth. This portion of the seminar focused on the topics below.

Nutrition transition describes a recent phenomenon that occurs when a given population begins to move away from infectious disease because of poor access to food, periodic famine, poor sanitation, and general malnutrition towards overweight and obesity and associated chronic non-communicable diseases connected with urban-industrial lifestyles (Omran, 1971). There is a general shift from agrarian to industrial societies. Jobs that require physical activity are increasingly being replaced by those that require hours of sedentary tasks. Technology has lessened the need for jobs of a manual nature which viewed as a series of seemingly small movements might look trivial but add up to many calories that are no longer being expended. Finally, the diets of young and old include increased amounts of nutrient-poor, calorie-dense foods, as access is gained to more processed foods (Brownell, 2008). From 1974 to 1997, during a time of rapid economic development in Brazil, the percentage of overweight children rose from 4.2% to 14.3%; and in the US from 1971 to 1994, the percentage of overweight children rose from 15.4% to 25.6% (Popkin and Fordon-Larsen, 2004). The increasing cost of chronic disease puts a burden on every country’s health system and decreases global productivity.

After “the great leap forward” in which it is estimated 30 million Chinese died in major part because of failed government policies, the population once again began to grow (Smil,

1999). The period of 1962 to 1985 saw liberalization of food production and the first signs of a successful economy in China (Zhai, 2008). Beginning in the late 1980s, the percentage of energy from oils began to increase as the traditional Chinese diet, rich in vegetables with minimal animal foods, began to give way to a westernized eating pattern. The prevalence of stunting and underweight declined sharply as the prevalence of overweight and obesity doubled (Popkin, 2008). Finally, the once low prevalence of non-communicable diseases such as coronary heart disease and diabetes is now becoming a legitimate national concern (Zhai, 2008). Like many developing countries, China has started to feel the effects of nutrition transition – an issue that most certainly will get worse before trends are reversed.

Review of constructs and measurements used for evaluation of the seminar

The STEM disciplines: Science, technology, engineering, and math

A freshman seminar on world hunger and human health and nutrition naturally lends itself to the STEM disciplines and principles. In their recent report in 2010, the National Science Board noted “Scientific and technological innovation continues to play an essential role in catalyzing the creation of new industries, spawning job growth, and improving the quality of life in the United States and throughout the world.” Also, the STEM Education Coalition emphasized the “critical role that STEM education plays in enabling the U.S. to remain the economic and technological leader of the global marketplace of the 21st century;” supported “robust federal investments in basic scientific research to inspire current and future generations of young people to pursue careers in STEM fields;” and believe that “our nation must improve the way our students learn science, mathematics, technology and engineering.” Examples of the need for

STEM in assessing and alleviating hunger in new and innovative ways include research in the biological and chemical sciences that explore the impact of human nutrient deficiencies, especially iodine, vitamin A, and iron that were emphasized in the course; technology in developing and implementing successful food production, food-fortification, and supplement intervention strategies, such as biofortification and the impetus for a strong knowledge base for a second green revolution; engineering involved in sustainably producing clean water that is accessible to all, storing and transporting food safely, manufacturing safe and nutritious foods and supplements, and effectively distributing these essentials; and mathematics to determine and compare the prevalence of various forms of hunger, establish trade policy that benefits all parties involved, and assess the impact of hunger-related interventions on making meaningful improvements in food production, nutritional status, and human health and well-being.

Prior educational approaches to world hunger

Given the scope of world hunger, it is not surprising that many universities are involved with hunger through their agricultural programs (e.g., land grant universities) and activist groups such as Universities Fighting World Hunger (2011). Cornell University offers a series of case studies on human health and nutrition policies (Cornell University, 2011). Harvard University offers a graduate level two-week concentrated workshop that aims to “explore in depth the complexities of world hunger and food policy, integrate across the core methodological areas of the curriculum, and move from understanding to action” (Harvard 2009). “Students in the masters of public policy and public administration programs (are) grouped into small teams...(and) prepare policy analysis memos, briefing books, and oral briefings...expected to be of professional quality, relevant for public officials” (Harvard 2009). The University of

Kentucky requires incoming honor students to complete a western heritage culture track, one of which focuses on world hunger. The succession of three courses goes through the history of food production, “how poverty and affluence affect diet, (and) synthesize information about food and natural resource tradeoffs...to effectively communicate natural resource concepts to a non-science audience” (UK, 2009).

Knowledge transfer

This section reviews theory on knowledge transfer including definitions, characterizations, and methods used to create a learning environment that encourages high levels of knowledge transfer. One of the most important goals in education is the transfer of knowledge. Students should be able to take solutions or concepts from the context in which it was learned and transfer that knowledge to a similar context (McKeaough et al., 1995). Just as someone can learn about a given subject in varying amounts, many have defined different degrees of relating to knowledge transfer. “Transfer of learning refers to the influence of past learning on current and future learning and to the application or adaptation of previous or current learning to similar or novel situations” (Haskell, p. 23). Budé defined three levels of understanding necessary for knowledge transfer: “a superficial understanding based on knowledge directly derived from sources of information, a more profound level of understanding based on a comprehensive and coherent knowledge structure, and the highest level of understanding which is indicated by the ability to transfer knowledge; i.e., the ability to flexibly engage...knowledge in novel tasks” (Budé, p. 3). This explanation seems to argue that knowledge transfer can only happen if a deep understanding of a subject is present. However, in

his review of Haskell's book, Calais defines six levels of knowledge transfer, each having greater impact than the last:

“Level 1: Nonspecific transfer

Nonspecific transfer implies that all learning essentially is transfer of learning because all learning is contingent upon being connected to past learning. This level of transfer, though true and thoroughly necessary, is perhaps trivial in light of daily experiences of transfer.

Level 2: Application transfer

Application transfer refers to the application of what we have learned to specific situations. For example, after having learned about computer programming, we are then able to genuinely apply this knowledge to actually program a computer.

Level 3: Context transfer

Context transfer, in contrast, refers to the application of what we have learned under slightly different situations ... We experience this type of transfer when “place learning” plays a central role in learning because learning may be retrieved due to cues being provided by the physical place itself.

Level 4: Near transfer

Near transfer occurs when we transfer previous knowledge to new situations closely similar to, yet not identical to, initial situations. Transferring our experiences associated with driving a car with a manual transmission to driving a truck with a manual transmission reflects an example of near procedural transfer.

Level 5: Far transfer

Far transfer entails the application of learning to situations entirely dissimilar to the initial learning... For example, learning about logarithms in algebra and applying this knowledge in assessing the growth of bacteria in microbiology.

Level 6: Displacement or creative transfer

Displacement or creative transfer results in the creation of a new concept because of the interaction of the newly perceived similarity between the new and the old. This type of transfer of learning involves more than the mere insight that something is similar to something else. For example, the effects of the downward pull of the earth's uniform gravitational field that we experience while standing on earth is equivalent to the effects that we experience while standing in an elevator that is accelerating upwards at precisely the right rate" (Calais, pp. 2-3).

The ability to transfer knowledge learned in the classroom even at levels two and above cannot be assumed, but must be ensured and strived for. Knowledge of many solutions can only help to inform and improve outcomes, especially in the area of solving the problems of hunger in a variety of settings. "The advances and success in science, invention, and technology are frequently based on analogical reasoning, which is at the heart of transfer. These advances and successes sometimes generate new paradigms for viewing our world and represent our highest intellectual achievements" (Calais, p. 6). Encouraging knowledge transfer at the highest levels should be every teacher's goal for their students.

Fink proposed a "Taxonomy of Significant Learning," which defines learning in terms of change in the learner, requiring a *lasting* change that is *important* in the learner's life. The

taxonomy defines six tenants of significant learning: foundational knowledge, application, integration, human dimension, caring, and learning how to learn; all while stressing that the six dimensions should be integrated as much as possible (Fink, 2003). This approach demands that learners constantly engage in knowledge transfer so they are practiced at making connections that are creative and meaningful, yielding desired results.

Empathy scale

Measurement of the change in empathy during the seminar allows for analysis of emotional connections made by the students with the content presented over the course of the seminar. The following review summarizes Davis' work on the scale used to measure empathy at the pre- and post-test time points of the seminar. Davis opens with a review of the components that he believes contribute to the umbrella term of "empathy." Early distinctions in the 18th and 19th centuries clearly differentiate emotional empathy, loosely defined as an emotional reaction to something affecting another, from cognitive empathy, the ability to understand (but not necessarily feel) the emotional implications of an event affecting another. Although this distinction has been made in the past, none of the preceding scales measuring empathy measured these two constructs separately. The review continues by exposing the consequences of omitting this important distinction. Many scales include items that measure these constructs independently, only to produce an aggregate score that does not differentiate between them. This might become problematic because one kind of empathy might affect someone's ability to engage in the other. If a person can't understand what the implications of a given event might be to another, it is unlikely they will have an emotional response to whatever has transpired. The empathy scale was created to be "easily administered and scored, and designed to capture

separately individual variations in cognitive, perspective-taking tendencies of the individual as well as difference in the types of emotional reactions typically experienced" (Davis, p. 5).

The first version of the questionnaire included 50 questions and was administered to 451 students at the University of Texas at Austin. A factor analysis revealed four major factors entitled fantasy items (F), perspective-taking items (PT), empathic concern items (EC), and personal distress items (PD) (Davis, 1980). In a second round of testing 45 questions, most from the original version and a few new questions, were assigned to four identified factors and administered to 427 students at the University of Texas at Austin. Similar factors emerged from this second round, with nearly identical findings in both sexes. Items weighing most heavily in both sexes on a single factor were used for the final formulation of the questionnaire. This final version was given to 1161 undergraduate students at the University of Texas at Austin (Davis, 1980). The four predicted factors emerged, along with significant subscale inter-correlations between the EC and F along with the EC and PT scale (but not the F and PT scale). Although there is clearly some association between these scales, Davis believes they are not strong enough to conclude that the same construct is being measured. Test retest coefficients were calculated with a smaller sample and showed that this final version of the empathy scale had temporal stability over a 60 to 75 day period (Davis, 1980).

Davis emphasizes the validity of the scale based on the identification of four discrete empathy scales with similar relationships in both men and women independently. The scale scores women consistently higher than men in all factors, a finding consistent with other scales measuring a similar construct (Davis, 1980). Davis also argues that the significant positive correlation between the PT and EC scales and a significant negative correlation between the PT and PD scales support earlier empathy research that as one matures, they are able to differentiate

other's suffering from their own. This makes for an instrument that clearly divides the affective and cognitive forms of empathy (Davis, 1980).

Activism orientation scale

The ability to accurately predict the future actions of the study population is not within the realm or time-frame of this research. However, measuring an individual's intention to perform hunger-related actions such as engaging a friend in conversation or donating money to a hunger-related organization could serve as a measure of the effect this seminar might have on a student. This review of the Activism Orientation Scale (AOS) outlines the theory and development of the scale used to measure future intention to act. The definition of activism can vary from subject to subject. Corning and Meyers offer a scale they call the AOS, defining activism orientation as "individual's developed, relatively stable, yet changeable orientation to engage in various collective, social-political, problem-solving behaviors spanning a range from low-risk, passive, and institutionalized acts to high-risk, active, and unconventional behaviors" (Corning and Meyers p. 704, 2002). The scale takes care to evaluate personal beliefs, as well as membership in organizations and willingness to use or raise resources for a given cause.

The AOS was developed over a series of three studies (Corning and Meyers, 2002). The first study aimed to develop the actual AOS and included measurement elements from the three areas of personal belief, organization membership, and fundraising mentioned earlier. Developers took care to focus on behavior rather than specific issues or political orientation. Participants were undergraduate students in introductory psychology courses at a Midwestern university (actual university not noted in the study), of which the majority were first year students. After a factor analysis of the results, two factors, the first labeled "Conventional

Activism" and the second labeled "High-Risk Activism" were found to account for 83.4% and 16.6% of the variance, respectively.

The second study aimed to "investigate the psychometric properties of the AOS" (Corning and Meyers, 2002). This involved comparing the relationship of the AOS to scales measuring the construct of relative deprivation (an individual's motivation to act based on their situation compared to what it should be), internal versus external locus of control with an emphasis on personal and sociopolitical locus of control, strong issue-specific orientation, and group differences of criterion-related validity (the ability of the scale to account for differences among groups that should have varying activist orientations based on their current activity level). The AOS was found to have strong internal consistency in the overall scale and associated subscales. AOS scores were related to relative deprivation and political locus of control scales. As predicted, there was no significant relationship between personal or interpersonal locus of control or between men and women with the AOS. Finally, differences were seen in criterion-related validity in predicted ways for groups of varying predicted activism orientation.

The third study aimed to "assess the psychometric utility of the AOS with two non-student, community samples" (Corning and Meyers p. 720, 2002). It was hypothesized that "AOS scores from an organizational group whose purpose is activism would be significantly higher than AOS scores from a community group in which activist behavior varies substantially" (Corning and Meyers p.720, 2002). The activist group were "paid employee members of a not-for-profit activist organization in the Midwest that works to promote social, economic, and environmental justice," while the community group was "a Midwestern community of Catholic nuns devoted to social justice" (Corning and Meyers p.721, 2002). Results showed that career

activists scored much higher on the AOS than a community group. This also demonstrated that the AOS was valid over a wide variety of populations.

Corning and Meyers discuss the scale's strength in applicability because of its basis in sound theory, sensitivity to different gradations in activist activity (instead of just identifying dichotomies), and overall generalizability. The authors believe the AOS could be used as a screening tool or a predictor of future action. The discussion ends by highlighting the scale's utility in and out of the academic setting and proposed use of the scale to learn about current political climates or for employee recruitment.

Rationale, Research Question, Hypothesis, and Specific Aims

Rationale

Given the high prevalence and many types of domestic and international hunger, as well as the need for evidence-based solutions to decrease hunger and improve human nutrition, a freshman seminar was developed and taught in fall 2010. The seminar was developed with attention to the tenants of knowledge transfer (Calais, 2006; Haskell, 2001) and Fink's taxonomy of significant learning (Fink, 2003), as well as integration of concepts that relied on applying the STEM disciplines (science, technology, engineering, and math) to ensure a meaningful introduction to world hunger. The seminar met one hour per week for 15 weeks, a format allowing for feasibility testing of the theoretical approach, as well as collection and analysis of preliminary data to assess student learning outcomes. Based on its successes, the approach is being used as a basis for a newly approved three-credit course: FDNS 3200: World Hunger and Human Nutrition.

Research Question

What is the impact of a freshman seminar about world hunger on student learning, empathy, and action towards hunger?

Hypothesis

A freshman seminar focused on world hunger and human nutrition will positively impact student knowledge, knowledge transfer, empathy, and action towards these issues.

Specific Aims

Specific Aim 1: Develop a curriculum for a seminar on world hunger based on interactive principles that encourage learning that leads to a lasting change that is important in the learner's life.

Specific Aim 2: Develop an evaluation tool that assesses the change in students' knowledge, knowledge transfer, empathy, and action towards world hunger issues.

Specific Aim 3: Administer the proposed seminar curriculum and evaluation, and determine the outcome of the course on student's knowledge, knowledge transfer, empathy, and action towards world hunger issues.

CHAPTER 3
OUTCOMES OF KNOWLEDGE, EMPATHY, AND ACTION FROM A FRESHMAN
SEMINAR ON WORLD HUNGER

Abstract

The purpose of this study was to explore the impact of a freshman seminar about world hunger on student learning, empathy, and action towards hunger. Study participants were freshmen at the University of Georgia (N = 30 and 67% female). The educational intervention, a 15 week freshman seminar conducted in the fall semester of 2010 entitled “FRES 1020: Let the Big World Eat,” met once a week for 60 minutes. Evaluations included a multiple choice pre-test/post-test to assess knowledge, short answers to assess knowledge of domestic hunger organizations, a short answer question to assess knowledge transfer, Likert scale pre-test/post-tests to assess empathy and activism orientation, a frequency scale to assess actions taken, and an informal qualitative analysis of written hunger activity responses. Following the seminar there were significant increases in both knowledge and actions taken and a positive significant relationship between knowledge scores and knowledge transfer. Hunger activity responses revealed significant trends in empathy and willingness to act. These results provide encouraging data for the development of future courses for undergraduate students to improve their knowledge and action toward hunger-related problems.

Introduction

The Food and Agricultural Organization of the United Nations estimates 925 million people were undernourished in 2010, which outside of 2009 is more hungry people than any point since 1970 (FAO, 2010). Hidden hunger, the lack of one or multiple micronutrients, affects more than twice this number (UN, 2007). In 2005 the percentage of undernourished in developing countries began to increase, but hunger-related problems are also prevalent in the developed world (FAO, 2010). The Household Food Security Survey showed that 14.7% of U.S. households were food insecure at some point during 2009 (Nord, 2010; USDA, 2000). Ethical considerations are certainly not the only reasons to reverse these trends. The financial strain created by reduced productivity as a result of hungry individuals that do not meet their full mental and physical potential should be of great concern in even the strongest of economic times. Universities have an obligation to their students and to local and global communities to teach the next generation how to address the tragedy of world hunger.

Developing university courses that lead to meaningful changes in students can greatly influence the leaders of tomorrow. Several universities have offered courses with educational methods that “explore in depth the complexities of world hunger and food policy, integrate across the core methodological areas of the curriculum, and move from understanding to action” (Harvard, 2009). In terms of addressing world hunger, meaningful change takes into account more than just learning facts; it ensures students can apply what they’ve learned to new situations as well as promote empathy and a desire to help fight the root causes of hunger. Although empathy and willingness to act are relatively stable over time, setting the goals to positively influence these constructs are important initial steps to achieving them (Davis, 1980; Corning and Myers, 2002).

The current study is centered on a freshman seminar that was developed in the Department of Foods and Nutrition at the University of Georgia to teach nutrition-related issues in world hunger entitled “FRES 1020: Let the Big World Eat.” It was presented during the fall semester of 2010 and included a variety of educational experiences. Data measuring the impact of a freshman seminar about world hunger on student learning, empathy, and action towards hunger were collected. The specific aims of this study were to develop a curriculum for a seminar on world hunger based on interactive principles that encourage learning that leads to a lasting change that is important in the learner’s life; develop an evaluation tool that assesses the change in students’ student knowledge, knowledge transfer, empathy, activism orientation, and actions taken towards world hunger issues; and administer the proposed seminar curriculum and evaluation, and determine the outcome of the course on student knowledge, knowledge transfer, empathy, activism orientation, and actions taken towards hunger issues. This study provides insights into the development and implementation of a seminar on world hunger and results will aid future attempts to teach similar courses so future generations might be motivated to devote time as volunteers or to pursue careers in any number of fields that work to alleviate world hunger.

Methods

Study design and timeline

The study was a pre-test, educational intervention, post-test design. The variables of knowledge, knowledge of domestic hunger organizations, empathy, activism orientation, and actions taken were assessed during the first day of class (pre-test) and the semester finals period (post-test), while knowledge transfer was assessed at one time point towards the end of the

semester. The seminar itself lasted 15 weeks and was conducted during the fall 2010 semester at the University of Georgia. It was entitled “FRES 1020: Let the Big World Eat,” met once a week for about 60 minutes, and evaluations and activities included a pre-test/post-test, three short answer essays (the last of which was used to assess knowledge transfer), and completion of a hunger-related activity.

IRB approval

All methods and procedures were approved by the University of Georgia Institutional Review Boards on human subjects.

Student recruitment and exclusion criteria

Students were recruited into the seminar during summer orientation and fall registration periods with the help of staff that advised incoming freshman and were from the College of Agriculture and Environmental Sciences, the College of Family and Consumer Sciences, and the Franklin College of Arts and Sciences. These advisors distributed fliers and encouraged students who asked for seminar recommendations to enroll in this particular seminar. A description of the seminar was also published in a university publication that highlighted freshman seminars available in fall 2010. Thirty-eight first-year undergraduate students enrolled in the seminar, but three students did not return after the initial day, one left after week four, two joined the course after the initial pre-test, and two did not meet the final age requirement (18 or older). Thus, the final sample size for the seminar was 30 students.

Seminar curriculum: In-class modules

The majority of the seminar curriculum was developed by Benjamin Gray (BG) and Dr. Mary Ann Johnson (MAJ). Christine Akoh (CA) prepared a draft of one module, and Dr. Alex Anderson (AA), Ms. Priyanka Chakraborty (PC), Dr. Silvia Giraudo (SG), and Dr. Jung Sun Lee (JSL) all gave guest lectures of about 30 minutes each. The modules were (presented by):

- I. Overview of hunger internationally and in developing countries (MAJ)
- II. Overview of hunger domestically and in developed countries (MAJ)
- III. Iodine deficiency in Guatemala (BG)
- IV. Iron deficiency in India (BG)
- V. Vitamin A deficiency and Kenya (MAJ, developed by CA)
- VI. Nepal's foundation for health care (BG)
- VII. Hunger and the Green Revolution (BG)
- VIII. Nutrition transition (MAJ)
- IX. Maternal and infant nutrition (MAJ)
- X. Relationships of food insecurity with health in developed countries (MAJ)
- XI. Hunger perspectives from India (PC), Ghana (AA), Mexico (SG), and North Korea (JSL)

The seminar provided an overview of the nutritional issues in the realm of world hunger. Attendance was a priority and made up 45% of a student's grade, while 35% of the grade was for the pre-test, essays, quizzes, and the post-test, and the final 20% completion of the hunger-related activity assignment. Final seminar grades were based on a traditional A, B, C, D, and F grading scale. Modules I and II introduced the students to basic terminology used in the hunger literature, the demographics of hunger nationally and internationally, and key themes such as

measuring hunger, food insecurity, and the roles of organizations and governments. Modules III, IV, V, and VIII profiled a specific country and an important nutritional deficiency within that country. Modules VI and VII profiled topics from the last century that showed a clear positive impact in the areas where changes in the health care system, agricultural production, prevalence of hunger and/or food insecurity have occurred. Modules IX and X reviewed maternal and infant nutrition, food insecurity, and health and compared differences in developing and developed regions. Module XI gave students the opportunity to hear about hunger issues from members of the Department of Foods and Nutrition with first-hand experience in their country of origin (Dr. Chakraborty from India, Dr. Anderson from Ghana, Dr. Giraudo from Argentina, and Dr. Lee from South Korea, speaking about North Korea).

Modules were structured in a lecture format with informational slides, charts, graphs, videos, and other appropriate visual aids providing foundational knowledge. Instructors regularly asked discussion questions that were designed to help students think about concepts and situations they had encountered earlier in the seminar as a means of integrating and applying the knowledge base they had accrued. Statistics were presented using multiple methods (text, charts, graphs, percentages versus raw numbers) so students could develop an understanding of differential presentation styles used for hunger-related information by a variety of disciplines, including agriculture and agricultural production, food science and technology, human nutrition, public health, medicine, and economics. Case studies and audio and video clips were useful in eliciting emotional and cognitive empathy from students in subject matter that sometimes presented numbers too large or far-fetched to grasp in otherwise meaningful terms. Students were encouraged to give their opinions about sometimes controversial subjects in an effort to promote discussion, which was seen as integral to increased knowledge transfer and empathy.

Examples include whether providing food aid to developing countries helps or hurts and if and why they believe providing micronutrient supplements is a long-term solution in developing countries.

Seminar curriculum: Hunger activity assignment

While writing assignments and lectures were necessary components, many of the references in the literature review (Chapter 2) point to authentic, personal experiences as an effective method of fostering an environment for significant learning. As such, students were required to research, plan, and carry out a “hunger activity.” This was loosely defined during the seminar and the instructions included gleaning to donate food, lobbying public officials, raising money for organizations that fight hunger, volunteering at food banks, and many other options. Students started by researching basic information about five organizations, then writing a description of how they might help three of those five organizations. Next, they were asked to narrow down their choice to one organization and submit a draft that outlined how they would plan and implement their hunger activity. Students were encouraged to work in groups or alone depending on their interests and schedules. After the activity was performed, students wrote answers to questions about what they learned during their experiences.

Assessment: Pre-test and post-test questionnaires

The variables used in this study are defined in Table 1. Data were collected from a questionnaire administered during the first (pre-test) and the last class periods (post-test) of the fall 2010 seminar. The questionnaires measured the degree of knowledge, knowledge of domestic hunger organizations, empathy, activism orientation, and actions taken towards hunger-

related issues. The pre-test questionnaire was administered after a short twenty minute course introduction that included instructor introductions, a review of the syllabus, and some information on topics to be covered. Knowledge questions to measure factual information (as contrasted with opinions, beliefs and attitudes) the respondents possessed about various world hunger topics, were in a true/false, multiple choice, or short answer format (Fraenkel and Wallen, 2003). The pre-test questionnaire knowledge portion included a “don’t know” option that helped minimize guessing (in the post-test, the “don’t know” response was eliminated because there was no advantage to the student to select this response in terms of their grade for the course).

Subscales of the empathy scale developed by Dr. Mark Davis were used to assess each student’s total empathy, emotional empathy, and cognitive empathy (Davis, 1980). Empathy towards hunger issues was measured using a series of 3 questions modified by the instructors from the original questions to reflect hunger issues. The scale asks the student to respond to statements such as “I often have tender, concerned feelings for people less fortunate than me” using a Likert scale from 0 (“does not describe me well”) to 5 (“describes me very well”) (Davis, p. 7; Davis, 1980). The activism orientation variable was measured with a modified version of the Activism Orientation Scale (AOS) developed by Dr. Alexandra Corning and the actions taken variable was measured using a single action frequency question on both the pre- and post-tests. The Activism Orientation Scale asks the student to respond to statements such as “How likely are you to display a poster or bumper sticker with a political message” using a Likert scale from 0 (extremely unlikely) to 5 (extremely likely) (Corning, p.8).

Assessment: Knowledge transfer

Knowledge transfer was measured using a short essay question at week 13 with a maximum response length of 500 words. Responses were scored based on three categories: identification of problem causes and etiologies, proposed interventions that would address the problem, and proposed techniques to evaluate the suggested interventions, with a point given for each distinct answer in a respective category. For example, if a student discussed both iron supplementation and breast feeding education, a total of two points would be awarded for the intervention score.

Assessment: Hunger activity responses

Qualitative data is an integral component of research with human subjects and is especially valuable when measuring empathy and intention to act. The written responses to their hunger activities were examined to serve as a tool to measure qualitatively the impact of primary experiences on the students. Portions of these responses are quoted in the discussion section and full transcripts of these responses can be found in Appendix C (with personally identifying information redacted).

Statistical analysis: Knowledge questions and knowledge of domestic hunger organizations

Initially, the knowledge portion of the questionnaire was 62 items; eight of these items were not analyzed because the two instructors felt they were either poorly worded or had not been adequately addressed during the seminar. The question about knowledge of domestic hunger organizations was analyzed separately because it was a short response question. The remaining 53 were multiple choice or true/false. Each of the 53 knowledge test items was used to

analyze the knowledge construct by comparing the pre-test and post- test responses using McNemar's test for agreement in non-parametric data (SAS Cary, NC). The sum of correct answers was compared at the pre-test and the post-test with McNemar's test as well. Knowledge of domestic hunger organizations was analyzed by comparing pre-test and post-test scores using the Wilcoxon signed rank sum test for non-parametric data.

Statistical analysis: Knowledge transfer

Essay questions were graded separately by two researchers: one of the principal investigators (Mr. Benjamin Gray) and an expert on food insecurity in India (Ms. Priyanka Chakraborty). Scores that had more than a one point differential in a single category or more than a two point differential as an overall score were discussed until a score agreed upon by both graders was reached. Three subscales were created (cause/etiology score, intervention score, and evaluation score) and an overall score was calculated from their sum. These four measures of knowledge transfer were compared with other variables such as post-test knowledge scores using Spearman and Pearson correlation coefficients.

Statistical analysis: Empathy

The 17-item questionnaire was used to analyze the empathy construct by comparing the pre-test and post-test questions using the Wilcoxon signed rank sum test. Along with the total empathy score, subscales measuring empathetic concern, perspective taking, general empathy, and hunger-related empathy were created using select questions from the questionnaire (for example the perspective taking subscale included items e1, e4, e6, e8, e11, e13, and e15) and analyzed using the Wilcoxon signed rank sum test.

Statistical analysis: Activism orientation scale and actions taken

The modified 30-item activism orientation scale was used to analyze the activism orientation variable by comparing the pre-test and post-test questions and total summary score using the Wilcoxon signed rank sum test. The item measuring the number of actions taken in the past three months was also analyzed with the Wilcoxon signed rank sum test.

Other statistics

All statistical analyses including means, standard deviations, minimums, maximums, percentages, correlation coefficients, Wilcoxon signed rank sum test (pre-test vs. post-test comparisons of individual questions measured with Likert scales or as summary scores), and McNemar's test (for questions with incorrect or correct answers) were calculated using SAS (SAS Cary, NC). Scores were computed on the entire sample as well as the groupings of gender and class section (Tuesday or Thursday). Regression models for the dependent variables pre-test knowledge, post-test knowledge, change in knowledge, total knowledge transfer score, pre-test empathy, post-test empathy, pre-test knowledge of domestic hunger organizations, post-test knowledge of domestic hunger organizations, pre-test total empathy scores, post-test total empathy scores, change in total empathy score, pre-test activism orientation scale scores, post-test activism orientation scale scores, change in activism orientation scale scores, pre-test actions taken in the past three months, post-test actions taken in the past three months, and change in actions taken in the past three months were computed to compare differences between groupings. All statistics were calculated using SAS (SAS Cary, NC) and the level of statistical significance for all tests was defined at $p < 0.05$.

Results

Table 1 is a list of study variables measured during the seminar. At the beginning of the study nearly all students were 18 years of age (29 of 30), 67% were female, all were in the first year of undergraduate education at the University of Georgia and had started undergraduate education immediately after high school (after summer break), there were somewhat more students in the Tuesday compared to the Thursday section (57% vs. 43%), and although no formal analysis of area of study was performed students were deciding amongst 33 different reported majors, 6 of which were nutritionally related (Table 2).

Table 3 illustrates that of the 53 knowledge questions asked at the pre- and post-test, 29 had post-test correct responses that were significantly higher than the pre-test. Statistically significant correct response increases ranged from a four-point increase on item k9: "Worldwide the number of hungry people is greater than AIDS, malaria, and tuberculosis combined" ($p < 0.05$) to a 25-point increase on item k15: "What are the United Nations' Millennium Development Goals?" ($p < 0.001$).

Table 4 shows the mean score for correct responses to the knowledge questions increased from 21.9 for the pre-test to 35.3 for the post-test, a significant increase of 13.4 correct responses ($p < 0.001$). When scores were calculated based on grouping, all mean correct response rates were found to have increased significantly. For example, the number of correct responses for those in the Tuesday section increased from 22.6 to 34.2, a significant increase of 11.5 items (Table 4).

Knowledge of domestic hunger organizations and their specific focus increased from an average of 0.8 at the pre-test to 2.2 at the post-test, which is a gain of more than one organization (Table 5). Knowledge of domestic hunger organizations also increased in each subgroup of the

sample, but regression analyses showed that these increases were not associated with class section (data not shown) (Table 5).

Spearman and Pearson correlations among knowledge transfer scores and select knowledge scores, empathy scores, activism orientation scores, and actions taken are shown in Table 6. Spearman correlations are summarized here, because they are more appropriate for this small sample for which the data are not normally distributed. The strongest correlations were seen between intervention knowledge transfer with post-test knowledge scores ($\rho = 0.49$) and total knowledge transfer score with change in knowledge score ($\rho = 0.40$). Although the total knowledge transfer score with post-test knowledge score correlation coefficient was $\rho \geq 0.29$, it did not reach statistical significance (Table 6).

Table 7 shows that of a total 17 empathy items examined at the pre- and post-test, one item had a post-test response score that increased significantly from the pre-test. Item e6 "I sometimes try to understand my friends better by imagining how things look from their perspective" increased from 3.47 to 3.93; a significant increase of 0.46 points ($p < 0.01$, Table 7).

Only one of the four empathy subscales showed a post-test response score that increased significantly from the pre-test response score (Table 8). The perspective taking scale increased from 21.7 points to 23.2 points, a significant increase of 1.5 points ($p < 0.05$). The mean total empathy scale response score did not increase following the course (Table 8).

Of a total 30 activism orientation scale items, none had a post-test response score that increased significantly from the pre-test response scores as shown in Table 9. Similarly, total activism orientation scores show no significant changes from pre-test to post-test (Table 10).

Table 11 describes the mean response rate the number of hunger related activities participated in over the last three months. This shows an increase from 0.5 activities to 1.4, a

significant increase of 0.8 ($p < 0.001$). Number of hunger related activities participated in increased in each subgroup of the sample, but regression analyses showed that these increases were not associated with gender or class section (data not shown) (Table 11).

Spearman and Pearson correlations among selected knowledge, empathy, activism orientation, actions taken scores are shown in Table 12. The strongest correlations were seen between pre-test empathy scores with pre-test activism orientation scores ($\rho = 0.75$), post-test empathy scores with post-test activism orientation scores ($\rho = 0.54$), and post-test knowledge scores with post-test actions taken scores ($\rho = -0.50$) (Table 12).

Discussion

This study intended to assess the impact of a freshman seminar about world hunger on student learning, empathy, and action towards hunger. From both statistical and practical viewpoints, it appeared that students gained considerable foundational knowledge from the seminar curriculum. Post-test knowledge scores were increased 28 percentage points from their pre-test values and students were significantly more aware of domestic hunger organizations after the seminar. Significant knowledge gains were seen regardless of gender, class section, or intended major. However, significant increases in results on multiple choice tests do not necessarily represent higher order knowledge transfer, a hallmark of a curriculum that leads to a lasting change and is important in the learner's life.

Relatively low levels of knowledge transfer were required to obtain a high cause and etiology score because many appropriate answers were given in the question prompt or could be easily accessed by quickly reviewing a single module on iron deficiency. This may explain why only a weak relationship between cause and etiology knowledge transfer scores and post-test

knowledge scores was found ($\rho = 0.11$, $r = 0.09$). However, the knowledge transfer intervention scores required higher levels of knowledge transfer because students had to integrate concepts presented in several modules and activities during the course. Only a few interventions were represented in the module about iron, challenging students to "transfer previous knowledge to new situations closely similar to, yet not identical to, initial situations" to achieve higher knowledge transfer intervention scores (Calais, p. 3). The interventions proposed by the students included shoe donation drives, iron supplementation, biofortified crops, and education about birth spacing and breastfeeding, and were derived from student's research in addition to many of the subjects covered in lecture. The knowledge transfer evaluation score showed little correlation with high knowledge scores because methodology to evaluate the success of a nutrition intervention was discussed only in a very general sense throughout the seminar, reflected in the low number and general nature of the evaluation schemes proposed by the students. Significant correlation between total knowledge transfer scores with changes in the knowledge score shows students who gained the most knowledge during the course of the seminar were able to apply that knowledge at high levels.

Knowledge about world hunger came from a variety of sources. The knowledge section of the pre- and post-questions assessed the measurement of information presented, but not all knowledge gained during the seminar. While advantageous to use methods that are quantitatively measurable, numbers might numb the evaluator to the true magnitude of change over time. Although no formal qualitative evaluation was performed, excerpts from student's essays in response to their hunger-related activities were examined to address this matter. These were written towards the end of the seminar (week 13 of 15) and provided an additional method by which to evaluate the magnitude of change over time. Students learned about the local

community and became "more aware of all the ways that people can get involved" (Student 7, Appendix C). They learned about "complications people in developing countries must deal [with]...the weather, quality of soil, time for crop growth, and bugs that eat the crops...the causes of world hunger are a lot more personal now because I could see them first hand" (Student 8, Appendix C). Finally, they gained the knowledge that "you never realize how good you feel when you help someone else out until you're actually doing it...You feel so empowered inside and you just feel good and happy knowing you did something to help someone...who needs help" (Student 9, Appendix C). "It is weird to think of how helping someone else out can bring you a lot of joy even when none of this stuff is helping you" (Student 4, Appendix C). These examples illustrate the impact on the students in ways that were not assessed in the pre- and post-test objective questionnaires. The course provided an opportunity for students to gain an invaluable lesson, to realize the happiness gained by serving others.

Despite this large increase in knowledge and clear representation of higher level knowledge transfer, the specific aims of this study also included measuring student empathy and action towards world hunger issues. Most of the quantitative measurements of empathy show little significant or practical difference between the pre- and post-test scores. One of the strengths of the instrument used to measure empathy is its high test-retest reliability. The "measure seems to reliably tap stable characteristics of the respondent" (Davis, p. 16). The consistency of empathy as a construct yielded little detectable differences during the limited study time. However, there was a significant increase in scores of the perspective-taking empathy sub-scale which measured a student's "likeliness to spontaneously take up another's viewpoint" (Davis, p. 2); and strong evidence was also found in student hunger activity responses. "Standing in their rooms really drove home that the people living in these shelters are real people who deserve to

have somewhere to sleep and meals to eat...It made me feel extremely grateful for what [I] have...when many of these kids we were providing food to go home from school to empty houses and hungry bellies." (Student 1, Appendix C). Empathy for the local community was displayed as students became "more sensitive to the devastation hunger can cause and more sensitive to the fact that there are many people suffering from these problems right around me" (Student 33, Appendix C).

Similar to the calculated empathy scale, the Activism Orientation Scale, which is a measure of activism potential, was unchanged between the pre- and post-tests. Corning called activism orientation a "relatively stable, yet changeable orientation...that has complex roots in the socialization of experiences of individuals; once developed... [they] tend to persist for long periods of time-even for decades" (Corning and Meyers, p.705). In addition, the mean pre-test score for the study population was high when compared to values reported by others (Corning and Meyers, 2002). Seeing significant change in attitudes that traditionally persist for decades from a class that meets once a week for one hour over the course of 15 weeks when the population has very high initial scores would be extraordinary. However, it is possible that the seminar helped shift thoughts along the stages of change from the pre-contemplation stage, through contemplation and preparation, to willingness to act in the future among many students, and this might be a fruitful area for future studies (Prochaska and DiClement, 1983). Hunger activity responses stated they had plans to continue helping at their churches, had talked to their friends about helping at the food bank, and intended to participate in an alternative spring break trip to help homeless people in Washington, DC (Students 6, 9, and 1, Appendix C).

The significant relationship between post-test knowledge scores and post-test number of actions taken was unexpectedly found to be negative. The relationship may reveal a disconnect

between knowledge and actions taken scores, or like other significant findings in this study, might also just be an artifact of small sample size and the mathematical properties of some of the variables (e.g., little change and/or low range for empathy scores and total actions taken score).

This study had several limitations, including the small sample size. Non-parametric tests were used because data are typically not normally distributed in small samples (e.g., $N = 30$) and this may have sacrificed some statistical power. The knowledge questionnaire was developed before the curriculum was fully completed, so future studies should modify the knowledge questionnaire to improve alignment with the curriculum. Also, the pre-test and post-test for knowledge differed in that a “don’t know” answer was provided in the pre-test (to decrease guessing), but not in the post-test. The instrument used to measure knowledge transfer was based on a rubric scored by two researchers, one of whom is an expert on food insecurity in India. This approach yielded a reliable measure by tempering conflicting individual scores while still allowing for a more systematic approach that took into account a wide variety of answers. While it certainly evaluated ability to transfer knowledge to some degree, there was no mechanism to allot more points to answers that represented higher levels of knowledge transfer. If this mechanism had existed, a significant relationship between evaluation or total knowledge transfer score and post-test knowledge might have been found. Finally, the questions making up the instruments measuring empathy and action were taken from larger validated scales. Upon communication with the original authors of the scales used, both believed that partial scales would accurately measure these constructs to a degree; however, the fact remains these partial scales were not validated on their own.

The findings of this study provide pilot data for use in developing a more comprehensive course focusing on nutrition and world hunger. The curriculum was developed during the

semester and formulated by people who were relatively new to the subject of world hunger. Unfortunately, a focus group needs assessment approved by the IRB six months before the seminar started, including interviews with then current freshman about how they like to learn and what classroom activities are most meaningful, was not completed because no participants were successfully recruited. Incorporation of information from this focus group could have provided information used to illicit more change in the study population.

Much of the curriculum successfully conveyed knowledge to students, but to reach the goal of significant change in total empathy and willingness to act, presentation methods will have to evolve. In the next iteration of the course, it is suggested that students be required to help with one or two instructor-planned hunger activities early in the seminar in addition to the activity they plan themselves later in the semester. This would incorporate additional opportunities to focus on the human dimension of learning, developing empathy and providing a low-risk introduction to volunteering in the local community. In addition, more responsibility should rest on the students to present information researched about course related topics in both formal and informal situations leading to more discussion among the students and encouraging learning how to learn. These changes will allow the course grading structure to move away from a heavy attendance requirement into a system that places a premium on participation and knowledge transfer. Finally, based on the student evaluations (Appendices D and E), the instructors should use fewer overhead presentations and develop more interactive methods of learning to foster the highest attainable levels of significant learning.

The educational intervention showed encouraging results, producing optimism that the goals of increasing knowledge, knowledge transfer, empathy and action in hunger-related activities can be accomplished at least in part. It yielded significant increases in knowledge and a

significant relationship between higher post-test knowledge scores and higher levels of knowledge transfer. While anecdotal evidence of increased empathy and willingness to act towards hunger-related issues was found in students' essays and descriptions of their community-based projects, quantitative measurements of empathy and action were not significantly different between pre- and post-test time points. This gap between anecdotal and quantitative evidence should encourage studies in this area to continue in the future.

Tables

Table 1. Variables Assessed with the Pre-test, Post-test, and Short Essays used in FRES 1020, Fall 2010.

Variable	Measurement
Knowledge	
Knowledge questions	53 questions that were in a true/false or multiple choice format and asked at the pre-test (first day of class) and post-test (during the final exam period). Responses to each question were either incorrect (= 0) or correct (= 1)
Knowledge score	Sum of correct answers to the knowledge questions of the pre-test or post-test. Range: 0-53
Knowledge of domestic hunger organizations score	Number of correct identifications and explanations of domestic hunger organizations at the pre-test or the post-test; students were asked to provide 3. Range: 0-3
Knowledge transfer	
Cause/etiology knowledge transfer score	Number of proposed causes or etiologies given in response to the knowledge transfer short essay question given at week 13. Range: 0-∞
Intervention knowledge transfer score	Number of proposed interventions given in response to the knowledge transfer short essay question given at week 13. Range: 0-∞
Evaluation knowledge transfer score	Number of proposed evaluations given in response to the knowledge transfer short essay question given at week 13. Range: 0-∞
Knowledge transfer score	Total score comprised of cause/etiology, intervention, and evaluation sub-scales given at week 13. Range: 0-∞
Empathy	
Empathic concern score	A sub-scale of the total empathy scale not focused specifically on hunger; 7 questions measured at the pre-test and post-test on a Likert scale ranging from 0-5. Range: 0-35
Perspective taking score	A sub-scale of the total empathy scale not focused specifically on hunger; 7 questions measured at the pre-test and post-test on a Likert scale ranging from 0-5. Range: 0-35
Original empathy scale score	The combined empathic concern and perspective taking scores; 14 questions measured at the pre-test and post-test on a Likert scale ranging from 0-5. Range: 0-80
Hunger-related empathy score	A sub-scale of the total empathy scale consisting of three questions focused specifically on hunger; 3 questions measured at the pre-test and post-test on a Likert scale ranging from 0-5. Range: 0-15
Total empathy score	The combined original empathy and hunger-related empathy score; 17 questions measured at the pre-test and post-test on a Likert scale ranging from 0-5. Range: 0-95
Activism and actions	

Activism orientation scale	The instrument by which willingness to act was measured; 30 questions measured at the pre-test and post-test on a Likert scale ranging from 0-5. Range: 0-150
Actions taken	The number of hunger-related actions performed in the past three months measured at the pre-test and post-test. Range: 0-∞
Hunger activity response	A short essay written in response to the required hunger activity. Informal qualitative analysis was performed.

Table 2. Characteristics of Study Participants in FRES 1020, Fall 2010.

Category	N (%) [^]
Age = 18 years	29 (97)
Age = 19 years	1 (3)
Female	20 (67)
Male	10 (33)
Began college immediately after high school?	30 (100)
Tuesday section	17 (57)
Thursday section	13 (43)

[^]For all questions N = 30

Table 3. Knowledge Questions and Responses from Participants in FRES 1020, Fall 2010[^].

Question (Correct Answer)	Pre-test N (%)	Post- test N (%)	Change N (%)	p-value
k1. During the past few years, the prevalence of poverty has: (Increased)	26 (87)	26 (87)	0 (0)	NS
k2. During the past few years, the prevalence of hunger has: (Increased)	25 (83)	27 (90)	2 (7)	NS
k3. What percentage of worldwide hunger is due to causes other than war, corruption, or natural disaster? (92%)	1 (3)	3 (10)	2 (7)	NS
k5. About how many calories on average do people need daily? (Just over 2000)	19 (63)	24 (80)	5 (17)	0.09
k6. Worldwide about how many people do not get enough food to be healthy and lead an active life? (About 1 person in every 6)	19 (63)	28 (93)	9 (30)	<0.01*
k7. About how many individuals die worldwide of hunger-related causes each day? (25,000)	11 (37)	10 (33)	-1 (-4)	NS
k8. Most hungry people live in urban rather than rural areas. (False)	4 (13)	25 (83)	21 (70)	<0.001*
k9. Worldwide the number of hungry people is greater than AIDS, malaria and tuberculosis combined. (True)	25 (83)	29 (97)	4 (13)	<0.05*
k10. Most hungry people live where? (Asia and Pacific regions)	2 (7)	9 (30)	7 (27)	<0.05*
k11. What is the number of people worldwide who suffer from hunger? (1 billion)	17 (57)	27 (90)	10 (33)	<0.01*
k12. Seeds meant to boost crop yields don't work well in the nutrient depleted soils in Sub-Saharan Africa (True)	23 (77)	29 (97)	6 (20)	<0.05*
k13. Sub-Saharan Africa is one of few regions in the world that cannot grow enough food to feed the population. Which of the following would not help alleviate this problem? (Providing food aid to the population)	7 (23)	16 (53)	9 (30)	<0.05*
k14. Which of the following is not a primary soil macronutrient? (Iron)	5 (17)	17 (57)	12 (40)	<0.001*
k15. What are the United Nations' Millennium Development Goals? (Eight time-bound targets that aim to end extreme poverty worldwide by 2015)	4 (13)	29 (97)	25 (83)	<0.001*
k16. What does the term "undernutrition" mean? (Too little food, too much food, and/or low intake of vitamins or minerals)	15 (50)	23 (77)	8 (27)	<0.01*
k17. What does the term "wasting" mean? (A recent and severe process, such as starvation, that	13 (43)	16 (53)	3 (10)	NS

led to substantial weight loss)				
k18. What does the term “stunting” mean? (Chronic malnutrition that reflects a long-term problem in a population; measured as height-for-age in a child)	17 (57)	27 (90)	10 (33)	<0.01*
k20. In the developing world, many households contain both an underweight and an overweight member. (True)	15 (50)	17 (57)	2 (7)	NS
k21. Concurrent undernutrition and obesity is a hallmark of nutrition transition in developing countries. (True)	21 (70)	29 (97)	8 (27)	<0.05*
k22. Which of the following is not a cause of nutrition transition in developing countries? (Third world countries are producing more calories than they need)	10 (33)	16 (53)	6 (20)	<0.10
k23. Which of the following is not considered a cause of low birth weight in newborn infants? (Folic acid toxicity)	1 (3)	3 (10)	2 (7)	NS
k25. Infants should begin eating some complementary foods starting at age: (6 months)	14 (47)	20 (67)	6 (20)	<0.10
k26. About how much does it cost to fortify foods with various micronutrients? (Around 10 cents for each micronutrient per year)	1 (3)	14 (47)	13 (43)	<0.001*
k28. A deficiency of this micronutrient occurs in about 800 million people worldwide and leads to mental impairment in children born of mothers who did not consume enough of this nutrient during pregnancy: (Iodine deficiency)	3 (10)	17 (57)	14 (46)	<0.001*
k29. The most common nutritional deficiency in the world that affects billions of people and damages a country’s productivity and impedes cognitive development is? (Iron deficiency)	8 (27)	20 (67)	12 (40)	<0.01*
k30. What is the most common nutrition-related deficiency in the world? (Nutrition-related anemia)	9 (30)	21 (70)	12 (40)	<0.01*
k31. What is anemia? (Low levels of red blood cells)	19 (63)	25 (83)	6 (20)	<0.05*
k32. The leading cause of blindness in developing countries is? (Vitamin A deficiency)	8 (27)	25 (83)	17 (57)	<0.001*
k33. A deficiency of this micronutrient increases the	4 (13)	9 (30)	5 (17)	NS

risk of dying from malaria, measles, and diarrhea: (Vitamin A deficiency)				
k34. The most common symptoms of vitamin B12 deficiency at anytime during the lifecycle are: (Anemia and problems with the nervous system)	3 (10)	4 (13)	1 (3)	NS
k35. The most common symptoms of zinc deficiency from birth to two years of age are: (Impaired rates of growth, diarrhea, poor immune system)	4 (13)	17 (57)	13 (44)	<0.01*
k37. The body can absorb iron best from: (Meat)	13 (43)	24 (80)	11 (37)	<0.05*
k38. Fermentation increases the iron available for absorption. (True)	6 (20)	20 (67)	14	<0.001*
k41. Compared to people living in coastal areas, people living in mountainous areas are at risk of being deficient in: (Iodine)	14 (47)	17 (57)	3 (10)	NS
k42. Supplementation with which micronutrients is routinely recommended for pregnant women in both developed and developing countries? (Iron and folic acid)	3 (10)	11 (37)	8 (27)	<0.05*
k43. Micronutrients from foods are always absorbed better than nutrients from supplements. (False)	5 (17)	14 (47)	9 (30)	<0.01*
k44. Iodine can be provided to people by: Adding iodine to salt Giving injections of iodine to people Putting iodine in the drinking water (All of the above)	13 (43)	18 (60)	5 (17)	NS
k45. What is the cost of iodine deficiency compared to the cost of iodine supplementation? (71:1)	4 (13)	16 (53)	12 (40)	<0.01*
k46. What does the term “food insecurity” mean? (Access to adequate food is limited by a lack of money and other resources)	16 (53)	21 (70)	5 (17)	NS
k47. About what percentage of the US population is food insecure? (About 15%)	5 (17)	18 (60)	13 (47)	<0.01*
k49. In the US, the risk of being food insecure is highest in which of these situations? (Households with children headed by single women)	10 (33)	14 (47)	4 (13)	NS
k50. In the US, the risk of being food insecure is lowest in which of these situations? (Households with elderly people)	16 (53)	19 (63)	3 (10)	NS
k51. About how many food-insecure households	4 (13)	13	9 (30)	<0.05*

participate in at least one of the three major US federal food assistance programs – Supplemental Nutrition Assistance Program (formerly the Food Stamp Program), The National School Lunch Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children? (About 50%)		(43)		
k53. About how many people in the US are receiving food stamps (About 40 million)	1 (3)	10 (33)	9 (30)	<0.01*
k54. About how many people in the US receive assistance from the Supplemental Nutrition Assistance for Women, Infants, and Children (WIC) program? (About 10 million)	6 (20)	13 (43)	7 (23)	<0.05*
k55. In developed countries, food insecurity has been associated with a decreased the risk of having diabetes. (False)	17 (57)	28 (93)	11 (37)	<0.01*
k56. In developed countries, food insecurity has been associated with higher rates of depression and other mental health related disorders. (True)	25 (83)	30 (100)	5 (17)	Unable to Compute
k57. In developed countries, food insecurity has been associated with higher rates of drug-related problems. (True)	27 (90)	29 (97)	2 (7)	NS
k58. In developed countries, food insecurity has been associated with higher rates of domestic violence. (True)	25 (83)	30 (100)	5 (17)	Unable to Compute
k59. In developed countries in low-income families food insecurity has been associated with an increased risk of iron deficiency anemia. (True)	26 (87)	25 (83)	-1 (-3)	NS
k60. In developed countries, people who have diabetes and are also food insecure are more likely to have unmet health care needs. (True)	23 (77)	28 (93)	5 (17)	NS
k61. In developed countries, people who have diabetes and are also food insecure are more likely to have a mood disorder. (True)	21 (70)	30 (100)	9 (30)	Unable to Compute
k62. In developed countries, people who have diabetes and are also food insecure are more likely to feel more stress. (True)	25 (83)	30 (100)	5 (17)	Unable to Compute

[^]For all questions N = 30

*Denotes statistical significance at p < 0.05

Table 4. Summaries for Knowledge Questions used in FRES 1020, Fall 2010.

Grouping (Possible range 0-53)	N	Pre-test Mean (SD), Range	Post-test Mean (SD), Range	Change N (SD)	p-value
Tuesday section	17	22.6 (5.1), 15-31	34.2 (4.7), 26-46	11.5 (6.7)	<0.001*
Thursday section	13	21.0 (5.1), 10-28	36.8 (5.0), 26-46	15.8 (7.7)	<0.001*
Male	20	23.4 (4.4), 16-31	34.9 (5.3), 26-43	11.5 (8.5)	<0.01*
Female	10	21.2 (5.3), 10-31	35.6 (4.9), 26-46	14.4 (6.7)	<0.001*
All Scores	30	21.9 (5.1), 10-31	35.3 (4.9), 26-46	13.4 (7.3)	<0.001*

*Denotes statistical significance at $p < 0.05$

SD = Standard Deviation

Table 5. Summary of Participant Knowledge of Domestic Hunger Organizations in FRES 1020, Fall 2010.

Grouping (Possible range 0-3)	N	Pre-test Mean (SD), Range	Post-test Mean (SD), Range	Change N (SD)	p-value
Tuesday section	17	0.8 (1.1), 0-3	2.5 (0.8), 0-3	1.6 (1.3)	<0.001*
Thursday section	13	0.8 (0.8), 0-3	1.9 (1.4), 0-3	1.2 (1.2)	<0.05*
Male	20	0.3 (0.5), 0-1	2.3 (0.9), 0-3	2.0 (0.9)	<0.01*
Female	10	1.1 (1.1), 0-3	2.2 (1.2), 0-3	1.2 (1.3)	<0.01*
All Students	30	0.8 (1.0), 0-3	2.2 (1.1), 0-3	1.4 (1.3)	<0.001

*Denotes statistical significance at $p < 0.05$

SD = Standard Deviation

Table 6. Relationships Among Knowledge Transfer Measures and Knowledge Scores, Empathy Scores, Activism Orientation Scale Scores, and Actions Taken Scores from Participants in FRES 1020, Fall 2010[^].

Comparison	Spearman ρ	Spearman p-value	Pearson r	Pearson p-value
Cause/etiology knowledge transfer score vs. post-test knowledge score	0.11	NS	0.09	NS
Intervention knowledge transfer score Vs. post-test knowledge score	0.49	<0.01*	0.66	<0.001*
Intervention knowledge transfer score Vs. post-test empathy score	-0.05	NS	0.04	NS
Intervention knowledge transfer score Vs. post-test activism orientation scale	-0.06	NS	0.06	NS
Intervention knowledge transfer score Vs. change in actions taken [†]	-0.17	NS	-0.17	NS
Evaluation knowledge transfer score Vs. post-test knowledge score	0.03	NS	0.11	NS
Total knowledge transfer score Vs. post-test knowledge score	0.29	NS	0.38	<0.05*
Total knowledge transfer score Vs. change in knowledge score [□]	0.40	<0.05*	0.38	<0.05*
Total knowledge transfer score Vs. post-test empathy score	-0.04	NS	-0.07	NS
Total knowledge transfer score Vs. post-test activism orientation scale	-0.02	NS	0.01	NS
Total knowledge transfer score vs. change in actions taken [†]	-0.21	NS	-0.26	NS

[^]For all questions N = 30

*Denotes statistical significance at $p < 0.05$

[†]Analysis controlled for the pre-test value of actions taken score

[□]Analysis controlled for the pre-test value of knowledge score

Table 7. Empathy Scale Individual Questions and Responses from Participants in FRES 1020, Fall 2010[^].

Question (Possible range 0-5)	Pre-test (SD)	Post-test (SD)	Change (SD)	p-value
e1. I sometimes find it difficult to see things from the "other guy's" point of view.	3.3 (1.3)	3.3 (1.3)	-0.00 (1.2)	NS
e2. I often have tender, concerned feelings for people less fortunate than me.	3.7 (1.4)	4.0 (0.8)	0.3 (1.1)	NS
e3. Sometimes I don't feel very sorry for other people when they are having problems.	3.0 (1.4)	3.1 (1.3)	0.1 (1.5)	NS
e4. I try to look at everybody's side of a disagreement before I make a decision.	3.6 (1.2)	3.7 (1.0)	0.1 (0.8)	NS
e5. When I see someone being taken advantage of, I feel kind of protective towards them.	4.2 (0.7)	4.0 (0.8)	-0.2 (0.7)	NS
e6. I sometimes try to understand my friends better by imagining how things look from their perspective.	3.5 (0.6)	3.9 (0.8)	0.4 (0.8)	<0.01*
e7. Other people's misfortunes do not usually disturb me a great deal.	4.0 (1.0)	3.8 (1.1)	-0.2 (1.1)	NS
e8. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.	2.4 (1.5)	2.6 (1.2)	0.2 (1.3)	NS
e9. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.	4.2 (0.7)	4.0 (1.1)	-0.2 (1.1)	NS
e10. I am often quite touched by things that I see happen.	4.1 (0.9)	3.8 (1.0)	-0.3 (1.0)	NS
e11. I believe that there are two sides to every question and try to look at them both.	3.4 (1.2)	3.7 (0.9)	0.3 (0.8)	<0.10
e12. I would describe myself as a pretty soft-hearted person.	3.6 (1.3)	3.5 (1.2)	-0.1 (0.6)	NS
e13. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.	2.5 (1.1)	2.9 (1.2)	0.4 (1.2)	<0.10
e14. When I see people who don't have enough to eat, I sometimes don't feel very much pity for them.	3.90 (1.3)	3.80 (1.4)	-0.1 (1.5)	NS
e15. Before criticizing somebody, I try to imagine how I would feel if I were in their place.	3.0 (1.0)	3.2 (1.0)	0.2 (0.8)	NS
e16. I often have tender, concerned feelings for people who often don't have	4.1 (0.9)	4.1 (0.8)	0.0 (0.7)	NS

enough to eat.				
e17. Sometimes I don't feel very sorry for other people who don't have enough to eat.	4.0 (1.1)	3.8 (1.2)	-0.2 (1.5)	NS

^For all questions N = 30

*Denotes statistical significance at $p < 0.05$

SD = Standard Deviation

Table 8. Summaries for Empathy Scales used in FRES 1020, Fall 2010.

Grouping	N	Pre-test Mean (SD), Range	Post-test Mean (SD), Range	Change Mean (SD)	p-value
Empathetic concern scale questions (e2, e3, e5, e7, e9, e10, e12), possible range: 0-35	30	26.6 (4.6), 17-34	26.3 (4.8), 16-34	-0.3 (3.3)	NS
Perspective taking scale questions (e1, e4, e6, e8, e11, e13, e15), possible range: 0-35	30	21.7 (5.4), 8-33	23.2 (5.0), 14-31	1.5 (3.5)	<0.05*
Combined original empathy scale (e1-e13, e15), possible range: 0-70	30	48.3 (8.3), 31-66	49.5 (7.7), 30-65	1.2 (5.8)	NS
Hunger themed questions (e14, e16, e17), possible range: 0-15	30	12.0 (2.7), 5-15	11.7 (2.8), 6-15	-0.3 (2.7)	NS
Tuesday section	17	58.5 (9.9), 42-81	59.4 (8.8), 44-77	0.9 (6.5)	NS
Thursday section	13	62.8 (8.7), 42-71	63.6 (9.5), 40-80	0.8 (7.4)	NS
Male	20	58.0 (6.5), 49-68	60.8 (9.0), 47-80	2.8 (4.0)	<0.10
Female	10	61.5 (10.6), 42-81	61.4 (9.5), 40-77	-0.1 (7.7)	NS
Total empathy score (e1-e17), possible range: 0-95	30	60.3 (9.5), 42-81	61.2 (9.2), 40-80	0.9 (3.5)	NS

*Denotes statistical significance at $p < 0.05$
SD = Standard Deviation

Table 9. Activism Orientation Scale Individual Questions and Responses from Participants in FRES 1020, Fall 2010[^].

Question (Possible range 0-5)	Pre-test (SD)	Post-test (SD)	Change (SD)	p-value
a1. How likely is it you will engage in hunger-related activities in the future?	4.2 (0.9)	4.2 (0.9)	-0.0 (0.7)	NS
a2. How likely are you to display a poster or bumper sticker with a message about fighting hunger?	2.6 (1.6)	2.5 (1.7)	-0.1 (1.5)	NS
a3. How likely are you to invite a friend to attend a meeting of an organization fighting hunger?	3.7 (1.3)	3.5 (1.2)	-0.2 (1.2)	NS
a4. How likely are you to purchase a poster, t-shirt, etc. that endorses a fighting hunger point of view?	3.8 (1.5)	3.8 (1.3)	0.0 (1.2)	NS
a5. How likely are you to serve as an officer in an organization fighting hunger?	3.0 (1.1)	2.9 (1.3)	-0.1 (1.0)	NS
a6. How likely are you to attend an informational meeting about fighting hunger?	3.5 (1.1)	3.5 (1.2)	0.0 (0.9)	NS
a7. How likely are you to organize an event benefiting hunger relief (e.g., Talk, food drive, March)?	3.2 (1.1)	3.0 (1.2)	-0.2 (1.2)	NS
a8. How likely are you to give a lecture or talk about hunger?	1.9 (1.2)	2.0 (1.5)	0.1 (1.6)	NS
a9. How likely are you to go out of your way to collect information on hunger issues?	2.9 (1.0)	2.7 (1.1)	-0.2 (1.1)	NS
a10. How likely are you to present facts to contest another person's view of hunger-related issues?	3.3 (1.2)	3.4 (1.0)	0.1 (1.4)	NS
a11. How likely are you to donate money to an organization fighting hunger?	3.6 (1.4)	3.7 (1.2)	0.1 (1.3)	NS
a12. How likely are you to send a letter or email expressing your opinions on hunger to the editor of a school or community newspaper or a television show?	2.0 (1.3)	2.4 (1.4)	0.4 (1.5)	NS
a13. How likely are you to express your opinions about hunger by blogging or social networking?	2.4 (1.7)	2.8 (1.6)	0.4 (1.4)	NS
a14. How likely are you to confront jokes, statements, or innuendoes that marginalize the problem of world hunger?	2.9 (1.3)	3.1 (1.4)	0.2 (1.2)	NS
a15. How likely are you to distribute information representing the cause of a particular agency that helps fight hunger?	3.3 (1.1)	3.4 (1.1)	0.1 (1.2)	NS

a16. How likely are you to send a letter or email expressing your opinions on hunger to a public official?	2.3 (1.3)	2.4 (1.5)	0.1 (1.5)	NS
a17. How likely are you to attend a talk presented by a particular agency that helps fight hunger?	3.2 (1.1)	3.1 (1.1)	-0.1 (1.1)	NS
a18. How likely are you to attend a planning session for a particular agency that helps fight hunger?	3.2 (1.1)	2.9 (1.1)	-0.3 (1.2)	NS
a19. How likely are you to sign a petition supporting a hunger-related policy?	4.3 (1.0)	4.3 (0.8)	0.0 (0.9)	NS
a20. How likely are you to encourage a friend to join a group that helps fight hunger?	4.0 (1.1)	3.7 (1.2)	-0.3 (1.0)	NS
a21. How likely are you to try to change a friend's or acquaintance's mind about a hunger related issue?	3.7 (1.1)	3.8 (1.2)	0.1 (0.9)	NS
a22. How likely are you to donate money to an organization that supports fighting hunger?	3.7 (1.3)	3.8 (1.3)	0.1 (1.1)	NS
a23. How likely are you to try to change a relative's mind about a hunger-related issue?	3.7 (1.2)	3.9 (1.2)	0.2 (1.1)	NS
a24. How likely are you to keep track of views of members of Congress regarding hunger issues?	2.1 (1.2)	2.2 (1.2)	0.2 (1.2)	NS
a25. How likely are you to participate in discussion groups designed to discuss issues or solutions to hunger-related issues?	3.2 (1.7)	3.1 (1.2)	-0.1 (1.4)	NS
a26. How likely are you to campaign by phone for an organization that fights hunger?	1.5 (1.2)	1.6 (1.3)	0.1 (1.0)	NS
a27. How likely are you to engage in any political activity in which you fear for your personal safety?	1.8 (1.6)	1.6 (1.2)	-0.2 (1.6)	NS
a28. How likely are you to purchase a product from a company because they support the fight against hunger?	3.7 (1.2)	3.9 (1.3)	0.2 (1.0)	NS
a29. How likely are you to volunteer to help raise awareness about hunger?	3.8 (1.2)	3.8 (1.2)	0.0 (1.3)	NS
a30. How likely are you to participate in volunteer activities that fight hunger (food drive, gleaning, fasting, etc...)?	4.3 (1.0)	4.3 (0.8)	0.0 (1.0)	NS

[^]For all questions N = 30

*Denotes statistical significance at $p < 0.05$

SD = Standard Deviation

Table 10. Summaries of Activism Orientation Scale Questions from Participants in FRES 1020, Fall 2010.

Grouping (Possible range 0-150)	N	Pre-test Mean (SD), Range	Post-test Mean (SD), Range	Change (SD)	p-value
Tuesday section	17	87.8 (22.4), 52-130	89.3 (21.2), 48-125	1.5 (13.9)	NS
Thursday section	13	104.1 (25.7), 35-131	103.5 (26.8), 51-148	-0.6 (27.2)	NS
Male	20	80.3 (24.9), 35-117	88.6 (28.3), 48-148	8.3 (18.8)	NS
Female	10	102.2 (21.9), 52-131	98.9 (22.2), 51-137	-3.3 (20.4)	NS
Total activism orientation scale	30	94.9 (24.8), 35-131	95.4 (24.5), 48-148	0.5 (20.4)	NS

SD = Standard Deviation

Table 11. Summaries of Actions Taken by Participants in FRES 1020, Fall 2010.

Grouping (Possible range 0-∞)	N	Pre-test Mean (SD), Range	Post-test Mean (SD), Range	Change (SD)	p-value
Tuesday section	17	0.5 (0.7), 0-2	1.4 (0.6), 1-3	0.9 (0.8)	<0.01*
Thursday section	13	0.5 (0.8), 0-2	1.3 (0.8), 0-3	0.8 (0.9)	<0.05*
Male	20	0.4 (0.7), 0-2	1.3 (0.8), 0-3	0.9 (0.7)	<0.05*
Female	10	0.6 (0.8), 0-2	1.4 (0.6), 1-3	0.8 (0.9)	<0.01*
Total	30	0.5 (0.7), 0-2	1.4 (0.7), 0-3	0.8 (0.8)	<0.001*

*Denotes statistical significance at $p < 0.05$
SD = Standard Deviation

Table 12. Relationships Among Knowledge Scores, Empathy Scores, Action Scores, and Actions Taken Scores from Participants in FRES 1020, Fall 2010[^].

Comparison	Spearman ρ	Spearman p-value	Pearson r	Pearson p-value
Pre-test knowledge score vs. pre-test empathy score	0.09	NS	0.08	NS
Pre-test knowledge score vs. pre-test activism orientation scale	-0.03	NS	0.00	NS
Pre-test knowledge score vs. pre-test actions taken score	0.06	NS	0.09	NS
Pre-test empathy score vs. pre-test activism orientation scale	0.75	<0.001*	0.71	<0.001*
Pre-test empathy score vs. pre-test actions taken score	0.12	NS	0.16	NS
Pre-test activism orientation scale vs. pre-test actions taken score	0.02	NS	0.07	NS
Post-test knowledge score vs. post-test empathy score [±]	0.12	NS	0.01	NS
Post-test knowledge score vs. post-test activism orientation scale ²	0.21	NS	0.16	NS
Post-test knowledge score vs. post-test actions taken score [±]	-0.50	<0.01*	-0.53	<0.01*
Post-test empathy score vs. post-test activism orientation scale ²	0.54	<0.01*	0.48	<0.02*
Post-test empathy score vs. post-test actions taken score [±]	-0.19	NS	0.22	NS
Post-test activism orientation scale vs. post-test actions taken score [±]	-0.20	NS	-0.13	NS

[^]For all questions N = 30

[±]Analysis controlled for the pre-test values of both variables

*Denotes statistical significance at $p < 0.05$

SD = Standard Deviation

CHAPTER 4 CONCLUSIONS

The primary question of this study asked “what is the impact of a freshman seminar about world hunger on student learning, empathy, and action towards hunger?” The results show that knowledge was significantly increased over the course of the seminar and high levels of knowledge transfer were associated with that increase in knowledge. While quantitatively no significant difference in total empathy score and total activism orientation score were found, post-test scores showed an increase in the number of hunger-related activities compared to the pre-test scores, and student hunger activity responses (Appendix C) showed a great deal of empathy and willingness to act in the future.

The first specific aim of the study was to develop a curriculum for a seminar on world hunger based on interactive principles that encourage learning that leads to a lasting change that is important in the learner’s life. A broad range of subjects including nutrition, epidemiology, chemistry, political science, biology, microbiology, public policy, history, and many other topics were blended to form a rich educational landscape that interested students no matter their chosen discipline or academic major. It drew on practical examples from current issues to illustrate key points and opened the minds of students to problems that were presented in a tangible manner. The curriculum developed, much like the study outcomes, provides an exceptional starting point for future courses.

Recently a three credit course in the Department of Foods and Nutrition at The University of Georgia entitled FDNS 3200: World Hunger and Human Nutrition was approved as a new course offering. During the process of transition from the one credit course upon which this study was based to a new three credit course, there are many subject areas to expand. The sections on maternal and infant health should be lengthened considerably given their importance

to long-term human health and wellbeing as evidenced by their inclusion in the Millennium Development Goals (UN, 2010). Micronutrient content should be strengthened by adding information on zinc, vitamin B12, and folic acid. Sanitation was framed as one of several causes of morbidity or as a component of a planned intervention during the freshman seminar. This subject should stand alone in order to give proper recognition for important roles in the agricultural setting, management of food systems, transportation, distribution, and general health in both the developed and developing worlds. Given the partnerships needed among human nutrition, food science, and agriculture, additional information showing successful collaborations among these disciplines could be added to the course through case studies and guest lecturers to encourage students from a wider spectrum of disciplines to not only take the course, but understand the multi-faceted approach the subject requires. Focusing on these and other human-health related dimensions will help the course become increasingly complementary to others taught in the university setting. Furthermore, students could be encouraged to form new clubs or partner with existing organizations by holding awareness programs, volunteer projects, or participating in other activities such as attending a conference or a rally. Frequent hands-on, activity-based learning experiences (something of which student evaluators wanted more) will enrich classroom learning and may attract more students from a variety of subject interests to take up this noble cause.

It should be made clear that hunger can be fought with the pen or the shovel, from behind a movie camera or in the laboratory. In my opinion, students should be encouraged to learn about hunger from the perspective of the journalist or the mathematician and share how different disciplines can address issues discussed in class. Instructors should challenge the class to study multiple sides of the same problem and debate proposed solutions. Student could be required to

develop short talks on hunger issues with others assigned to be discussion leaders, encouraging a dialogue between students, something that was lacking at times during this initial offering.

Frequent expert interaction in the form of guest lecturers, recorded interviews, or other formats would put faces to issues and provide tangible connections between experts and information presented. Further, highlighting the diversity within the subject should also entail a focus on positive outcomes. Profiling places that have successfully eradicated a life-threatening disease or a micronutrient deficiency could encourage a departure from cynicism and foster a positive environment where students realize that alleviating or ending manifestations of hunger and poverty are attainable goals.

The second specific aim was to develop an evaluation tool that assesses the change in student knowledge, knowledge transfer, empathy, activism orientation, and actions taken towards hunger issues. Knowledge scores were measured with a pre-test post-test questionnaire. Drafting clear and understandable test questions is an important step in ensuring the validity of a study. While questions were scrutinized by the course developers, soliciting more outside opinions and critiques could increase instrument readability, reliability, and validity, providing an even stronger basis for further analysis. Finding that gains in knowledge and better knowledge transfer were significantly correlated was quite welcome given the complexity of the construct. Clearer, more understandable knowledge questions could help better define this relationship. In a similar vein, multiple questions developed with a consistent method and rubric could be presented to students to gain a more complete picture of their level of knowledge transfer and correlations with other study measures.

Although the number of hunger-related actions did increase significantly, the empathy and willingness to act measurements were unchanged, consistent with previous studies indicating

that these measures are stable within individuals. The goal of measuring changes in these constructs by modifying scales that were originally designed with construct stability and test consistency in mind should be taken into account when interpreting these results. Many people would agree with a statement such as “I often have tender, concerned feelings for people who often don’t have enough to eat” (Appendix A), so informing people of issue specifics may not even be detectable using quantitative measures. However, upon informal qualitative analysis, student responses clearly illustrate increased empathy using emotional language to describe their experiences, and many believed they would participate in similar activities after their initial volunteer experiences in the community. Providing more opportunities for students to act while addressing numerous motivational factors during the course might bring about a general increase in overall willingness to act. Profiling philanthropists or scientists with interesting stories who employed creative approaches before teaching a module on a related topic, or telling students about contests that challenge young people to tackle complex problems may provide the spark of inspiration needed to think differently whereas a traditional classroom environment might fall short of such a result.

Further analysis of existing data such as formal qualitative analysis of responses to the hunger activity responses might reveal which activities elicited the greatest change in empathy or activism orientation. This includes measuring the number of hours spent on an activity, location, whether the activity was done alone, with friends, or with a group of strangers, the kinds of activities, if the setting was secular or religious, and a host of other categories by which to organize experiences and tease out relationships that might better answer the study question. If increases (or decreases) in empathy and willingness to act over a three-month period are indeed quantitatively measurable, using different instruments might be warranted.

The final specific aim was to administer the proposed seminar curriculum and evaluation, and determine the outcome of the course on student knowledge, knowledge transfer, empathy, activism orientation, and actions taken towards hunger issues. The hypothesis for this specific aim was that upon completion students would possess the knowledge and will to pursue the fight against world hunger and the seminar would be an adequate curriculum upon which to base future courses in this area of study. Knowledge was effectively imparted, but a strong will toward future action is still up for debate.

Even a significant increase in willingness to act may not translate to actions taken. Prochaska and DiClemente proposed their Transtheoretical Model of behavior change centered on the sequence from precontemplation, to contemplation, preparation, action, and maintenance they called the *Stages of Change*. The theory takes into account the temporal dimension of behavior change and acknowledges that it is a thought process that is not limited to a period of hours or days (Prochaska and DiClemente, 1983). Students in this study might have moved from precontemplation or contemplation to preparation or even action, possibly exhibited by an increased motivation to learn about poverty issues in their local community. However, few students can be expected to move from a fleeting interest in a subject to scores of volunteer hours in such a short time frame. Assessing the *Stages of Change* could include multiple choice probing questions developed from the hunger activity responses in Appendix C. Written responses or periodic journal entries could be formally qualitatively analyzed for words, phrases, or other predetermined criteria to place each student on the continuum of the *Stages of Change*. Using this theoretical model in the development of evaluations administered several times during a semester could yield a more sensitive evaluation of changes in thought processes, instead of basing measurements solely on willingness to act and number of actions.

Students significantly increased actions taken in the past three months between the pre-test and post-test time points. While the results on willingness to act are mixed, in future studies it will be necessary to refine current measures and possibly add additional time points in six months or one year after the course to allow students time to participate in hunger-related activities. They could be asked to participate in a reunion class or contacted via mail or email. Follow up might involve a similar battery of evaluations including the empathy scale and Activism Orientation Scale with the addition of an activity frequency questionnaire and instruments designed to assess progress using the Transtheoretical Model (Prochaska and DiClemente, 1983).

Future hunger-related courses should embrace the diversity of the subject matter and use it as an even greater teaching tool. A course that focuses on hunger should cast a wide net and work to inform students of problems they can solve using any number of educational foundations since it is not required for any major in particular. Hearing both disheartening and inspiring stories alike may spark the motivation and curiosity needed to learn more than just facts about world hunger.

These results provide evidence for cautious optimism in the designing of courses focused on world hunger and human nutrition that positively impacts knowledge, knowledge transfer, empathy, activism orientation, and actions taken towards hunger issues. It serves as a template to guide future leaders in learning about the obligations of global citizenry and the importance of working to achieve the first Millennium Development Goal: a final ending to worldwide hunger and poverty.

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APPENDICES

Appendix A: Pre-/ Post-Test

Note: This is the pre-test version. The “don’t know” option on multiple choice questions and multiple choice questions #27 and #52 were removed for the post-test version; otherwise this version is shown exactly how the students received it aside from changes in margins and page spacing.

Greetings!

You are not expected to know any of these answers! We just want to find out what you know so far. Please answer EVERY question. There is (-1) point for each skipped question. This is worth 50 points. Thank you!

FRES 1020 PRE/POST-TEST

Name: _____

Age: _____

Gender: Male Female

1. Majors you are considering?

OK to list more than one): _____

Or Undecided

2. Educational experience (formal or otherwise such as employment, travel, or volunteer work) between high school and college:

3. Did you join college immediately following high school? Yes No

If “no,” then explain what you did between high school and college:

4. In the past 3 months, in how many activities that focused on fighting domestic or international hunger have you participated in? Circle your answer: 0 1 2 3 4
5 or more

5. If you participated in one or more hunger-related activities in the past 3 months, please list them here:

PLEASE CIRCLE YOUR ANSWERS FOR THE NEXT SERIES OF QUESTIONS

Does not describe									Describes me
me well	0	1	2	3	4	5			very well

1. I sometimes find it difficult to see things from the "other guy's" point of view.
0 1 2 3 4 5
2. I often have tender, concerned feelings for people less fortunate than me.
0 1 2 3 4 5
3. Sometimes I don't feel very sorry for other people when they are having problems.
0 1 2 3 4 5
4. I try to look at everybody's side of a disagreement before I make a decision.
0 1 2 3 4 5
5. When I see someone being taken advantage of, I feel kind of protective towards them.
0 1 2 3 4 5
6. I sometimes try to understand my friends better by imagining how things look from their perspective.
0 1 2 3 4 5
7. Other people's misfortunes do not usually disturb me a great deal.
0 1 2 3 4 5
8. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.
0 1 2 3 4 5
9. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
0 1 2 3 4 5
10. I am often quite touched by things that I see happen.
0 1 2 3 4 5
11. I believe that there are two sides to every question and try to look at them both.
0 1 2 3 4 5
12. I would describe myself as a pretty soft-hearted person.
0 1 2 3 4 5
13. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
0 1 2 3 4 5
14. When I see people who don't have enough to eat, I sometimes don't feel very much pity for them.
0 1 2 3 4 5

11. How likely are you to donate money to an organization fighting hunger?

0 1 2 3 4 5

12. How likely are you to send a letter or email expressing your opinions on hunger to the editor of a school or community newspaper or a television show?

0 1 2 3 4 5

13. How likely are you to express your opinions about hunger by blogging or social networking?

0 1 2 3 4 5

14. How likely are you to confront jokes, statements, or innuendos that marginalize the problem of world hunger?

0 1 2 3 4 5

15. How likely are you to distribute information representing the cause of a particular agency that helps fight hunger?

0 1 2 3 4 5

16. How likely are you to send a letter or email expressing your opinions on hunger to a public official?

0 1 2 3 4 5

17. How likely are you to attend a talk presented by a particular agency that helps fight hunger?

0 1 2 3 4 5

18. How likely are you to attend a planning session for a particular agency that helps fight hunger?

0 1 2 3 4 5

19. How likely are you to sign a petition supporting a hunger-related policy?

0 1 2 3 4 5

20. How likely are you to encourage a friend to join a group that helps fight hunger?

0 1 2 3 4 5

21. How likely are you to try to change a friend's or acquaintance's mind about a hunger related issue?

0 1 2 3 4 5

22. How likely are you to donate money to an organization that supports fighting hunger?

0 1 2 3 4 5

23. How likely are you to try to change a relatives mind about a hunger-related issue?

0 1 2 3 4 5

24. How likely are you to keep track of views of members of Congress regarding hunger issues?

0 1 2 3 4 5

25. How likely are you to participate in discussion groups designed to discuss issues or solutions to hunger-related issues?

0 1 2 3 4 5

26. How likely are you to campaign by phone for an organization that fights hunger?

0 1 2 3 4 5

27. How likely are you to engage in any political activity in which you fear for your personal safety?

0 1 2 3 4 5

28. How likely are you to purchase a product from a company because they support the fight against hunger?

0 1 2 3 4 5

29. How likely are you to volunteer to help raise awareness about hunger?

0 1 2 3 4 5

30. How likely are you to participate in volunteer activities that fight hunger (food drive, gleaning, fasting, etc...)?

0 1 2 3 4 5

PLEASE CHOOSE ONLY ONE OF THE FOLLOWING ANSWERS FOR THE NEXT SERIES OF QUESTIONS

1. During the past few years, the prevalence of poverty has:

Stayed about the same

Decreased

Increased

Don't know

2. During the past few years, the prevalence of hunger has:

Stayed about the same

Decreased

Increased

Don't know

3. What is the percentage of worldwide hunger is due to causes other than war, corruption, or natural disaster?

52%

76%

84%

92%

Don't know

4. Name three organizations, including their specific focus, that aim to fight hunger domestically:

a.

b.

c.

5. About how many calories on average do people need daily?

Just over 3000

Just over 2500

Just over 2000

Just over 1000

Don't know

6. Worldwide about how many people do not get enough food to be healthy and lead an active life?

About 1 person in every 6

About 1 person in every 16

About 1 person in every 60

About 1 person in every 600

Don't know

7. About how many individuals die worldwide of hunger-related causes each day?

1,000

10,000

25,000
50,000
Don't know

8. Most hungry people live in urban rather than rural areas.

True
False
Don't know

9. Worldwide the number of hungry people is greater than AIDS, malaria and tuberculosis combined.

True
False
Don't know

10. Most hungry people live where?

Sub-Saharan Africa
Latin American and the Caribbean
Near East and North Africa
Asia and the Pacific regions
Don't know

11. What is the number of people worldwide who suffer from hunger?

500 million
100 million
1 billion
1.5 billion
Don't know

12. Seeds meant to boost crop yields don't work well in the nutrient depleted soils in Sub-Saharan Africa

True
False
Don't know

13. Sub-Saharan Africa is one of few regions in the world that cannot grow enough food to feed the population. Which of the following would not help alleviate this problem?

Developing methods to increase yields such as no-till farming
Providing food aid to the population
Government provided subsidies for seed and fertilizer
Educating the population on organic methods of returning nutrients to the soil
Don't know

14. Which of the following is not a primary soil macronutrient?

Potassium
Phosphorus

Nitrogen

Iron

Don't know

15. What are the United Nations' Millennium Development Goals?

A five-plank plan to develop the food system of Sub-Saharan Africa's five fastest growing cities

Eight time-bound targets that aim to end extreme poverty worldwide by 2015

An initiative devised to jump start Southeast Asia and Latin America's commercial agricultural sectors

A framework for making the world's ten most populous cities well fed and environmentally sustainable

Don't know

16. What does the term "undernutrition" mean?

A recent and severe process, such as starvation, that led to substantial weight loss

Chronic malnutrition that reflects a long-term problem in a population; measured as height-for-age in a child

Too little food, too much food, and/or low intake of vitamins or minerals

A child has a low weight-for-age that could be caused by acute or chronic malnutrition

Don't know

17. What does the term "wasting" mean?

A recent and severe process, such as starvation, that led to substantial weight loss

Chronic malnutrition that reflects a long-term problem in a population; measured as height-for-age in a child

Assessed by weight-for-age in children

Too little food, too much food, and/or low intake of vitamins or minerals

Don't know

18. What does the term "stunting" mean?

A recent and severe process, such as starvation, that led to substantial weight loss

Chronic malnutrition that reflects a long-term problem in a population; measured as height-for-age in a child

A child has a low weight-for-age that could be caused by acute or chronic malnutrition

Too little food, too much food, and/or low intake of vitamins or minerals

Don't know

19. Which of the following is not characteristic of a population in nutrition transition?

From plant based diets and intense activity to high processed and animal foods as well as sedentary lifestyle

Obesity later in life in those with low, medium, or high social economic status

Higher birth weights across the population

Low height for age across the younger population

Don't know

20. In the developing world, many households contain both an underweight and an overweight member.

True

False

Don't know

21. Concurrent undernutrition and obesity is a hallmark of nutrition transition in developing countries.

True

False

Don't know

22. Which of the following is not a cause of nutrition transition in developing countries?

Worldwide shift from rural to urban living

Industrializing nations tend to consume more dietary meat

Western restaurants are moving into the third world

Third world countries are producing more calories than they need

Don't know

23. Which of the following is not considered a cause of low birth weight in newborn infants?

Obese mother

Folic acid toxicity

Multiple baby birth

Premature birth

Don't know

24. Recommendations for breastfeeding for mothers with HIV/AIDS are:

Avoid in US, but promote in developing countries

Avoid in developing countries, but promote in US

Mothers in every country should breastfeed even if they have HIV/AIDS

Don't know

25. Infants should begin eating some complementary foods starting at age:

3 months

6 months

12 months

18 months

Don't know

Iron, vitamin A, iodine, zinc, folic acid, vitamin B12, and other vitamins and minerals are called "micronutrients." The next few questions are about micronutrients.

26. About how much does it cost to fortify foods with various micronutrients?

Around 10 cents for each micronutrient per day

Around 10 cents for each micronutrient per week

Around 10 cents for each micronutrient per month

Around 10 cents for each micronutrient per year
 Don't know

27. A deficiency of this micronutrient leads to about 800,000 deaths annually in children and contributes to growth failure and weakened immunity in young children:

- Iron deficiency
- Vitamin A deficiency
- Iodine deficiency
- Zinc deficiency
- Don't know

28. A deficiency of this micronutrient occurs in about 800 million people worldwide and leads to mental impairment in children born of mothers who did not consume enough of this nutrient during pregnancy:

- Iron deficiency
- Vitamin A deficiency
- Iodine deficiency
- Zinc deficiency
- Don't know

29. The most common nutritional deficiency in the world that affects billions of people and damages a country's productivity and impedes cognitive development is?

- Iron deficiency
- Vitamin A deficiency
- Iodine deficiency
- Zinc deficiency
- Don't know

30. What is the most common nutrition-related deficiency in the world?

- Protein malnutrition
- Iodine deficiency
- Vitamin A deficiency
- Nutrition-related anemia
- Don't know

31. What is anemia?

- The rapid increase of white blood cells
- Low levels of red blood cells
- The rapid decrease of white blood cells
- An infection in the blood stream
- Don't know

32. The leading cause of blindness in developing countries is?

- Iron deficiency
- Vitamin A deficiency
- Iodine deficiency

Zinc deficiency
Don't know

33. A deficiency of this micronutrient increases the risk of dying from malaria, measles, and diarrhea:

Iron deficiency
Vitamin A deficiency
Iodine deficiency
Zinc deficiency
Don't know

34. The most common symptoms of vitamin B12 deficiency at anytime during the lifecycle are:

Heart disease and cancer
Thyroid gland problems
Anemia and problems with the nervous system
All of the above
Don't know

35. The most common symptoms of zinc deficiency from birth to two years of age are:

Diabetes, heart disease, cancer
Impaired rates of growth, diarrhea, poor immune system
Poor immune system and heart disease
All of the above
Don't know

36. The body can absorb zinc best from:

Breads and cereals
Fruits and vegetables
Absorption of zinc is about the same from any food source
Foods from animals (such as milk, meat, chicken)
Don't know

37. The body can absorb iron best from:

Milk
Meat
Vegetables
All of the above are about the same
Don't know

38. Fermentation increases the iron available for absorption.

True
False
Don't know

39. Drying a product reduces the iron available for absorption.

True

False
Don't know

40. Eating low amounts of foods from animals is a major risk factor for which of the following micronutrient deficiencies?

Folic acid
Vitamin B12
Vitamin A
All of the above
Don't know

41. Compared to people living in coastal areas, people living in mountainous areas are at risk of being deficient in:

Iron
Zinc
Iodine
All of the above
Don't know

42. Supplementation with which micronutrients is routinely recommended for pregnant women in both developed and developing countries?

Iron, folic acid, and zinc
Zinc and vitamin A
Iron and folic acid
None of the above
Don't know

43. Micronutrients from foods are always absorbed better than nutrients from supplements.

True
False
Don't know

44. Iodine can be provided to people by:

Adding iodine to salt
Giving injections of iodine to people
Putting iodine in the drinking water
All of the above
Don't know

45. What is the cost of iodine deficiency compared to the cost of iodine supplementation?

10:1
25:1
71:1
150:1
Don't know

46. ***Developed countries include countries such as the US, Canada, Britain, and Australia. In developed countries, the term “food insecurity” is often used instead of the term “hunger.”***

What does the term “food insecurity” mean?

Too little food, too much food, and/or low intake vitamins or minerals

Access to adequate food is limited by a lack of money and other resources

Eating too many food additives from processed foods

All of the above

Don't know

47. About what percentage of the US population is food insecure?

About 5%

About 10%

About 15%

About 20%

Don't know

48. About 1 in 5 children in the US suffered from food insecurity at some point during 2008.

True

False, more children suffered from food insecurity

False, fewer children suffered from food insecurity

Don't know

49. In the US, the risk of being food insecure is highest in which of these situations?

Households with elderly people

Black or Hispanic households

Households with children headed by single women

All of these are about the same

Don't know

50. In the US, the risk of being food insecure is lowest in which of these situations?

Households with elderly people

Black or Hispanic households

Households with children headed by single women

All of these are about the same

Don't know

51. About how many food-insecure households participate in at least one of the three major US federal food assistance programs – Supplemental Nutrition Assistance Program (formerly the Food Stamp Program), The National School Lunch Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children?

About 25%

About 50%

About 75%

More than 90%

Don't know

52. Feeding America is the leading domestic hunger-relief charity in the US. Their mission is to feed America's hungry through a nationwide network of member food banks and engage our country in the fight to end hunger. About how many people does this agency serve weekly?

- About 2 million
- About 4 million
- About 6 million
- About 12 million
- Don't know

53. About how many people in the US are receiving food stamps (now known as the Supplemental Nutrition Assistance Program)? *Note there are about 310 million people in the US*

- About 10 million
- About 20 million
- About 40 million
- About 60 million
- Don't know

54. About how many people in the US receive assistance from the Supplemental Nutrition Assistance for Women, Infants, and Children (WIC) program? *Note there are about 310 million people in the US*

- About 10 million
- About 20 million
- About 40 million
- About 60 million
- Don't know

55. In developed countries, food insecurity has been associated with a decreased the risk of having diabetes.

- True
- False
- Don't know

56. In developed countries, food insecurity has been associated with higher rates of depression and other mental health related disorders.

- True
- False
- Don't know

57. In developed countries, food insecurity has been associated with higher rates of and/or drug-related problems.

- True
- False
- Don't know

58. In developed countries, food insecurity has been associated with higher rates of domestic violence.

- True

False
Don't know

59. In developed countries in low-income families food insecurity has been associated with an increased risk of iron deficiency anemia.

True
False
Don't know

60. In developed countries, people who have diabetes and are also food insecure are more likely to have unmet health care needs.

True
False
Don't know

61. In developed countries, people who have diabetes and are also food insecure are more likely to have a mood disorder.

True
False
Don't know

62. In developed countries, people who have diabetes and are also food insecure are more likely to feel more stress.

True
False
Don't know

Hooray – you are done.

Be sure you answered every question because there is (-1) for any skipped question.

Feel free to get a snack when you are done. Thank you!

Appendix B: Knowledge Transfer Question

Note: This question is shown exactly how the students received it aside from changes in margins and page spacing.

You are part of a mission group that has visited the same village every year for the past five years. You notice that the prevalence of anemia in the 18-month old children is a little higher each year. Also, while visiting several families, you notice that the children have a lot of fun playing in the puddles, no one wears shoes, most families have two or more children under age five years, only children under age one year are being breast fed, and the 18-month old children are usually eating only a thin watery cereal a few times a day.

- A. What might be some causes of anemia in these children?
- B. Set up a multi-step approach to address these various causes of anemia.
- C. At your next yearly visit, how would you determine how well your approaches to decreasing anemia are working?

Appendix C: Hunger Activity Instructions and Responses

Note: This assignment is shown exactly how the students received it aside from changes in margins and page spacing.

FRES 1020 Freshman Seminar: Let the Big World Eat, Fall 2010
UGA Department of Foods and Nutrition, College of Family and Consumer Sciences

Hunger Activity Steps

** Indicates something to be submitted to elc

Step 1 hunger activity: Research five non-government organizations (NGO) or other hunger related groups to which you might contribute your time or other resources. Write about five sentences describing what each does. Include the internet URL for each one.

Step 2 hunger activity: Pick three of those original five and come up with a small description of how you might give of your time and other resources to the organization (examples will be discussed in class).

** Submit steps 1 and 2 to elc by Tuesday noon Sept 7 and bring to class the next few weeks for discussion (50 points). Steps 1 and 2 should be about 1 page (2 pages maximum). Submit to elc in the "ASSIGNMENTS" tab.

Step 3 hunger activity: (optional): Form a group with other students in class and discuss implementing together one of the suggestions. Students are encouraged to also involve others outside our seminar.

Step 4 hunger activity: Formulate a draft plan of action to implement one of the activities (individually or as a group).

** Steps 3 and 4 will be discussed in class. Submit step 4 of your draft plan of action to implement an activity to elc on or before 6 pm Monday 9/20 (50 points). The plan should be around 300 to 500 words, about 1 or 2 pages long. Submit to elc in the "ASSIGNMENTS" tab.

Step 5 hunger activity: After we discuss the initial plan, we'll discuss necessary changes. Then you can begin implementing your hunger activity.

** **Step 6 hunger activity:** After you complete your hunger related activity, submit to elc a summary (about 500 words) of what you did, what you learned, and how you might use this experience to continue hunger related activities in the future. Submit Step 6 to elc on or before 6 pm Monday 11/29, the Monday after Thanksgiving (100 points). Submit to elc in the "ASSIGNMENTS" tab.

NOTE: When submitting to elc, you can paste your information into the elc assignment box OR submit it as an attachment (be sure to use a .doc extension with attachments). If you have trouble submitting to elc, please contact UGA Computer Help:

http://mlc.uga.edu/services/computer_help.html

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On Saturday, November 13th, I went with UGA SERV(ED) to the Salvation Army here in Athens. Our mission was mainly to help out around the facility. We were to clean up and sanitize the dorm areas, the bathroom quarters, the kitchen, the common areas, and basically every square inch of the facility. They told us way should also be able to prepare dinner for all the residents at the end of the days. We were projected to be working for like 4 or 5 hours. It was in much need up a tidying up, and everyone there was happy to help out. I was surprised to see how many people showed up for the project. It could have been around 50 or 60 people. We took some UGA vans over there, and when we got there they grouped us up and told us to go do a specific job. XXX and I all went to this project. XXX and I were assigned to wash the walls of the dorms. It wasn't too hard, and I helped out by cleaning the tops of these barriers because I was the only one who was tall enough to reach it. That was cool to be able to help out like that. XXX was sent to go work somewhere else as I was sent to go help clean the bathroom. The bathroom was much harder to clean. The washers and dryers had to be cleaned so that was a chore, but overall it wasn't too tough. I felt like I made a significant impact in the work I did. After that, they brought us back outside and told us they we had finished much faster than they had originally expected us to. This meant that we could depart back to UGA. It was much too early to begin preparing dinner for the residents. I was sad I wasn't going to be able to interact with any of the people there because I had looked forward to that. I also wasn't able to actually work with food and do something hunger-related. Although, I know I did make a difference and indirectly made an impact in improving the food situation in that Salvation Army because we helped to clean and do maintenance that would normally cost lots of money to get done, so they might be able to buy more healthy food and prepare it better for the residents there, so it's nice knowing that.

I learned from this experience that it's tough being homeless and that normal everyday people can just be victims of misfortune and find themselves out on the street and not know what do. I grew a greater respect for the Salvation Army and what it does for people all over the nation.

I will definitely take this experience and look for future opportunities to help out with hunger related activities just like this. I like volunteering and just lending a hand. It's needed everywhere. I'm also thinking about one day starting a homeless shelter myself, so that would be cool to do.

10

For our hunger activity project, my group and I went to the UGArden by the University of Georgia horticulture greenhouses off of Milledge Avenue and helped collect the crops. The UGArden is a student run garden that grows things from flowers to vegetables. When we went, we started off by picking tomatillos. These are tomato looking vegetables that are green and grow on vines. We learned that they are often used in foods like salsa and other Spanish dishes. After picking close to two buckets full of all the ripe ones we were instructed to take down all the vines and the fence that the plant was growing on. We did this because the ground it was on was going to be used for harvesting wheat and barley. To harvest this all across the plot we also had to remove the pumpkins that were growing there as well. After we picked about two large buckets of the pumpkins we cleaned up that area as well. With the tomatillo's and pumpkin's harvested and out of the way, we could now till the soil and spread out new seeds. We did not actually do the tilling, but another student volunteer did and left the ground ready for new

planting. With our hands, we gently tossed and spread all the wheat and barley seeds across the rows in the plot. The plot we were working on consisted of around 7 or 8 rows in all. Another activity we took part in while at the garden was picking fresh lettuce. Although bugs had eaten some of the lettuce up, a good amount of it was still good enough to pick. The heads were covered in dirt so after they were picked, they were rinsed off and cleaned so that they could be eaten. All this work was fun and enjoyable, but some “dirty” work also had to be completed before we left the site. Another thing that the garden does is make their own compost. They do this by taking all the “left over’s” around such as small limbs, dirt, decomposed crops, etc. and letting it sit. After it sits for a long time it can be used as a natural fertilizer for all the plants. They do this because they do not have access to animals in which they could use manure as the fertilizer. Our task in this process was to move the debris collected to the actual compost pile that were kept on the sides of the property. After we moved this very large pile, we spread some already made compost over it to help everything decompose. This was our “dirty work” because it got all over us and left me very dirty. After the mornings work we were done with all the help they needed for that day.

This was the first time I have ever done anything like this and I thoroughly enjoyed it. Doing something proactive to help people in need feels you leaving pretty good. Everything we had done for the day was going to be given to different refugees around the Athens area who are in need and do not have the basic provisions that are needed to survive from day-to-day. By getting out and doing something to help others I am inspired to keep the trend going and also get others involved with me. Now that I have seen and learned how the first process of obtaining food works, I would love to move to the next step and work in giving supplies to those in need. By doing this process of gleaning, I have discovered how passionate I am about helping those in need.

8

At the beginning of the semester, our group’s original idea was to go gleaning a farm in the Athens Clarke county area. Unfortunately, we were unable to find a farm that was either big enough or willing to let us come out and help. Instead we decided to go volunteer at UGAarden on Milledge Ave beside the University of Georgia Horticulture Greenhouses.

When we first arrived, we walked down to the field where a professor and his horticulture students were working. Our first task was to pick tomatillos. They look like miniature green tomatoes that are enclosed in a thin casing. We had to go through the vines and pick ones that were the correct size. Sadly, because of the odd weather this growing season, the tomatillos did not reach full size. After about thirty minutes, we finished picking the vegetable and began to help tear down the fencing the vines were growing on. We first had to clip the vines off the wire and then pull up and role the wire fencing. Luckily they let us borrow gloves so that we would not cut out hands. After finishing the teardown, we carried all the buckets of vegetables and fencing material over to the shed where they keep all the tools. Our next task was to help pick lettuce and pumpkins. The lettuce was fully-grown, but the pumpkins were small and not fully orange. The professor hoped that they would ripen after being picked. Once everything was picked, we helped carry all the vegetables to the shed.

While another volunteer tilled the soil from the areas we had just cleaned, we began to work with the compost pile. We had to shovel dried vines and other left over organic materials into the two compost piles. It was harder work because the materials were so loose. However, it was great to think about how we were helping to recycle organic materials for the next growing

season. After we had finished shoveling all the materials, we had to add some finished compost on top to help start the breakdown of the materials.

Next we went back out on the field. The professor taught us how he mixed the seeds, wheat and barley, with a kind of bacteria that helps them grow. The seeds are used because they help replenish the soil with nutrients for the next growing season. The alternate using sides of the fields so that the soil stays fertile. Then we helped sow the seeds by walking up and down the aisles and turning this device that scattered the seed. It was great to be able to plant after we had just picked. It seemed like the complete circle of farming.

This activity was very informative about the workings of a farm. I was unaware of the amount of effort it takes to keep up such a small field. I now understand more about the time and complications people in developing countries must deal when growing their own food. The weather, quality of soil, time for crop growth, and bugs that eat the crops are just a few of the problems. The causes of world hunger are a lot more personal now because I could see them first hand. This activity also allowed me to help out our local community because all the food we picked is donated to homeless shelters or needy families in the area. It makes me happy that we could help make a difference in just two hours on a Saturday morning.

In the future, I hope to go back to UGArden and help. It was a fun experience being able to work outdoors and help feed the needy people in our community. I also hope to influence more people to come and do the same. Maybe we could make a bigger difference if we all work together.

16

The volunteer activity I did was found on the website for UGA SERV(ED). This is a group from UGA formed by the Center for Leadership and Service and they have different volunteer experiences every month and so I signed up to help this month. Also, XXX volunteered with me.

November's goal was to serve the hungry and the homelessness. In this volunteer activity we cleaned the Salvation Army in Athens. I was assigned to clean the walls of the men's corridor. The men slept on bunk beds and the bunk beds were the size of what we have in the freshmen dorms. The men barely had any possessions except for a trunk or a basket full of their clothes. The bed post and the walls were very unclean and dusty. We cleaned and mopped the floors and once we were done with that, it seemed like we went back and cleaned again to make sure that we got all the areas so these men aren't living in terrible living conditions. After the men's corridor was done, which was a lot smaller than I expected, I was assigned to help the other group clean the men's bathrooms. This is when reality hit me the hardest. The conditions of their bathrooms were very unappealing. The uncleanliness makes sense since all these people are trying to find work during the daytime and the times they are in the Salvation Army building, they are just grateful for a nice shower. The bathrooms were so unclean. If the students living in the dorms didn't have the custodian ladies cleaning for us, that is the image of how dirty the men's restroom was. The stains on the floor were so hard to get off. Actually, we couldn't get one of the stains out because it had been there for so long. I helped clean the sink and what was sad was however many times we went over the sink mirror and the basin with Clorox wipes the sink managed to still look the same. One of the girls and I cleaned the sinks at least six times and then we just gave up because the grey look to the sinks seemed permanent. The showers weren't as dirty as everything else, but that may have been due to the other group already cleaning them before I got there to help.

After cleaning, we were supposed to make meals. The group realized we finished two hours before schedule and we could only start making meals after a certain time. The group told us to go ahead and leave because they had enough people waiting behind to make the meals, so we ended up not making the meals.

The experience overall was an eye opener. I've done many volunteer opportunities and this one was clearly one that affected me a lot because as the volunteer, you are placed in the home of the hungry and poor. I saw their possessions and where they slept and showered and ate. It was very sad and I hope to continue to help with the problem of hunger and homelessness especially in Athens where it's seen everywhere. I also really liked the group (UGA Serv(ED)) that took us to the Salvation Army. The people were extremely friendly and they were really organized. I will most definitely be participating in more of their volunteer ideas. I am so much more aware of the living conditions of the people in Athens and living conditions is a key component to living healthy.

1

On Saturday, November 13th, I volunteered at the Salvation Army in Athens. The Salvation Army has housing for homeless men and women, a kitchen from which it serves meals, and a thrift store. XXX and I all decided to do this weekend project together. We volunteered through Served, a campus organization, with other students. They have several different service projects throughout the year. We rode in campus buses to the Salvation Army which was pretty close to campus. It was the first time I had ever seen the building, and it was extremely interesting to see how everything worked.

First, we split up into groups to clean the shelter. I spent most of my time cleaning the men's quarters, which includes a living room, a bunk room, and a bathroom. I helped wash the walls, disinfect the beds, and clean the floors in the bunk portion of the quarters. The people that stay in the shelter were out trying to find jobs and do other things with their day. Bunk beds line the room and they get very little personal space. For this reason, I think it is important that the space they do get is a clean environment. There are a number of reasons someone may become homeless, and it's great that the Salvation Army is provided a safe, sanitary place to sleep for those in unfortunate situations. Seeing their possessions by their beds really made homelessness in Athens more real to me. Standing in their rooms really drove home that the people living in these shelters are real people who deserve to have somewhere to sleep and meals to eat. Next, I helped out in the thrift store by organizing and stocking shoes and working in the back room through which all of the donations go through. That store not only provides affordable clothing for the public, but the money also helps run the shelter so it was interesting to see that side of the organization.

We were supposed to help cook a meal next, but the timing did not work out and we had to ride the buses back to campus. Although I didn't work directly with food, I really felt like I learned a lot about the life of someone living in hunger. Through my experiences, I feel more comfortable relating to those who are hungry and homeless. This experience inspired me to return to the Salvation Army to help in any way they need and possibly cook a meal in the future. I would love to meet the people whose space I cleaned that day. Holly helped clean the kitchen so it was interesting to hear about her experience since a sanitary environment is so important when involving food. I definitely want to find other ways to volunteer with hunger and homelessness in the future. Over Spring Break, I am going to Washington D.C. on the hunger

and homelessness ASB trip, so it will be interesting to compare the shelters I work with over Spring Break to the Salvation Army here in Athens.

6

My hunger activity was to participate in a program at my church in XXX, Georgia called “Snax Sax,” and then write a letter to a Senator in Washington from Georgia to relate my experience with helping poverty/hunger stricken families through the program called “Bread for the World.” Bread for the World is a non-government organization to which individuals may contribute by personally writing letters to politicians about poverty and hunger problems in their communities. My initial plan for the hunger activity was to simply research the problems with poverty and food insecurity in my community and the surrounding areas and have my friends and I write letters relating to the research; however, as I was having trouble finding information for this, I went to my church over Thanksgiving Break to participate in the Snax Sax program. We gathered food (applesauce, fruit snacks, granola bars) that my church congregation had donated for the cause, and loaded them into brown paper bags. The bags will be taken to two elementary schools in my community - XXX and XXX when school begins again on Monday after the break. The bags are given to children from families living in poverty that were being fed with free breakfast and reduced lunch at school during the week. On the weekends, these children were not always given three square meals at home on the weekends so they are given these bags so that they have something to eat.

After participating in this activity I convinced the people working with me to write short letters to a senator in Washington explain our activity. We sent them to Senator Dan Weber. I wrote about it in my letter to Senator Weber, explaining the process to him and how kids were benefiting from it at these elementary schools. I also mentioned that another Methodist church in XXX, Georgia was participating in this program as well. I also mentioned in my letter that even though the government provides assistance (like SNAP) to families living in poverty, there is still so very many people that are not provided with enough food or proper nutrients. I expressed my idea that the government could begin programs like these, focusing specifically on young children rather than families as a whole.

Before participating in this activity, I was not aware that there was such a large percentage of the people in the surrounding communities living in poverty. Donating food and helping put these bags together for the young children made me realize the under nutrition that I learned about in class is actually closer to home than I had imagined. I plan to continue helping with this program at my church when I am home and hopefully someday bring this program to a church in the community in which I will eventually settle down.

Although we sent off 12 letters, the only copy that I kept was mine:

Dear Senator Dan Weber,

I am a first year college student living in Athens at the University of Georgia. I was born in XXX, Georgia and still visit home there every few weeks. When I come home I go to church on Sunday mornings at XXX United Methodist Church. A member of our congregation was a teacher at XXX Elementary School and taught children who came from low income families living with food insecurities in the nearby areas. She organized a program at XXX called “Snax Sax” to assist these children with their hunger issues. Coming from a family that never had to

deal with these issues, and to only have read about hunger and poverty, it was startling that I could actually help people in my own community with their food insecurity.

Snax Sax provides forty to fifty brown paper bags a week to nearby elementary schools, XXX and XXX, to children that are provided reduced breakfast and lunch. Each bag contains around \$5 of health snacks including: apple sauce, granola bars, fruit snacks, etc. The food donations are made by the congregation at XXX, and the program has been successfully implemented every week during the school year since 2008.

I was astonished that so many people in Georgia live in poverty. 14.7% of Georgians live in poverty, and in just in my own in county, XXX, 15.6% of the population is considered to be living in poverty. It actually sickens me that 25.4% of children and teens living in XXX are from ages 0-17 are from low income families with hunger issues.

The point that I am trying to make, is that while government programs such as FSP/SNAP do help approximately 25 million families living in poverty, there's still a gross amount of people, specifically children, living on low incomes and not enough healthful, nutritious food. Snax Sax has not only been seen in my community, but another program at XXXMethodist Church in XXX, Georgia also began the program to assist young children with their nutritional needs.

These programs, started by ordinary citizens and people with good Christian hearts, have been successful, but in order to combat the large percentage of people that still need assistance, it might require more than just a few generous church congregations willing to help out in their community.

I urge you to consider the numbers that I have displayed in this letter, of the people living in the communities that you represent in Congress. I know that my community is not the only one in the United States that suffers from these same issues, and I am certain that there are others that are far worse. Please help me and my community organize a bigger effort, one implemented by more than just churches, to help these families living in poverty.

15

For my hunger project we wanted to go gleaning with a group from our class. However, due to the lack of available farms and our lack of connections with local farmers, we decided to do volunteer work at the UGarden. XXX found out that the UGA department of horticulture has this garden just off of Milledge Avenue that is grows food to donate to less fortunate families in Athens. We woke up at 9 AM on a Saturday and drove out to the farm. We met the professor who runs the farm and he asked us to first pick some tomatillos. We had never heard of this vegetable but it turns out this little green tomato is used in a lot of different types of salsa and Mexican food. After we picked the tomatillos, we took apart the cage they were growing on so that there would be more room to plant the fall crops. We also picked the last of the season's pumpkins and lettuce. Once the crops were cleared we shoveled compost while we waited for the soil to get tilled. This compost is an environmentally friendly way of creating fertile soil for healthy crops. Once the land was cleared, we were given seeds to plant wheat and barley for the winter. We found it very interesting that we got to participate in the entire process of growing crops on a farm, from picking to seeding. I personally learned a lot about the work it takes to sustain a farm, even one as small as the UGA garden. It really puts into perspective the work that it takes to provide food for families and communities. In fact, on a farm that is about one acre we had about eight people doing hard work. This is mind-boggling because it really makes you think about how much manpower large farms need to keep operating. On top of that, the agriculture

professor showed us the process of blending certain chemicals and bacteria that helps the growing process. This also put into perspective the difficulty of making crops grow successfully on a low budget.

This project has not only made me remember not to take for granted my immediate access to fresh and healthy food, but also makes me understand the extreme need for fresh produce in less wealthy and prosperous nations. In fact, it has inspired me to encourage my friends and family to not only donate soups and beans to food drives but to also donate canned vegetables in order to make healthy vegetables more accessible. Hopefully I will be able to have the opportunity to work at the UGArden again in the future because it really taught me the value of the work behind producing fresh produce in bulk.

9

For my hunger activity I went with Dr. Johnson, Ben and a few classmates to the Food Bank of Northeast Georgia and helped make thanksgiving bags of food for the Food2Kids program. We had an organized assembly line of assorted foods to put in bags and sort out among counties. Some things that really impacted me during this experience were seeing how helpful people can be and how much people want to help. This really brought me closer to my teachers as well as my classmates and a few new foodbank friends. I really got to talk to everyone and understand why they were there and why they wanted to help out as well as share why I wanted to help out. For me when I signed up to help out it was because I needed to get a project done so I could finish the hunger activity but it ended up being so much more rewarding than I ever imagined. It made me feel extremely grateful for what I have and how blessed I am to have food right at my fingertips all the time when many of these kids we were providing food to go home from school to empty houses and hungry bellies. I was excited to help out more when we finished our first task and practically begged for more work to do. We ended up addressing envelopes, which sounds like an easy monotonous task but it was probably the most fun you could have had with envelopes and stickers. We all laughed and told funny stories about ourselves and friends and we felt so accomplished when we finished.

I felt so good when I finished a task and saw the happiness in the workers eyes of how thankful they were that we came to help out and shed a little more happiness into the food bank. You never realize how good you feel when you help someone else out until you're actually doing it or when you've finished doing something. You feel so empowered inside and you just feel good and happy knowing you did something to help someone else who needs help. I definitely would love to go back with my classmates and teachers just because we had such a great time. I have also bragged about my experience to my friends and they all want to go with me sometime to which is an awesome feeling. I definitely will try to make community service more of a priority in my life for others as well as for myself. You cant get the feeling you get after helping someone everyday and it just can really make your day and even your week so much better.

5

For our group service project we decided to go glean, however, we could not find a suitable farm for our cause, so instead we chose to work at the UGArden. UGArden is located at 2500 Milledge Avenue and is also known as the University of Georgia Horticultural Greenhouses. The work we did here was very similar to that of normal gleaning in that we harvested different crops that were to be donated to refugee families in the Athens area. Some of the plants we picked were tomatillo, lettuce, and pumpkins. We accumulated two buckets of

tomatillos, two buckets of pumpkins, and two buckets of lettuce. In addition to this, we also prepared for the next harvest by tearing down tomatillo vines and fence as well as spreading wheat and barley seeds. Finally, we transferred some compost to the compost pile. Though we only worked for about two and a half hours, the work was very tedious but also very rewarding.

I, for one, learned a lot from this service experience. I now understand the hardships that land laborers and farmers must go through in order to produce sustenance. With this understanding comes a great deal of respect. We only worked for around two hours, but subsistence farmers must do this year-round in addition to preparing the fields and processing the food. I also gained field knowledge of manually harvesting crops from a garden. Even though my family owns farmland, we have never gone out and tried to harvest the produce with only our hands and tools. This makes me realize how blessed we are to live in such an industrialized society where this is no longer necessary for many people.

In the future when I partake in activities that minimize the problem of hunger, I will remember the work we did on Saturday, November 13th. I plan on doing this again later in my life because I feel like we have made a positive impact on the people of this area. In addition, I will be more prepared because I have acquired techniques and knowledge about gleaning. However, gleaning knowledge has almost no use outside of actual gleaning, for it is only useful in the fields and in distributing food from gleaning. Most of the service projects I am already involved with such as soup kitchens and mission trips do not require one to harvest food but only to prepare it for consumption. With that being said, it would make sense to start a program similar to UGArden in order to make use of my acquired skills. This project would be perfect in my hometown of XXX. It would work well because of the large number of farms in XXX County and also because of the abundant amount of college students that are willing to serve. No matter how I make use of the experience at UGArden, I am glad to have been able to contribute society in some way as to make a difference.

18

Defeating hunger begins with one small step at a time, just as with any major problem. To do my part, I went to two different homeless facilities, one in XXX, XXX and the other in Athens, Georgia. Both visits were very different and rewarding in separate ways. The experiences gave me a new perspective on homelessness and hunger and motivated me to continue making a difference.

My first volunteer opportunity was on October 23rd in XXX. My church college group went together to the XXX Community Kitchen located at XXX. We arrived early on Saturday morning just as the clients had finished breakfast and were hanging out in the commons area. Unfortunately, the kitchen was double booked so we broke into two groups. The first group cleaned up the pantry and organized the cans. My group went into the commons area and talked and prayed with the homeless. Most of the people we talked to seemed like normal, everyday people with a unique story. One lady in particular touched my heart as she talked about her infant grandson and how she lost her job.

My experience at the Community Kitchen left me with a new outlook. Homelessness is not a chosen lifestyle; it does not necessarily only affect those who deserve to be homeless. There were several elderly people and children at the shelter that were unable to help their current situation. As a result of losing a job, being affected by a natural disaster, or other occurrences, the homeless have to rely on kitchens such as the one I volunteered at to supply them with a meal. If it were not for the many volunteers who persistently volunteer their time

and money, the homeless may go without a true meal for an unknown amount of time. As citizens of this planet we have an obligation to help those who are less fortunate than us. These good deeds are to be done out of love and compassion rather than out of selfish ambition.

The second time I volunteered, I went with a large group, along with XXX, to the local Salvation Army in Athens, Georgia. The initial plan was to clean up the entire building and then have a cookout for the homeless. We scrubbed the kitchen until every corner was rid of any evidence of dirt. Unfortunately we finished so quickly that we were unable to personally serve the clients their meals. However, simply cleaning the facility was humbling. Cleaning the Salvation Army shelter was a down and dirty experience that let me see from the level of the homeless. They have no choice but to live in whatever conditions in which the facility is. No one wants to eat their dinner in an unclean kitchen. Therefore it is important to not only consider the food itself as an important factor, but the sanitation of the living facilities as well. Any little bit helps, and I feel that my time spent cleaning and organizing the kitchen area was as good as actually serving the meals.

In the future I plan on continuing to contribute in any way that I can. The volunteer experiences motivated me to look for more ways to help and venture outside of the box. Hunger can be found anywhere, even right down the road from the University of Georgia. With that being said, I plan on finding where and when there is a need to aid the hungry and homeless. Volunteering has been a humbling experience that will no longer allow me to ignore the realities of the world around me.

17

On Sunday XXX and I went to downtown Athens and helped with passing out peanut butter and jelly sandwiches to people who were in need of the food. Most of the people were homeless who received the sandwiches and fruit that was being given out. After passing out the sandwiches we talked to one man in particular, his name is XXX. XXX is a homeless man who regularly attends the Sunday handout of food and has a very interesting story. He said he is a graduate of the University of Georgia and has a degree in Psychology. He did not elaborate on how he became poverty stricken but it was very obvious he was. He said he is living out of cardboard boxes and does not have a job because of the hard economy. He said he had just recently had twins and has another baby is on the way. He also added that he attends church every Sunday and then goes to the food handout right afterwards. It was fairly obvious he had a problem or some sort, probably drug or alcohol related because he repeated many things and had slurred speech. He also was not good at conveying his feelings or telling the situation of his life. This problem with memory or speech could very well be linked to a hunger problem as well. Maybe malnourishment has some role in XXX being unable to portray his thoughts and have jittery movements. Since he just had twins and having another baby on the way it also sounds like the birth spacing of his kids is not good considering there should be more than one and a half years between kids like XXX is going to have. His story was very sad and really made me realize the hunger problems that are right here close to me in Athens.

I had never been able to experience first-hand the hunger problem that America faces today. This class has opened my eyes to world hunger issues throughout the globe but working right here in downtown Athens really helped me understand the idea that hunger can strike anyone. And when it does it can have devastating effects. It is almost certain that not only XXX has hunger issues but the rest of his family as well. Also, there was a much larger group of hungry people attending the event than I expected. There were at least thirty to fifty people there

who ate the food. If this many people have hunger problems in a small town in America I can only imagine how bad the problem of hunger must be in third world countries around the world. With this thought in mind, the experience of working with those with under privileged lives has given me a strong desire to work to help with the hunger problem here in America. Hopefully if more people can be enlightened as I have been the issue of world hunger can be greatly minimized if not eradicated from every country in the world fairly soon. I plan on going to many hunger organizations not only here in Athens but also back in my home town of XXX and volunteering my time to help with the problem of hunger. Hopefully I will be able to be an influence on my peers and friends and more people of my generation will take a more active role in preventing this huge problem that is crippling not only America but the world.

7

I have really enjoyed working on this hunger project. I really love making a difference and helping people who need it, and this class has given me the opportunity to do so.

In my original plan, I wanted to write a letter to congress (through Bread for the World), donate \$ 25 dollars to the Bread for the World Organization, get 10 people to write letters, and just spread the word. I achieved most of those goals. I wrote a letter to my representative Phil Gingrey in the United States Congress and donated \$25 to Bread for the World, as well as just telling people about it, but I couldn't get anyone else to write a letter (I guess no one really jumps at the chance to make a difference anymore). In my letter, I started by giving some background about me and how I got inspired. Then, I gave some info about what Bread for the World was, and what they do, basic facts and statistic about hunger in the United States, and offered some changes he could help implement (like preserving tax credits for low income families, and strengthening child nutrition programs). In my letter, I wanted to focus on the United States, not only because that is how he can help the most, but I feel very patriotic about everything in the United States, and for the best country in the world to have so many problems with hunger that go unnoticed, is an embarrassment. I was not that harsh in my letter because I didn't want to offend him, or make him angry, but it is something I feel strongly about. I hope that I get a reply, because I am very interested on what his thoughts might be on the matter.

Because I couldn't get anyone else to write letters, I decided to volunteer at the XXX Soup Kitchen Wednesday night, before Thanksgiving. I just helped with some preparatory stuff like peeling potatoes and chopping vegetables and stuff. It was actually fun! I really feel like this project has made me more aware of all the ways that people can get involved. In high school I worked a lot on a food pantry and weekend meal plan for poor children through the Beta Club (of which I was president), and I have learned that there is so much more to do! Donating cans every November (what most people do) is good, but not nearly enough.

Now that I know what problems exist in the United States, and how I can help to fix them, I will keep doing what I can (year round) to eliminate hunger in the United States. It is easy, rewarding, and helpful to not only yourself, but to other people, and the overall image and well-being of the best country in the world!

Dear Rep. Phil Gingrey,

I am a first year student here at the University of Georgia in Athens, GA. I am loving college life, working hard, and recently joined the College Republicans here on campus. I have already learned so much in my first semester and I feel that I have learned enough already, to properly urge you to start focusing on the issue of hunger in the US, and the state of Georgia.

One of my classes was a World Hunger Seminar where we learned about all of the issues around the world that pertain to, or are related to hunger. 1 billion people in the world are considered to be hungry or food insecure (they don't always know where their next meal will come from), and while most of the severe problems with hunger do not take place in the US, we still have a huge portion of our population that suffers. According to the most recent study from the USDA ERS, the December 2008 Current Population Survey Food Security Supplement, 14.6% of US households are food insecure. Of that 14.6%, 37.2% of those households are headed by single women, and 42.2% have income below the poverty line. In 2008, the state of Georgia was one of 10 US states to have a food insecurity level above the US average, and with our recent and prolonged economic situation, I'm sure that it is even worse in Georgia, and across the country.

As part of the class, I joined an organization called Bread for the World. As a member, we make it our goal to urge our nation's decision makers to end hunger at home, as well as urging communities, churches, and any organizations to join, and spread the word! My main goal of writing to you was to remind you of this serious issue and inspire you to take action. I would like to suggest that you fight to preserve tax credits for low income families, for if they expire, 1.5 million people (including 800,000 children) will fall below the poverty line and have a 42% chance of becoming food insecure. Also, you could try to increase the budget to strengthen Child Nutrition Programs, and provide grants to states to develop a comprehensive strategy to end child hunger.

I am a very patriotic man: A man who loves his country and wants the best for it and the people who live in it. Growing up with a single mom and two brothers, I know what it is like to worry about food. Luckily we had programs for school lunch to help. I have spent a lot of my time in high school running a food pantry with the Beta Club (of which I was president), and providing weekend meals to children who would have to wait until the Monday of school to get a meal.

I hope that I have inspired you to help me and Bread for the World make a change in our wonderful country, and I thank you for any action that you will take in the future.
Sincerely,

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For our Hunger Activity, our original idea was to go gleaning. However due to lack of available farms, decided to go to the UGarden at 2500 Milledge Ave which is also called University of Georgia horticulture greenhouses. Inside the garden, we did numerous things like we picked tomatillo (which is a yellow plant with black spots and berries on it), took down tomatillo vines and fences, prepared the area for harvesting new crops, picked lettuce and pumpkins, spread wheat and barley seeds, and moved compost to the compost pile. The reason this is actually helpful to the hunger of the world rather than the hunger of the gardeners is because all produce and crops are given away to refugee families in Athens area.

All of us in the group really enjoyed this activity and we really learned a lot about how helping others can affect us as well as them. It was interesting for a lot of us to be in the position of a farmer because not many of us come from that kind of background. Although farmers would probably do a lot more than we did in a day, we learned that a farmer's life is a lot tougher than we all thought it was. In terms of hunger though, we learned that we are very fortunate and there are little things that need to be done for food that we don't even notice sometimes. We also learned that you can get a lot of joy out of helping others. Like just because we were doing this

task for other people, it made it so we were happy while we were doing it rather than it feeling like a chore. We thought it was fun and most of us would like to do something of the same sort again one day. It is weird to think of how helping someone else out can bring you a lot of joy even when none of this stuff is helping you.

This activity opened our eyes to how much fun helping out is and with just two hours you can make a difference. This will impact our future lives because it gave us an example of what helping people actually looks like. We all would like to help in some way stop this hunger crisis and this activity provided a good first step for a lot of us. It has also only shown us one aspect of helping the hunger fight so it will help us each decide whether we would like to help out again in this way or in another way. It also helped us humble ourselves to look at the world in a different kind of light so that in future we will eagerly want to help out.

19

After spending two and a half hours at the XXX Community Charities food bank, I learned a great deal. I never knew there were so many different things that are done at a food bank. When I got there, I was lucky enough to go on an individual tour with the guy in charge of the food bank. At this particular food bank, there are four main spots, which include the sorting of food into particular bins, loading zone for trucks to distribute the food, the thrift store, and the rows of canned goods. After taking a tour of the facility, I was instructed to go volunteer in the sorting of the foods area. Some of the fellow volunteers told me that this was the most food that they had received in a long time and the reason for that was Thanksgiving was right around the corner. With there being so much food, a family was also told to help in this area. The family had to sort all of the can foods into each specific category such as tomato, fruits, canned meals, etc. After each bin was full, I had the job of stacking the bins under the signs of each category. Once I had stacked five bins on top of each other, I had to unstack them all and put them all onto a pallet. Once on the pallet, I had to maneuver it through the food bank to the loading zone. At the loading zone, I had to find the particular categories once again and re-stack all the bins. Also while I was there, I had to carry a wheel chair and place it into a lady's car that was in need of one for her husband. While I was there I learned that about 130 families come to this food bank per day. Another interesting fact that I learned is that numerous restaurants around the county donate leftover food. Also, another big provider of food for the food bank is Publix. The XXX said that Publix is their biggest provider for food. Even though food is the most important aspect, the thrift store is also very important. In this particular thrift store, people have the opportunity to buy just about anything. One can buy furniture, Christmas decorations, silverware, and a lot more. However, the most important thing in the thrift store that one can buy are clothes. Most people who come to this thrift store do not have the proper clothing items for winter. This store allows them to purchase these much-needed items for a very cheap price.

I have to say that even though the work I did was very tiring, I had a great time. Not only did I get to work with other amazing volunteers, but I was also able to make a difference. Even though I was only there for two and a half hours, I feel like I made major contributions to helping the hungry. Also, I now know how to efficiently use my time, and I know the best method for sorting the food for future visits. I will definitely be going back in the future, and I hope to stay even longer!

2

For this hunger project I participate, along with a fellow classmate, in an activity located in downtown Athens. It is near the Ben and Jerry's Ice Cream parlor and Five Guys restaurant. Every Sunday a group can gather at this spot around twelve thirty and administer peanut butter and jelly sandwiches to the homeless. This organization presents a unique opportunity in which you get to have a personal and real conversation with the homeless and find out their stories. I had a firsthand experience at this. As I finished passing out one of the few sandwiches in my hand, I looked around for someone eating alone. Then we came across a middle aged and African American man. My partner and I found out that his name is XXX. We learned a good bit about his life. He told us stories of how he actually graduated from the University of Georgia with a psychology degree. We were shocked when after hearing this information and were intrigued to find out when things went south in his life. He said there was a crisis and that he did not what to bring up, but continued to say that now it is just too hard to get back on your feet with this economy. He went on to talk about his family and how he is trying to provide for his twins and a new baby on the way. As he was speaking we realized that he had slurred speech and continued to repeat himself several times. We made some speculations that the malnourishment of food and probably drugs or alcohol played a part in this. He says he attends a local church every Sunday. I myself am dedicated to my faith, so after hearing this I know he is trying but cannot surpass the difficulties of poverty.

I learned throughout this project that not all homeless people are just too lazy to get a job and that they are incapable of ever succeeding. Poverty is such a major issue and it can be seen all over the world and even in a small county such as Athens, GA. It effects everyone whether directly or indirectly. His kids are going to suffer, if they have not already suffered, some of the affects of poverty. It is an issue that can easily be cured if everyone could just lend a hand. For the future activities I take place in or hopefully can organize one day, I will continue to use the one on one method. I feel establishing that emotional connection with someone can help them more than completely ignoring them and just serve them food. People feed and respond off of moods, and a positive smiling face from someone who will just listen to them is one of the best ways of creating that support and encouragement for a person or family who is homeless and/or food insecure. This provides a life changing experience and maybe gives them a sense of hope to continue persevering on during the disease of poverty.

14

UGArdens is a small student run organization that was formed in order to give UGA students the opportunity to experience some hands on agriculture and gardening, and to also help those in need. The garden is located on South Milledge and is relatively small—only one acre. The crops that are reaped from the garden are donated to the local food bank in Athens, Georgia. I thought that this would be the perfect organization for me to work with in order to help fight the problem of world hunger.

On a Sunday a few weekends ago I went gleaning at the UGArdens. This involved a number of things that have to do with gardening. We picked crops, tilled the soil, and even planted a few seeds. The crops that we picked were tomatillo, lettuce, and pumpkins. We planted wheat and barley seeds. I am extremely interested in nutrition so naturally I am also interested in food. Lately I have been craving growing my own food so this was a very exciting experience for me. I think it's really important to learn how to grow fruits and vegetables and take part in some

form of agriculture. On top of that, the food that we picked got donated to a local food bank which helps the hungry and those in need.

UGArden is a really good organization to work with because the food that we donate to the food banks is natural, unprocessed, and healthy. This will make a huge difference for those who access the food bank because they will actually be getting healthy, nutrient dense foods. Many of the people in Athens who use the food bank might have nutrient deficiencies so it's best to try to incorporate as many fruits and vegetables into their diet as possible. I had a fantastic time helping out on the garden and I definitely plan on doing it again soon. I will probably end up bringing some friends with me the next time I go. This will raise awareness about hunger in our community and will also make a difference.

34

On Monday, November 15, I worked from 10:00 to 12:00 at the bake sale inside Dawson Hall. The bake sale raised money for Share Our Strength, which is an organization dedicated to fighting childhood hunger in America. Thanks [to] XXX's hard work and dedication in organizing and coordinating the entire project, the bake sale was a great success. From 9:00 to 3:00, we raised \$244. We sold a wide variety of goodies, including chocolate chip cookies, various cupcakes, Snickerdoodle cookies, carrot cake cookies, lemon squares, and brownies. Instead of charging a certain amount per item, we asked our customers for donations. This raised more money because people were more inclined to give generously. We put the money in a big plastic jar that sat at the front of the table. Again, I think this was a good idea because it prompted people to donate to the collection sitting right in front of them. One woman didn't even buy any sweets but just donated money to the cause. Another girl who approached the table was very interested in what we were doing as well as our "Let the Big World Eat" class in general. She is an upperclassman who obviously cares greatly about hunger both in domestically and globally. She talked to us about Athens PB&J as well. Although some people did not seem interested in hearing about why we were there, a lot of people asked us about why we were raising money. This was a great way to spread the word about childhood hunger as well as the knowledge we are gaining from taking this class.

I think that the best thing about this bake sale was how it raised awareness of problems that we face here in the United States. Often times, it is easy to assume that hunger does not exist in our own country. Especially with obesity problems that are so prevalent, it is easy to believe that people without enough food only live in developing, third world countries. However, this is not the case. Poverty and the hunger that accompanies it do dwell in America. I had not heard of Share Our Strength before the bake sale, and neither had many (if not all) of our customers. So, spreading the news about it was awesome. Additionally, I got to know some of my fellow classmates better than I did before the bake sale by working with them at the table. The two hours I spent behind the perfectly positioned goodies flew by very quickly. Although it is cliché to say that time flies when you're having fun, it is definitely true in this case. Raising money for an incredible cause and enjoying it at the same time is a wonderful combination. Especially around this holiday season in the struggling economy, nonprofit organizations are facing tough times. Hopefully, the money we raised can help Share Our Strength and bring both happiness and nutrition to children in need.

20

Nestled away on a small residential street, there is a church by the name of Oconee Street Methodist Church. In an annex of the building, there is a kitchen and dining room area called Our Daily Bread. Here, people suffering from hardships brought on by the economic downfall can find relief in this pine-paneled, linoleum-tiled room. I spent one late Thursday morning in the kitchen, preparing rigatoni, garlic bread, a fruit medley, and green beans with members of the Athens SDA Church of Athens. Myself included, four volunteers occupied the kitchen. When 12 o'clock rolled around, we were ready. With an assembly line formed, we served 94 patrons in the course of one hour. I witnessed a mother wheel her toddler into the kitchen for a free meal, along with handicapped and homeless men and women, parents with two or three children in tow, and working class people all file through, thanking us profusely for our services.

While speaking with one of my fellow volunteers, I learned that the daily morning and lunch menus depend upon what the Food Bank has available. Along with the help provided by the Food Bank of Northeast Georgia, grocery stores around the city will donate breads that are still eatable, but have passed the sell-by date. I also learned of what an amazing community outreach program Our Daily Bread is. Many of the people I met were volunteers taking time from their busy lives to make a meal for those in need.

You generally hear people comment on volunteers' efforts as noble work, and then vocalize their wish to find time to do the same. This hunger activity taught me many things: that the difficult economy is beating down many doors of Athens residents, that the times seem to be warming and strengthening hearts, and that making time to help others is as essential to one's health as exercise. Through volunteer work in the community, whether the focus is on hunger prevention or another issue, people can gain gratitude of their own lives, and they can open their hearts and minds to the diverse group of people that make up the world. By working at Our Daily Bread, I have learned of the importance of volunteer work, and I plan to make time to share my good fortune with others in need.

32

On Monday November 15, 2010, I helped with a bake sale for my hunger project for my FRES1020 class. A group of us sold baked goods to raise money for Share Our Strength. Share Our Strength is an organization that is dedicated to fighting against childhood hunger in America. In addition to working a two hour shift at the bake sale, I also helped with the planning and setup of the event, recruited volunteers to bake food, and baked food myself. Through the donations given, we were able to raise almost \$250 dollars for the organization!

I learned three main things from this experience. First, I learned a great deal about the issue of childhood hunger in America. Almost seventeen million (one out of every four) children in America are facing hunger. These children are likely to suffer poorer health, fatigue, hospitalizations, behavioral difficulties and impaired performance at school due to their lack of nutritious food. Share Our Strength has already taken many steps towards ending this problem. They established the Partnership to End Childhood Hunger and Obesity with the Centers for Disease Control, helped 17,000 low-income families learn how to eat healthier for less money, and awarded grants that have helped hundreds of organizations accomplish goals towards ending childhood hunger. It feels really good to know that all of the work that we put in is really going to make a difference. Secondly, I learned a lot about how to organize one of these events. There is a lot of work that goes on behind the scenes, but it is definitely able to be done. Organization and flexibility are the keys to success. Lastly, I learned that many people really do

want to help change the World's problems. A lot of them just do not know where to give money, how to give money, or where their money is really going. I learned that when you provide people with an outlet, they are very willing to give more than is asked of them. Several people came to the sale and donated money without taking any food. Others would donate much more than one would expect for a cupcake. This project reinstated my hope that people do care and that these problems have the potential to be solved.

I will use this experience to continue hunger related activities in the future. This project has gotten me really interested in hunger/obesity problems in America. Although I knew that hunger was an issue in America, I have previously focused my time and efforts on problems outside of the United States, in third world countries. However, not I would like to work on the problems in America too. I would really like to become involved in a program that is working to improve school lunches, especially for elementary school aged children. I am so glad that we did this project!

29

"This year, nearly 1 in 4 children in America don't know where their next meal will come from. That's almost 17 million kids across the country who struggle with hunger. But there's hope. It starts with a bake sale."

Share Our Strength is a national organization that focuses on ending childhood hunger in America. One of the ways SOS seeks to get communities involved is by holding The Great American Bake Sale in which companies, restaurants, individuals, and families host their own bake sale and donate the money raised towards ending childhood hunger. I decided that holding a bake sale to raise funds for this organization would not only serve as participation in a hunger activity, but it would be a great way to raise awareness of childhood hunger in America, get other students across campus involved, and to have fun! I quickly realized that this hunger project would need careful planning, preparation, and participation.

Three other girls in the class expressed their desire to hold a bake sale. Together the four of us became very passionate about participating, getting other students involved, baking, raising money, and having fun! I took charge of all the organizational demands, logistics, and managing duties. For instance, I assigned the girls specific roles and tasks, communicated with the College of Family and Consumer Sciences, advertised the bake sale, and recruited volunteers. The other girls informed their sororities about the bake sale, and 15 girls volunteered to bake. In addition, we designed posters to advertise the bake sale as well as inform others of the severity of childhood hunger in America. In order to raise funds, we decided that we would not determine a set price for the baked goods, but we would sell the goods for donation only. We were interested to see if people were likely to give more or less than if the goods were sold for a set amount. We also wondered if the bake sale's purpose of fighting against childhood hunger would influence people to donate.

A couple months into our planning, six more students from our class volunteered to help out with the bake sale. I was thrilled that more students wanted to actively participate in mobilizing students, faculty, and staff to join the fight against childhood hunger. On Monday, November 15, 2010 from 9 a.m.-3 p.m., we held our bake sale, and it was a huge success! Many students and faculty stopped to inquire about the bake sale, and we were very encouraged by their responses. They seemed very interested in what we were doing and why we were raising money. A few students even said they saw the posters for the bake sale dedicated to raising money for childhood hunger, and they came to find it! We found that people gave generously;

especially when they found out we were donating the money to Share Our Strength. We received \$244 in donations! My heart was moved by the generosity of the students and faculty at The University of Georgia.

Participation in any hunger related activity requires preparation, patience, and passion. If it was not for careful planning, we may not have had a successful bake sale. Originally, I did not think people would be interested in our bake sale or give so generously. I was afraid they would walk by without noticing. Not only did they give generously, many people stopped to discuss with us the prevalent issue of childhood hunger. Through all of this I've learned that while an event to raise money is important, greater importance lies with informing others, inspiring others, and mobilizing others to make a difference. I along with many others do not realize that 1 in 4 American children do not know where their next meal will come from. Usually, we only think of places like Africa or Asia that struggle with hunger, but few people realize the severity of childhood hunger in America. I have learned that a group of students can inform and inspire hundreds of students, and something as simple as a bake sale can help make a difference in the life of a child or a family.

Participation in this hunger related activity has encouraged me to continue to inform others about the prevalence of childhood hunger. It has inspired me to think of new, innovative, and creative ideas for a hunger project in the future. I know that there is no limit to the power and the influence that a few people can have. I can use my newfound excitement from the bake sale to motivate me to continue create and organize other hunger related activities. In addition, I hope to maintain the connections I have made in order to later seek support for the undertaking of bigger and better projects. I along with others can continue to fight against world hunger.

24

Hunger Activity Final Step

For my hunger activity, I traveled to the Food Bank of Northeast Georgia with Dr. Johnson, Ben, and a couple other students. At the food bank, we packaged meals in bags in an assembly line which would be later distributed to the Food2Kids organization. This organization helps children who are food insecure about their meals on the weekends. Their schools may provide food for them during the week, but Food2Kids insures the children food on the weekends. I was impressed with the substantial amount of food the children would receive. The bags contained one can of beefaroni, two smaller cans of pasta, two cartons of juice, a carton of milk, an applesauce, two sets of crackers, two small boxes of cereal, a poptart, a fruit snack, a bag of bread, and a banana. I would be really pleased if I received that bag of food, so I know the children will really appreciate the food as well. Because we worked at the food bank right before Thanksgiving Break, we did double the amount of bags because next week they were unsure of the amount of volunteers. Our bags were distributed to Barrow and Oconee County. After we finished bagging, our group helped put addresses on envelopes and group them into bunches of 50. I found doing simple tasks a nice break from the mentally stimulating work I am doing in college.

I was surprised at how efficient the Food Bank of Northeast Georgia operated. They had multiple supervisors working in each area of the food bank. Our activity only took two hours to complete because everything was so organized. Many organizations could put in their order and then come pick it up at a later date. Many of the people we encountered were picking up their orders for their Thanksgiving feasts they were preparing.

The food bank always needs volunteers. Since the work only took a couple hours, I could get a group of friends together and easily do the same thing I did again. I would just call the coordinator of the food bank from a number I found online and then arrange a time for us to come in and help. I am disappointed that my original hunger activity did not work out, but what I did instead was just as enjoyable. I would still like to make dinner for a shelter with a group of friends. I can actually see the results when I get to eat with food with the people I am helping. I found most of the places around Athens to be booked for a long period of time, but I can still help at MUST Ministries in my hometown.

26

I worked with some other students in my class for an organization called Share Our Strength that works to end child hunger. XXX came up with the idea of a bake sale and Margaret and I jumped on board right away, while others joined in later to help. We talked about doing a bake sale where we would ask for donations and be able to share the mission of Share Our Strength and the problem of hunger with other people that may not be aware. The first issue we tackled was gathering bakers to provide plates of food for our bake sale. I am in a sorority and therefore solicited the help of girls in my sorority. Six girls in my class agreed to bake for me and I decided that I too would make a plate of cookies. I collected all the goods and brought them to the bake sale on November 15th at 8:15 in the morning. XXX and I set up the table with a tablecloth, a donations box, a couple posters and all of our goodies. I took some pictures (dispersed throughout this paper) and sat down getting ready to serve my shift (from 9:00 to 10:00). XXX and I were the only two working the shift but it wasn't too busy considering it was really early. A few people came up and read the sign without buying anything, others bought cookies and I was incredibly touched by the actions of one passerby. She looked at our table and read the sign and said that she thought our cause was really great and dropped money into our donations bucket. I then offered for her to take some goods but she said she was okay, she just wanted to support the cause. It really made what we were doing make a lot of sense. It was encouraging to see that others appreciated what we were doing. We ended up raising \$244 for our cause. I was really impressed with the great outcome! Although I wasn't able to stay for the whole time we had the bake sale, I know that a lot of people were affected by our project and that is a great feeling. I think this hunger activity was a great finish to the course because it was the accumulation of everything that we learned during this course, including how important it is to do something about the problems our world is facing today. The bake sale was something that wasn't super difficult but was very helpful. I am really glad I got to work on this with my classmates (especially XXX and XXX) because we were able to work together towards a great cause.

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I was a part of the bake sale process and was in charge of making the posters for the bake sale. This process was a fun one because I think we all got really excited about the bake sale. In the beginning, the idea of a bake sale was a little in over our heads, but we decided to all come together and pull all resources necessary to make it happen. I was exceptionally proud of our team leader XXX, because she gave us such enthusiasm when we felt like this project was going to be too much.

Of course in making the posters, I learned more interesting and eye opening facts about world hunger for the information that I put on the posters. This was all very interesting because

I did not know the facts and information previously, and I thought hard about them while I was making the posters.

This process helped me learn how to orchestrate a large scale project and be a part of a team that is working for a big idea and dream. I am so proud of our group for getting it all done.

On a whole, this class was an eye opener for me. I am an extremely sensitive person to world injustice and issues of poverty. I always have been and I always will be. I hope, somehow, some time in my life that I can make a difference in this world regarding these issues. Going into college, I was interested in being a pre-med major because I really liked the idea of helping people in that manner. I was never interested in the type of medicine where I am sitting in a hospital telling obese men of my own race that they need triple bypass surgery, more so I was interested in saving AIDS babies, or working with Doctors without Borders. This was initially why I took this class, because I knew that I could learn about different types of deficiencies around the world and issues of the like. I learned so much from this course in terms of the medical side of hunger that I really appreciated learning.

Although I never saw the bake sale in process because I was not able to work at it, it was really nice to be a part of this project because I know that we raised a significant amount of money for our organization. This inadvertently made me feel that I was making some kind of a difference in this world, which was a great feeling to have. I was a little nervous at first that we weren't going to be able to pull it off and that we would have to do something very ordinary for our hunger project, but the bake sale seemed to be successful and a fun, creative way to end the semester.

I really learned so much from this class in ways that I never knew I could. I am so appreciative of the prenatal health care section as well as how world hunger relates to mothers worldwide. This class was so great for me, and I really appreciate everything.

23

For my hunger project I helped on work on two different things within the community; I worked on Blue Moon farm on 365 day and I am helping my Girl Scout troop with their silver award project.

At Blue Moon farm we picked some of the last crops of the season. We all worked together and weeded the majority on the ground cover crops. We then picked eggplant, okra, and hot peppers. The last thing we did was weeded around the green house to prepare it for the winter because if the area around the green house wasn't weeded well then they wouldn't be able to put the cover over it and cold air would kill the tiny plants that the other group of us had just planted. The guy that led us through the farm explained what we were doing. Like that we had to weed the ground cover because if it wasn't done then the weeds would steal important nutrients from the plants that were to be planted next growing season. When we were done some of the crop was donated and the rest went to Farm 255. Later we all went to Farm 255 and had brunch where we discussed sustainability within the community.

The other activity I'm involved with is I assistant lead a Girl Scout troop for middle schoolers at XXX middle school. They are working on their silver award project and how it relates to homelessness. As a part of this project they are learning about hunger in the homeless. So we are organizing a trip to all volunteer at Our Daily Bread in January. We organized for a woman from the company to come and talk to the girls to better help them understand homelessness in Athens and hunger. The woman came in and mostly focused on understanding what being homeless is and why hunger in an issue to focus on. It helped to debunk myths on

homelessness and understand the sensitivity around the topic of homelessness. This was very important to the girls to try to get a clear understanding of what it meant to be unable to feed your children and some of that girls in the room realized that not everyone was as well off as they thought. The girls are extremely excited to be able to have an opportunity to help their community in any way they can.

33

For my hunger project I started a small scale food drive. I asked my mother to ask her colleagues at work to bring any extra non perishable foods they have to her. I asked my sister to do the same thing around her apartment complex. I also asked the residents in my dorm and friends at school to bring any can foods they had, when they went home for a weekend, back to me at school. The food drive was more effective than I had planned. I told the students at school how detrimental hunger is around the world and right here in the US. I also made flyers for my mother and sister that amplify the fact that hunger is a huge problem around the world. I really felt like the people responded to the information I gave about the severity of hunger. This was a huge reward for me because I got to see that people really care which makes me even more enthusiastic about fighting hunger. Once I collected the foods I donated them to the XXX Samaritans. They are a local group that helps feed children, families and people in need of food. I felt that this was a great group to send the food to because they help the ones in need right here in my hometown.

Throughout the course of this project I learned the extent of hunger in the US. It has always been a known fact that there are so many third-world countries suffering from hunger which can sometimes makes people forget about the hunger in their own towns. There are so many people here in America that are suffering from food insecurity and malnutrition. The project helped me to see that in order for our country to help other countries in need to the best of our ability we must make sure our own citizens are taken care of. This helped me to realize that you never know how could be suffering from hunger. There could be someone you go to school with or work with that could be suffering from these problems. This has made me more sensitive to the devastation hunger can cause and more sensitive to the fact that there are many people suffering from these problems right around me. The ones in need clearly need food but, many times they need the security of knowing their family will be ok. By donating this food I know at least a few families will not have to worry about food for this year's holidays. I have learned from this experience that every little bit you contribute can help. If this small scale food drive could help some families then a larger food drive could help even more. This has opened my eyes to helping the hunger epidemic for a long time. I have seen how easy it is to contribute and I want to continue to do that. Volunteering at homeless shelters or making care packages for the families in need during the holidays is something I am very interested in, and this project helped me to realize that.

30

On Monday, September 15th, I chose to do my hunger activity in Dawson Hall. I volunteered with XXX and from 12-3 we handed out food to anyone who was interested and asked for a donation for the hunger foundation "Share Our Strength". Our group baked many different baked goods including brownies, cookies, lemon bars, and cup cakes. The baked goods were incredibly tasty and popular among our customers. The girls who cooked the goods did a terrific job in my opinion because the goods were very popular and kept a steady stream of

customers all who were willing to donate for our cause. I mostly volunteered at the counter and talked to customers about our cause and where we were donating the proceeds from the bake sale. Everyone in Dawson was incredibly nice that day and all very willing to hear about our hunger project and even more willing to donate their time as well as money to our cause. My group was incredibly successful that day as we raised over \$244 from donations for Share Our Strength. This bake sale for the hungry was very beneficial to me because it showed how powerful an idea like having a bake sale for the hungry and turning it into a very generous donation to the food bank.

In the future I would like to organize more of these types of bake sales to help the needy, because I think that a simple act like having a bake sale can be incredibly beneficial as far as raising money for the hungry. There are lots of homeless shelters in my hometown of XXX and I think that I could do a lot of good there to participate in food drives that they are usually having as well as volunteer my time to work in the cafeterias or soup kitchens especially during the holidays where everyone deserves to eat a warm meal. I would like to volunteer at the XXX Street Shelter this Christmas Break, because I used to volunteer there with my family during the Christmas holidays and had a great time doing it. Another organization that I would like to get more involved in is the Meals On Wheels Organization, which donates meals to people who aren't able to get out and about to get the meals themselves. I also used to volunteer for this organization when I was in elementary school and junior high. My babysitter, Mrs. XXX used to drive my sister and I around XXX handing out food to those who were less fortunate. The people who we handed the food out to were incredibly thankful and appreciative of our efforts, and it felt very rewarding to do good for these people. I know that if I start volunteering for this organization again, that I can pick up where I left off and help even more people. This class has tough me so much about hunger and how much of a national issue that it truly is. I think that as a country we should all focus our efforts on helping those who are less fortunate and try to promote a healthier and more productive world.

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For my hunger activity, I participated in a bake sale that helped raise money for the organization Share Our Strength, which fights against childhood hunger. Instead of having set prices, the bake sale was donation based, which turned out successfully. It could be observed that people gave more money when there were no set prices. For example, one person donated \$10, but chose not to take \$10 worth of baked goods. Also, when hearing about the purpose of the bake sale, people donated more money. Additionally, the people who came up to the bake sale unprovoked were the ones who had planned on donating money and usually ended up donating more than the people who were talked into donating. Usually, these same people were a part of other organizations that had the same cause of fighting hunger, such as Our Daily Bread. People from these organizations usually ended up donating more than those who were not part of any sort of hunger organization.

Through this hunger activity, I learned more about the organization called Share Our Strength. The organization helps collect money to feed hungry children in other parts of the country. In the United States alone, about 1 in 10 people are food insecure or face hunger on a daily basis. Additionally, about 17 million kids do not get the proper nutrition they need, which means that 1 in 4 in the United States continue to struggle with hunger. This organization seeks to feed these children in need of food through donations and volunteer work.

Through the hunger activity, I observed the trends that occur when having a fundraiser. Statistically, the number of adults who donated was far more than the number of students who donated. (This was probably due to the fact that students do not have much money to spare.) Also, the number of females who donated was far more than the number of males who donated. Usually, the females who donated said they had been part of other bake sales and fundraisers throughout their college lives and wished to help others in raising money as well. In the future, I hope to use this knowledge to hopefully collect a larger amount of donations. I will keep in mind that people are willing to give more when they are more well-informed about the cause of the fundraiser and if there are no set-prices on the goods being sold. Also, it is important to get the word out in advance of any fundraiser in order to raise awareness. Had more people been aware of our particular bake sale, I believe we would have seen much more donations. Additionally, location is key when doing this type of fundraiser. People walking by are essentially the only ones who would be willing to donate. For this reason, it is important to choose an open location where more people can be aware of the fundraiser. If this was the case, the bake sale may have been even more successful than it had turned to be.

Overall, hunger is still a problem in many places in the world. Fighting domestic hunger is only the first step. United States is seen as one of the richest countries in the world, but problems with hunger still exist even with the surplus of food. Moreover, countries all over the world have worse problems with hunger than people in the United States, which is an even bigger problem. Hopefully, these problems dealing with hunger will be fixed one day through more education, development of infrastructure, and government involvement.

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For my hunger activity, I worked towards helping the Pakistan flood relief efforts. I primarily worked with my sorority to plan events and hold fundraisers. I also worked with the Muslim Student Associated at school to create fundraisers. With the help of my sorority sisters, I made flyers and posters to post up all around campus to spread awareness, as many people do not realize how serious the situation in Pakistan is. It has been rated as the greatest humanitarian disaster in recent history. More people have been affected than the South East Asian tsunami and the earthquakes in Kashmir and Haiti combined. We also spread the word through facebook, where we posted information about events going on. Simply advertising through our statuses helped spread a lot of awareness and encouraged people to donate to the cause. The relief effort was not simply one event, but consisted of different small events such as an Italian ice sale and a T-shirt sale. There were different committees formed to be more organized. There was an awareness committee that helped spread the word for fundraisers, ad design team that helped design and order t-shirts, and a fundraising committee to reserve fundraising locations and man the tables. I mostly worked to help advertise and work at the table during the actual fundraisers. Both events were a success. The Italian ice sold out. We also created a team of individuals to participate in a yearly event called Partnership Walk. It happens every year in downtown Atlanta and teams try to raise the most money for a specific cause. This year's goal was to work towards the Pakistan flood relief, so me and my friends tried to raise money for this event as well. Although this was harder to raise money for, many families were generous enough to donate. My sorority made a generous donation as well.

From this activity, I learned that with a little time and effort, one can make a big impact on people's lives. It also teaches one to be patient because raising money takes a lot of time, and planning the actual fundraisers can be difficult as well. I also learned a lot more about the

situation in Pakistan and the magnitude of suffering. This only further encouraged me to continue fundraising and spread awareness. In the future I hope to continue hunger related activities. Now I have a lot more experience on how to plan out fundraisers and realize how effective proper advertising can be. Therefore, it will be a little easier in the future. Apart from the flood relief efforts, I have also volunteered at the local soup kitchen in Athens. This showed me a small glimpse of those living in poverty in Athens. I hope to continue to volunteer at the soup kitchen every few weeks, and my sorority has already started getting involved with shifts to work in the soup kitchen occasionally. I have learned a great deal this semester, working with different organizations and planning events. I look forward to continue my involvement with community service next semester as well.

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The hunger activity final activity was very different than I expected it would be when I started formulating ideas for the project. Originally, I planned on working with XXX. We were going to work at Our Daily Bread where we would be able to prepare and serve food to the hungry, but we have decided to do work at the Athens Area Homeless Shelter instead. The Athens Area Homeless Shelter would have allowed us to interact with the people we are serving more than did Our Daily Bread. We would also be able to prepare a full meal rather than just sandwiches. We were going to each pitch in to pay for the meal ingredients. If needed, we would have had a fundraiser of some sort to raise more money. The only problem was that when we called Our Daily Bread, they were booked for the next year! So we were back at square one in regards to the project.

Luckily for us, XXX was nice enough to let us join her group. She did a great job in planning a bake sale to raise money for Share Our Strength. This non-profit organization works on making sure that no child goes hungry, specifically in the United States. I worked at the bake sale for two hours and loved every minute of it! All of the baked goods that we had to sell looked delicious and were teasing me the whole time! When I started to work, I texted a lot of my friends and told them about the bake sale. About five of them came while I was working. During the time that I worked, we raised around fifty dollars. I was so surprised when I heard that in all, we raised 244 dollars! I was so proud of everyone, especially XXX for all of her hard work she put into the sale.

Although this project did not go exactly as I had expected it to, I got a lot out of it. I realized that because the Our Daily Bread project was so far booked ahead, in the future I am going to have to do a little bit more research when trying to work somewhere like that in the future. I would very much like to work at Our Daily Bread later on, so I am planning on putting myself on the waiting list for sometime next year! Hopefully it will work out. I had never worked at a bake sale before this project and I enjoyed it a lot more than I expected to. I was amazed at how many people come and supported our cause and how interested some people were. Because of that, I am going to be more inclined to have a bake sale in the future for other causes and maybe I could do something else for Share Our Strength later on. All in all, I am very pleased with how this project turned out and what I got out of it.

Appendix D: Student In-Class Course Evaluations

What did you enjoy about this course?

- I enjoyed learning more about things I could actually help out with hunger wise
- Very Informative
- Very informative
- Practical daily applications
- Interesting examples and applicable steps of actions
- Passionate teachers
- Learning about the hunger issues facing different parts of the world
- Easy work load, interesting lectures, Dr. J and Ben were both very knowledgeable
- One of the few classes that I had that I didn't dread coming to
- Would have liked to have open class discussions
- Cute TA ☺
- At the end when different speakers came in. It was very interesting, especially the talk about North Korea.
- I learned a lot of things that I did not know. Some of the statistics were shocking.
- Learning about world hunger
- Nice teachers, not too stressful
- I liked learning about how huge of an issue hunger really is in the world
- I enjoyed doing my hunger activity and also learning about benefits of certain nutrients
- The instructors were always friendly and willing to help. They also really enjoyed when we asked questions.
- The guest lecturers were really great. The video clips and audio clips were a great help as well.
- The unique way of presenting facts I had never heard of about hunger
- I enjoyed learning interesting things about hunger-related issues.
- It was interesting but did not require a lot of work
- I enjoyed that we learned about a different theme each week, like we focused on one vitamin or one mineral.
- Learning about new countries
- It was low-stress and also interesting
- Small class, very straight forward
- I enjoyed learning about the different cultures and how we can help them
- There was a lot of information about nutrition I never knew. The topics were interesting. I used to always take my iron pills with milk but now I know not to. ☺
- I had never even thought of taking a course like this, but it really challenged me to think differently.
- The course provided a good range of information on hunger related issues around the world.

What would you change about this course?

- Talk and do more stuff locally
- More hands on
- Nothing
- Some things were a bit repetitive or common sense. I would rather it have been a two-hour course
- Would rather take test on a scantron
- Would have liked to talk about domestic issues a lot more and in depth
- Maybe change up the form of teaching (not all slide shows) to different things each week to keep it interesting.
- I enjoyed the course, there isn't much that I'd want to change
- Make things a little bit more interesting
- Make the final less difficult – I really thought I gained a lot of knowledge in this course but it was too nit picky.
- Add more diversity to presentation – maybe a change from ppts or a different way of presenting like a movie related to hunger.
- Make it more involved -> less powerpoint/lecture
- I would add a review session for the final. I feel as if we did not cover all the questions on the final containing the specific percents and number of people.
- I didn't find the group work to be entirely helpful
- The amount of info we have to take in, in one day of class
- Do more interactive activities
- Nothing
- Maybe less discussion in class, if the class is uncomfortable
- More hands on activities & group projects
- I would put more point value on the hunger activity, since it was time consuming.
- Shorter class times
- The slides can get kind of boring when we just read them
- More activities for students to participate in
- I do not think it needs to change
- I would suggest having more guest lecturers for a broader range of hunger related issues

Would you recommend keeping the guest lecturers as part of this course? Why or why not?

- Yes it gave us something different to do
- Yes it was great to get a firsthand experience
- Yes! Very interesting
- Yes. Keeps it interesting
- Yes. The women weren't particularly interesting but I really enjoyed listening to the (African?) man
- Yes! They were very cool to hear from and definitely sparked my interest
- I did enjoy the guests because it was just some different aspects that were interesting to hear
- Yes
- No. pretty uninteresting except the girl who spoke about N. Korea
- Yes – they offered insight from firsthand research and experience
- Yes -> it provides exposure to people's passions about specific areas/studies
- Yes because it made world hunger more real and personal. We got to hear firsthand accounts
- Yes! They were fresh faces and offered special insight into the subjects they talked about.
- Yes, it was insightful to learn info from a different person who specialized in their topic
- Yes, their lectures were very interesting.
- Yes. It's nice to hear information from people who lived in areas with hunger problems.
- Yes, it was nice to hear new voices/perspectives
- Yes!!! Great to hear experiences first hand
- Yes, but I would put them all on different days. Having a few in one day was overwhelming and a lot of information
- Yes, they contributed
- Yes, it's like a firsthand account
- Yes but maybe not 4 people because a lot of the information was repetitive
- Yes, it was nice to have personal opinions in class.
- Yes, the guest lecturers were very informative on hunger issues around the world.

Would you recommend this course to other Freshmen? Why or why not?

- Not ones who aren't sympathetic to hunger
- Yes, it is informative and fairly easy
- Absolutely! Great class not too much pressure
- Yes, it is a good course that isn't too difficult, yet you still will learn a lot. Interesting
- Yes
- Yes, not only was it interesting/informative, but also a good way to meet other freshmen
- This is a good refresher class. You actually learn things and make a difference in this class
- Yes
- Yes, fun and not too stressful
- Yes – it's very eye-opening and interesting
- Maybe, it has good intentions and a good topic but isn't as involved as I was expecting
- Yes because it is an interesting class that does not require too much work.
- Sure. The topics are interesting and relevant, up-to-date, and I think they are engaging. Thanks to both of you!
- Yes, it wasn't difficult, but at the same time, I learned a lot that I will never forget
- Yes, it's a very interesting course to take as a freshman.
- Yes. It was easy but very informative
- Yes. You learn a lot of valuable information.
- Yes – fun, make close friends, b/c of small class size great teachers
- Yes, because it taught me a lot but did not require hours of studying
- Yes, it is a learning experience and helps you transition into college
- Yes, it was really enlightening
- Yes – nutrition and health is something that pertains to everyone's life
- Yes, it is very different from other courses in a good way.
- Yes. The course is very informative and can change the perspectives of those who take it.

Appendix E: Student Online Course Evaluations

FRES 1020 Fall 2010, Tuesday Section Evaluation

1. **Was this course required for your degree?** [AVG: 1.00000 STDDEV: 0.00000]
 1. [13: 100.0%] No, not required
 2. [0: 0.0%] Yes, required
2. **On average, how many hours per week did you devote to this course outside of class?** [AVG: 1.07692 STDDEV: 0.27735]
 1. [12: 92.3%] 0-1 hours
 2. [1: 7.7%] 2-3 hours
 3. [0: 0.0%] 4-5 hours
 4. [0: 0.0%] 6-7 hours
 5. [0: 0.0%] 8 hours or more
3. **Assignments and activities were useful for helping me learn.** [AVG: 3.84615 STDDEV: 0.68874]
 1. [0: 0.0%] Strongly Disagree
 2. [0: 0.0%] Disagree
 3. [4: 30.8%] Neutral
 4. [7: 53.8%] Agree
 5. [2: 15.4%] Strongly Agree
4. **This course challenged me to think and learn.** [AVG: 3.69231 STDDEV: 0.63043]
 1. [0: 0.0%] Strongly Disagree
 2. [0: 0.0%] Disagree
 3. [5: 38.5%] Neutral
 4. [7: 53.8%] Agree
 5. [1: 7.7%] Strongly Agree

Comments:

In general, did you enjoy your FRES 1010 or 1020 class? Why?

- It was an interesting class. Although occasionally boring, the teachers did a good job of trying to explain different issues in depth.
- This class was interesting and I specifically enjoyed having speakers that were very knowledgeable in specific areas with experience in the field as well. I learned a lot more about world food security and insecurity than I probably would have ever known.
- Yeah. It was more relaxed and I could just sit back and learn.
- Yes! Even though I only signed up for it cause I needed another credit hour, I actually enjoyed learning about hunger issues and stuff!
- Yes. I developed an understanding of world hunger and what causes it. Both the TA and the professor were helpful and obviously enjoyed teaching the material. I felt motivated to do my work and my project.
- Yes, it opened my eyes to other things that are going on in the world. It was also not that demanding in the work load which was nice.
- Yes, it was easy.
- Yes, it was interesting. I got to learn about things I didn't know about.
- Yes, it was very informational. The information I learned in this class will benefit me in the future with my major.
- Yes the teachers were nice.

Did this class fulfill your expectations? Why?

- It was an interesting class, but not quite what I expected out of it. I felt that the subject matter was too broad to explain in such a short amount of class time.
- Yes, pretty much. It is interesting and not too challenging.
- Yes. I am a lot more knowledgeable about nutrition and how it affects childhood development.
- Yes. We learned about the problem of world hunger.
- I didn't really have any expectations going into it. I enjoyed it and was pretty happy with the class.
- Yes. It was informational and was a nice class to just enjoy and not have to worry about overwhelming work.
- I didn't really have any expectations for the lab.
- No, I thought it would be more general rather than focusing on a specific subject.
- Well the fact that I was confused on what the seminar was because of the description I read, I didn't really have any expectations. I thought the focus would be more on foods rather than the world's problems with nutrition. But even though I didn't know what to expect, the class turned out to be a good experience!
- Yes because I did not have many expectations of it.

Based on your experience in this seminar, would you consider taking another? Why?

- Probably not because it cuts into studying time without much of a compensation.
- Perhaps. It does take time going to and spending time of out class doing stuff for it, so it'd have to sound really interesting in order for me to take it.
- Yes, they are very easy and if the topic of the seminar is easy then you look forward to going to the class rather than dreading it.
Its also a easy way to get credits.
- Yes it is a course that does not take much effort but is interesting.

How would you recommend improving or changing the seminar program?

- I would recommend maybe adding some more hands-on activity in the class (like making peanut butter and jelly sandwiches for the homeless) and adding more information on the poverty in Athens.
- Having more hands on activities that require the students to be active in the topics
- Maybe focus more on organizations who are doing things to stop hunger.
- should be made into a three hour course! there was so much to talk about.
- Nothing comes to mind.
- Less statistical information and more case study and looking at approaches that have been tried might be more interesting.
- I don't know.
- I would add more activities to the class time. It was a lot of just sitting and hearing the instructor talk.
- The course was extremely easy. I wish it was less lecture based and there were more activities.
- Make them easier.

If this class had been taught with a different grading format, would you have taken it? Why?

- I was actually unaware that the class was on an A-F grading scale. Knowing that going in I probably would not have taken it. However, if it were pass-fail I would probably be more inclined to take it.
- No the grading seemed appropriate for the coursework and time commitment for the class
- Yes. I liked the sound of the course, so I took it!
- Yes. this freshman seminar taught about nutrition and hunger, which I believe is an important issue worthy of studying.
- Yes. It was very interesting.
- Depends on the format. I liked the grading format b/c it was fair and A-F and didn't require a ton of work to get an A.
- Probably, because the grades would be just as easy.
- No, I took it for an easy hour.
- No, I needed the hours.
Pass/Fail would have made me not take this course.
- Yes because it seemed interesting.

Please add any other comments you want to make.

- I really enjoyed my professor Dr. Johnson and my TA Ben. They were great people and fun to work with and be around.

- I really enjoyed my seminar and liked my teachers.
- Interesting class and very nice teachers!

Number of students in this course: 19

Number of evaluations for this course: 13

FRES 1020 Fall 2010, Thursday Section Evaluation

1. **Was this course required for your degree?** [AVG: 1.00000 STDDEV: 0.00000]
 1. [9: 100.0%] No, not required
 2. [0: 0.0%] Yes, required
2. **On average, how many hours per week did you devote to this course outside of class?** [AVG: 1.11111 STDDEV: 0.33333]
 1. [8: 88.9%] 0-1 hours
 2. [1: 11.1%] 2-3 hours
 3. [0: 0.0%] 4-5 hours
 4. [0: 0.0%] 6-7 hours
 5. [0: 0.0%] 8 hours or more
3. **Assignments and activities were useful for helping me learn.** [AVG: 3.33333 STDDEV: 1.50000]
 1. [2: 22.2%] Strongly Disagree
 2. [0: 0.0%] Disagree
 3. [2: 22.2%] Neutral
 4. [3: 33.3%] Agree
 5. [2: 22.2%] Strongly Agree
4. **This course challenged me to think and learn.** [AVG: 3.55556 STDDEV: 1.33333]
 1. [1: 11.1%] Strongly Disagree
 2. [1: 11.1%] Disagree
 3. [1: 11.1%] Neutral
 4. [4: 44.4%] Agree
 5. [2: 22.2%] Strongly Agree

Comments:

In general, did you enjoy your FRES 1010 or 1020 class? Why?

- At the beginning, I enjoyed the class but the class became less of a discussion and more of a lecture. The teacher would just read off of the power points.
- I did enjoy it because I learned many things that I did not know.
- I loved this class!
- No, not really. It was interesting but very mundane. The class is more geared towards Middle Schoolers than college students.
- Yes, because it was not too time consuming and the subject was interesting
- Yes because it was something I had never even really thought of beforehand.
- Yes, I enjoyed it because the topic of world hunger and nutrition has always interested me. That's why I signed up for the course in the first place.
- Yes! I learned a lot.
- Yes, the teaching staff was very likeable and fun.

Did this class fulfill your expectations? Why?

- I thought that I would have a lot more discussions in the class.
- I did not really have any expectations in the first place.
- Yes, Dr. Johnson was really great and truly interested in the topic of world hunger.
- Yes, it was a little more time consuming than I expected with the hunger project, but it was still not too strenuous and allowed me to still focus on my other classes
- Yes because we went into a lot of interesting topics.
- Although I did learn about hunger around the world, I wish we could have learned more about how to solve the problem. Also, I wish that the format of the class could have had more variety. After power point lectures each week, it would have been nice to have a new way of presentation, if at all possible. Maybe we could have watched a movie or documentary relating to what we learned, just to change things up.
- I didn't really know what it would be like, but I liked that we learned about a different vitamin every week.
- Yes, I came out of it with a better knowledge than I had coming in.

Based on your experience in this seminar, would you consider taking another? Why?

- No because I felt that it was a waste of time. We never talked about the issues at hand.
- I probably wouldn't because it is another class to worry about but its only a one hour credit.
- If I had room in my schedule then I would, because it was an interesting class that was fun to attend
- Yes because they cover different topics than general classes.
- Yes, I would consider taking another because seminars are great for learning about things we don't necessarily touch on in regular classes.
- Yes. I liked the small class.
- Probably not because I don't really have the time to devote to it but it definitely got me thinking about the problem of hunger.

How would you recommend improving or changing the seminar program?

- HAVE MORE DISCUSSIONS!
- The seminar shouldn't be a class students have to worry about. I also don't like the fact that they have finals.
- Make it harder and more thought provoking.
- I would not make attendance count for points but instead have in class activities on certain days that counted for points
- I thought it was well conducted and does not need to change.
- Honestly it was well organized and thoughtful.

If this class had been taught with a different grading format, would you have taken it? Why?

- I liked the grading in this class. I put in a good amount of effort and I think that I got the results that I deserved.
- I probably would have taken this class this semester regardless.
- Yes
- No. I was told I had to have all graded classes to apply to the honors college.
- No, because the way the grades were set up made this class easy to do well in without having to spend many hours studying
- I did like how this was not a pass/fail class
- In this class, learning about problems and truly understanding the issues is more important than the grades, which is very nice. So, I wouldn't have minded if it was taught with the same or different grading format.
- Yes, I am interested in the topic.
- No. I like that it was not pass/fail.

Please add any other comments you want to make.

- I really liked both teacher in the class!!
- I didn't enjoy being instructed to interact and I feel like I didn't get to know anyone very well.
- I think this freshman seminar is a great thing. It was very eye-opening and made me more aware of issues around the world and here in our country. Overall, I'm glad I took this course.

Number of students in this course: 15

Number of evaluations for this course: 9