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PLANET HEALTH: A SCHOOL-BASED HEALTH PROMOTION PROGRAM

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Jane Katherine Landon, Student

Dr. Corrine Williams, Committee Chair

Dr. Corrine Williams, Director of Graduate Studies

PLANET HEALTH: A SCHOOL-BASED HEALTH PROMOTION PROGRAM

CAPSTONE PROJECT PAPER

A paper submitted in partial fulfillment of the
requirements for the degree of
Master of Public Health
in the
University of Kentucky College of Public Health

By
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Presented in Lexington, Kentucky

8/31/17

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Abstract

The Kentucky River District Health Department (KRDHD) proposes implementation of Planet Health, a school-based intervention aimed at increasing healthful nutrition and fitness behaviors in middle- and high-school aged students. Planet Health's core messaging (increasing fruit and vegetable intake, increasing physical activity, decreasing screen time, decreasing sugar-sweetened beverage and trans-fat intake) contributes to our long-term goal of decreasing childhood obesity in our service area. Planet Health will be offered to 3 counties in our service area (Lee, Letcher and Wolfe) with planned expansion to all counties in the KRDHD service area within 5 years of the original pilot. This project will be a collaboration between KRDHD, local school systems, and a variety of community partners.

A. Target Population and Need

The Kentucky River District Health Department (KRDHD) is committed to improving the health of our residents through community cooperation, outreach and education. The focus of the proposed project aims to improve the health of middle- and high-school aged children in our service area by reducing behaviors linked to childhood obesity. Specifically, the behaviors we will focus on are increasing fruit, vegetable and whole grain consumption, increasing physical activity, decreasing trans-fat and sugar-sweetened beverage consumption and decreasing screen time.

Childhood obesity has become a serious issue in the United States. The 2013 Youth Risk Behavior Survey (YRBS) found that 14% of high school aged students in the U.S.

were obese. Likewise, the Centers for Disease Control and Prevention (CDC 2015) report that childhood obesity has quadrupled in adolescents over the past 30 years, with over one-third of children in the U.S. being classified as overweight or obese. Although this nationwide trend alone is alarming, Kentucky students had a higher prevalence of obesity, with 18% of high school aged children falling into the obese category (Kann et al., 2014).

The CDC (2015) reminds us that, “obesity [is] the result of caloric imbalance-too few calories expended for the amount of calories consumed.” Although concisely stated, decisions to move too little or eat too much can be complex, resulting from the built environment, learned behavior or many other external forces. It is no surprise that students in high school may often have poor health-related habits when we think of obesity as a compellation of many factors, some of which may be out of their control.

Unfortunately, certain children may have a greater risk of becoming overweight than their peers. One risk factor appears to be rural residence; the Health Resources and Services Administration (HRSA) notes that rural children experience a higher rate of obesity than their urban counterparts (HRSA 2010). In research by Singh, Siahpush and Kogan (2010), the odds of a child being obese increased by 20-60% if they were from less desirable neighborhoods. Although desirability could be decided in many ways, one factor the researchers considered was availability of parks, recreational centers and sidewalks. Access to these features increased desirability of a residence while decreasing a child’s likelihood of becoming overweight or obese. Where a child resides is one of the things they will have least control, and most rural residences are lacking in the structures mentioned above: parks, rec centers and sidewalks.

With this knowledge, interventions for childhood obesity would be well placed in rural areas. By examining the U.S. Department of Agriculture's Rural-Urban Continuum Codes (2013), 25 of Kentucky's 120 counties fall into the most rural category, a score of "9", denoting the counties whose urban centers have less than 2,500 people in their population; 6 out of 7 counties in KRDHD's service area fall into this most rural distinction.

In addition to assessing a county's rurality, child food insecurity rates in each county were reviewed. It seems that being food insecure would predispose a child to being underweight, but according to the Food Action and Research Center (2011), children who are considered food insecure are more likely to be overweight. Targeting children in rural areas will be a focus given these students are more likely to live in poverty. As poverty often leads to food insecurity and in turn, food insecurity leads to poor nutrition and weight issues, this compounds the health department's need to focus on these particular students for the greatest collective impact.

Data on food insecurity was found through Map the Meal Gap, a summary of information collected by the Feeding America network of food banks across the U.S. This measure takes into account the USDA's food insecurity measure along with several additional measures including poverty and unemployment data at a county level. KRDHD counties with a food insecurity rate of 30% or higher will be targeted to refine the focus of the project; these counties appear in Table 1.

Table 1. Rural Counties' Child Food Insecurity Rates

County Name	Child Food Insecurity Rate	# of Food Insecure Children
Lee County	34.3%	510
Letcher County	31.2%	1,670
Wolfe County	35.4%	620

Although it is difficult to find county-specific data on child obesity rates for this age group, by targeting counties

with high percentages of child food insecurity and counties that are considered the most rural in the state, we should be serving a population that is vulnerable to having issues with overweight or obesity. Because KRDHD covers three extremely rural, food insecure counties, Lee, Letcher and Wolfe Counties will be the targets for this intervention.

Also of note are the adult obesity rates in the counties chosen. According to the County Health Rankings database, each targeted county has an adult obesity rate of at least 30% (RWJF and University of Wisconsin 2016). In addition, a percentage of preschoolers in our target counties are already considered to be obese (National Institute for Children’s Health Quality 2016). Although any Kentucky county would be an excellent target for an intervention, our particular target counties show even more need for this type of intervention because preschoolers who are already obese are likely to become obese teenagers and adults. Table 2 shows information on obesity rates in our counties.

Table 2. Adult and Preschool-Aged Obesity in Targeted Counties

County Name	Adult Obesity Rate	% Low Income, Obese Preschoolers
Lee County	30%	10.1%
Letcher County	38%	19.5%
Wolfe County	33%	18.5%

To determine possible participation in these programs, each school

district in the target area was analyzed for number of students in middle or high school. This was done by using data from the Kentucky Department of Education (KDE)'s school report cards for the 2014-2015 school year. Only major middle and high schools in the district were included in this chart where every student would be a potential participant. Wolfe County has two private schools with minimal enrollment while other districts include grades 6, 7 or 8 in their elementary school. The table below displays enrollment for our participating schools.

Table 3. School District Information

School District	Schools in District	Total Enrollment
Lee County	Lee County Middle Lee County High	539
Letcher County	Fleming Neon Middle Letcher Central High Letcher Middle Whitesburg Middle	1380
Wolfe County	Wolfe Middle Wolfe High	560
Total Students		2,479

This table shows that up to 2,479 students could be impacted by the health promotion program in the three target counties. By working with school personnel to enroll the most possible schools and classrooms, the reach of the program can be maximized. By having a program during school hours, retention rates are not an issue. We estimate

that 95% of the students who begin our curriculum will continue, with a small level of attrition for students who may move or transfer during the school year.

When implementing the curriculum within the school system, it is also important to look at other resources and services provided in the counties that have been targeted. The program should be an additional service and not take away from other programs that have similar goals. It is KRDHD’s experience that most youth programming in our area is done through libraries and Cooperative Extension offices, especially the 4-H Program, which is why those services have been included in Table 4. Some other resources, such as local hospitals, will provide support in the form of advisory board members or referral sources. Of note, the KRDHD has working relationships with all providers listed in Table 4. For example, KRDHD provides school nurses, immunizations and dental clinics for each school district within the service area. These partnerships will continue to be strengthened by implementation of another collaborative program.

Table 4. Relevant County Resources

County	Total # Schools	# Hospitals	Parks/Rec Facilities?	Library?	4H Program?
Lee	4	N	Y (1 rec center)	Y	Y
Letcher	8	Y	Y (5 parks, 1 state park, 1 rec center)	Y	Y
Wolfe	5	N	N	Y	Y

B. Program Approach

KRDHD's Community Needs Assessment process, completed in 2012, showed a significant need for more programs targeted to children 18 and under, specifically those programs related to nutrition and physical activity. For that reason, a research-tested intervention program (RTIP) was selected from the National Cancer Institute (NCI)'s RTIPs database (2014) that was designed for groups of children between 11 and 18 years old. By using RTIPs, we can ensure that the program selected has proven effective in the past and has been critically reviewed by other health professionals and researchers. This program targets health behaviors that are linked to overweight and obesity status in children and by implementing it, we would hope to see an increase in positive health behaviors related to physical activity and nutrition.

The chosen evidence-based program is called the Planet Health (PH) Program (2007), which was a research project of the Harvard School of Public Health. This program showed statistically significant decreases in obesity, particularly in female participants, who registered a 3.3% decrease in BMI over the two-year project (Gortmaker *et al.* 1999). PH provides a school-based curriculum highlighting physical activity and nutrition, key components of preventing childhood obesity. Students learn about positive health behaviors with mathematics, science and social studies skills incorporated into the lesson plans. For example, in Lesson 11, students are faced with a real-world challenge: they have \$6 to spend and 3 restaurant choices with varying healthful options. Students must complete math problems to determine the most healthful option for their money, an exercise that involves both mathematical and problem solving skills.

The PH curriculum is a good fit for communities with low resources, because it can be implemented in a large number of classrooms at a low cost (the cost of manuals and printouts only). Wang and colleagues (2003) found that the cost of the PH intervention would be only \$14.00 per student per year while garnering savings in health care costs of \$15,887 per participant. When working with schools, the cost-benefit ratio of the program could be an advantage of the program that is mentioned. Because the program is evidence-based, this information can be accurately provided instead of implementing a program with no known outcomes.

By choosing a versatile program, we can ensure that it is implemented in several classroom settings across the health department's service area. The program lends itself to reinforcement and is not a one-time occurrence. In the PH curriculum, there are 35 lesson plans and 31 micro units available (2007). Each of these programs have manuals and toolkits to ensure adequate training for staff could be implemented over the course of an entire school year. With the large number of lesson plans, there will not be repeating of lessons or overlap between classes. We realize that most of our service area is rural and access to afterschool programs is limited. By choosing a school-based intervention, we can ensure that the maximum number of children are exposed to the program, which makes PH a natural fit for the KRDHD's service area.

Although these programs were designed for individuals in our target age group, attention should be paid to the cultural content of the program. For example, PH was studied in Boston initially; our plans are to implement this curriculum in targeted rural Kentucky counties. To ensure the material will be well received and understood by children in our target audience and geographic area, during the first six months of the

grant period, local educators and key stakeholders will review the materials and provide suggestions or edits. Local educators will also review criteria to ensure chosen lesson plans fit within the state-required curriculum.

To ensure that the program material is sensitive to children and families who are food insecure, the local Food Bank will be involved with review of the materials, as well as educators from the local Cooperative Extension offices, who often deal with food insecure audiences with limited grocery budgets. A University of Kentucky (UK) College of Public Health Associate Professor, Dr. Simms, who specializes in implementation of nutrition programs will also be brought in as a reviewer to ensure the program is appropriate for rural and potentially food-insecure audiences.

This program will not stigmatize children, because the program targets all students, not those of particular body weights. For example, if several schools implement PH, all children will receive the same information and will not feel that they have been singled out for this intervention based on their weight status or any other factors.

Overall, this program should be beneficial for all children participating in it, as they will learn more about healthy eating and physical activity, which are subjects everyone would benefit from in their early lives. We do recognize that programs regarding these topics may unearth students who have conditions they are struggling with that are beyond the scope of the PH curriculum. Through our connections with our Planet Health Advisory Board (PHAB), we will be able to make appropriate referrals for students that might have issues such as eating disorders or morbid obesity to Registered Dietitians who specialize in these fields. We will also have connections with

the regional Food Bank, which could provide referrals to students who are struggling with food insecurity.

Educators will welcome this program into their classroom because it will alleviate some of the burden of creating their own lesson plans. Assuredly, some teachers would like to teach wellness topics to their students, but find themselves too busy to create or find a curriculum that addresses these topics. PH will be available for teachers to implement with support from health department staff without requiring a large amount of a teacher's time. Because we already have support of all superintendents, we expect no issues with implementing into each of the schools we have targeted.

Educators will verify that PH meets Kentucky's core curriculum, which is especially appealing as new test scores are revealed throughout the state. In looking at the Kentucky Department of Education's report cards (2015) for each of the targeted school districts, it can be noted that several of the schools are below the state average in overall test scores. For example, both Wolfe County and Lee County Middle Schools are listed as schools that "need improvement" for the upcoming school year.

A detailed logic model for the program is shown in Appendix 3.

Based on the Rand Getting to Outcomes Model (Chinman, Imm, and Wandersman 2004), an outline of activities was created. The steps to this approach are: focus, target, adopt, adapt, resources, plan, monitor, evaluate, improve, and sustain. As stated previously, the focus of this intervention is childhood obesity, with a target of rural counties in Kentucky. Specifically, rural Kentucky counties within KRDHD that have high rates of child food insecurity will be chosen. This intervention will focus on

producing outcomes in areas such as increased physical activity, increased fruit/vegetable intake, increased whole grain intake and decreased sugar-sweetened beverage consumption.

Instead of creating a new curriculum, the KRDHD has chosen to adopt the PH curriculum, a research-based intervention, for this project since the goals of this program closely align with our own goals. The program will be adapted appropriately for the rural audience. This adaptation will be done with assistance from the PHAB, which will oversee the project and will be comprised of specialists from various community organizations.

The KRDHD already has a viable staff to assist with the program; the Health Education Director (HED) has been instrumental in providing insight for this application. We will work with a biostatistician at UK to analyze data along with the aforementioned UK College of Public Health Associate Professor. KRDHD infrastructure and staff, coupled with the Health Department's ample community ties, will provide all the necessary resources for successful implementation and evaluation of this project.

The KRDHD has strong working relationships with several local universities, including UK and Eastern Kentucky University (EKU). Both of these schools have health sciences programs where graduate students are required to complete field work in the form of practicums or internships. These students are key resources in implementing this program. They will be called "Graduate Health Workers" or GHW in future references to avoid confusion between these students and students receiving the intervention.

The health department will work with the University's Area Health Education Center (AHEC), which provides housing and mileage reimbursement for students who are in health-related educational programs outside of the University's local area. That will allow GHW who may not be from the towns near the universities to find housing in the rural counties designated for this intervention, which will likely be over an hour (or more) drive away from a student's residence. We will also make every effort to place students in the location nearest their current residence or even their hometown if we are able. Otherwise, the living stipend provided will be more than appropriate to compensate GHW for travel costs.

The HED has already begun preliminary research on this program, as evidenced by information provided throughout this application. Lists of area schools along with demographics for each school have already been compiled. In spring 2016, more background research will be compiled on each targeted county and our PHAB will be formed to guide this process. This will also be when recruitment of GHW will begin. This planning period has already unofficially started while writing this grant, and will continue through July 31, 2016.

As alluded to previously, collaboration within the community is needed for any program to be successful, and PH is no exception. An advisory group of key stakeholders will be formed in each county and will be called the PHAB. The group will be headed by a Chair elected by the membership. Based on the target audience, we will need community members from the school system, Cooperative Extension office, the Food Bank, elected officials and the local health centers and hospitals. These members will

receive a small honorarium for their dedication to the project. Each PHAB member will have a unique viewpoint or role to play in the group:

- **School System:** By inviting a principal, a teacher, a student, a Food Service Director and a parent representative to join our Board, we will have connections to the school system. The parent representative will serve as a champion for the program amongst parents by learning more about the curriculum and the positive benefits it provides to students. Experienced and respected teachers are key to getting the program implemented within a particular school, so their cooperation is necessary for this Board and the program in general. The student aspect of this project should not be overlooked. By having at least one student member, we can determine how this curriculum might be viewed by his or her peer group and can determine what (if any) adaptations might make the program more palatable for our audience. The Food Service Director may assist with implementation of other programs that complement our efforts to improve nutrition for teenaged students.
- **Cooperative Extension Service:** The 4-H Afterschool Program is hosted by each county's Extension Service and they are connected to the citizens in a rural county, which could provide leverage for our program implementation.
- **Regional Food Bank:** God's Pantry Food Bank covers the 3 counties we have chosen to target. A staff member will ensure our program materials are relevant to a potentially food insecure audience. This member of our Board will also have connections with local hunger-relief organizations in case referrals are needed for students.

- Elected Officials. Although student education is a step in the right direction, knowledge alone is not powerful enough to change a problem as multifaceted as childhood obesity. By having local officials on the PHAB, we will enact county-wide changes in health behaviors through legislation and government influence.
- Local Health Centers. Each KRDHD county has its own local health center. A staff member from target counties will be invited on the PHAB. The Health Centers may be able to provide staff for certain aspects of this project, and are also very familiar with the communities in which they provide services.
- Hospitals. Similar to the local health centers, the hospitals are seen as knowledgeable and trustworthy community members. Although our program is evidence-based, a local nurse or other health professional would provide even more credibility to our project within the community. The health department has a solid working relationship with the Appalachian Regional Hospital (ARH) in Whitesburg (Letcher County) and so we would anticipate this hospital would desire to have a representative on our PHAB. The hospital could be a source to referrals for students with health conditions beyond the scope of our program.

By using the “Strategies Guides by Best Practice for Community Mobilization” toolkit from Advocates for Youth (2014), we hope to best utilize the PHAB. Each step of this program is outlined below along with how these steps will fit into our project.

1. Secure Strong Leadership. This program will have a KRDHD staff member assigned for the project. Our HED has 10 years of experience working with community education and manages 4 staff members. With her leadership skills

along with the expertise of the PHAB, the project has the strong leadership needed to succeed.

2. **Establish a Formal Structure.** By establishing the PHAB, these community members will be able to structure the program in a way that best fits the needs of the individual counties in which we are working. A Chair and Co-Chair for each county PHAB will be selected based on a vote from the membership of the Board. PHAB meetings will be structured based on Roberts' Rules of Order.
3. **Engage Diverse Organizations, Community Leaders and Residents.** This step is met by the creation of the PHAB. By inviting members from a variety of professions and organizations, we can ensure diversity of our Board.
4. **Ensure Authentic Participation and Shared Decision Making.** This project will rely heavily on the sites in which we implement our program. By having representatives from sites on our PHAB, we can ensure that they have participation in decision making. We expect and encourage feedback on our project.
5. **Ensure Authentic and Productive Roles for Young People.** Instead of having children as passive vessels for knowledge, we want to empower them to make positive lifestyle choices. Our student-centric approach is evident by the inclusion of students on our PHAB.
6. **Develop a Shared Vision.** As seen in the flow chart for this project, our long-term vision is to improve a variety of health indicators in the students receiving this program. The PHAB will be able to mold a mission statement specific to our project that is aligned with the goals set forth by the curriculum.

7. Conduct a Needs Assessment. KRDHD has already completed a Needs Assessment for the communities in question, which will be employed for this project.
8. Create a Strategic Plan. PHAB members will devise a focused strategic plan. Although educating students is a worthwhile endeavor, we want to ensure that the changes we suggest in our educational program are implemented for the long-term. The strategic plan will provide long-term solutions to improved health outcomes in students that can be implemented in our target region.
9. Implement Mutually Reinforcing Strategies. In addition to the PH curriculum implementation, our PHAB will look at other complementary strategies that may work well in our targeted communities. We would like to find ways that the school and the community at large can reinforce the concepts taught in PH. For example, adding water bottle filling stations in each school and providing water bottles to each student should decrease sugar-sweetened beverage intake. These strategies could be determined by our PHAB and implemented in concert with PH. The PHAB will also look at policy-level change that could be implemented in the school systems and the communities at large.
10. Create a Fundraising Strategy. Currently, we are seeking grant funding to ensure that this program can be piloted in our 3 target counties. In the future, this may be something that is worked into the health department budget to ensure that it is sustainable. We aim to provide positive outcomes to give evidence of the benefits of this intervention, which will justify the use of health department funding for its continuation. PHAB will pursue alternative sources of funding when needed.

11. Establish Effective Channels for Internal Communication. PHAB meetings will take place every month, and PHAB members will be a part of an e-mail list where all relevant updates are given. These updates will be prepared by the media consultant working with the project and will be completed at least every other week.
12. Educate the Community. We would like to disseminate information about this project to the community at large with the use of a targeted strategy developed by a media consultant. We would start in the school system, announcing this project at Parent Teacher Association meetings and staff events. We also plan to invite local media outlets to provide coverage on PH. The media consultant will also start a Facebook and Instagram account for the PH program so that community members can be informed about the program.
13. Conduct Process and Outcome Evaluations. Evaluation during the project has already been planned, as our HED will conduct site visits frequently to ensure that the program has been properly implemented. At the end of the program, a UK biostatistician will assist the HED in providing outcome evaluation for the program. This will all be reported to the PHAB.
14. Evaluate the Community Mobilization Effort Separately. The PHAB, HED and media consultant will evaluate the mobilization effort and determine what we can do more effectively in future implementations of this program.

Once the PHAB is established, local schools can be approached by the HED and members of the PHAB to gauge interest and to enroll schools for the intervention. We have already received a commitment from each school districts' superintendent to allow us to provide a health promotion program within the school system; we will still need to

recruit individual schools and classrooms. It is our goal to have at least one school in each county as a participant, although we would certainly welcome higher levels of participation.

When schools are recruited, the HED will visit each school to set up a schedule of the lessons that will be provided and which classrooms within a school will participate. This will happen during the summer months when administrators are more readily available and teachers are completing professional development (PD) days. If approved by the school district, PH information would be provided as part of a PD day for teachers to increase their exposure to the program. Classrooms will commit to 16 lessons per school year as per the original PH intervention. This equates to approximately 2 lessons per month during the school year. The lesson plans are broken down by subject content (social studies, math, science, language arts), so the lessons chosen would be based on the type of classroom subject taught by the primary teacher. Lesson 1 is a basic introduction and would be first in the series, but otherwise the lessons could be interchangeable based on the classroom and the subject matter desired.

Teachers will commit to providing the actual instruction of the program, while GHW will be an invaluable classroom resource, providing support for their assigned classrooms. Teachers will also be responsible for facilitating the parental consent process. This is a familiar process to teachers, as many field trips or special events require permission slips.

GHW will be selected and oriented in early summer. Orientation will take place at a nearby state park facility and will be facilitated by our UK College of Public Health

professor along with the HED. This training will be at least 5 days long to ensure that each GHW is fully prepared. Each GHW will then be assigned to a school. GHW will be encouraged to attend all teacher PD days as well so they can meet the teachers that they will be working with throughout the school year.

Once the school year has begun, each classroom will begin their lessons per the agreed upon schedule. The HED will visit each school within the first month of the program to ensure that the curriculum is being taught according to program guidelines. If no major problems are observed, monitoring visits will occur at least two other times throughout the school year. If discrepancies are found in the teaching methods or implementation of the program, the HED will document these discrepancies and provide an appropriate corrective action for the situation. For example, if a key part of the curriculum has been left out, the HED may discuss with the teacher the importance of program fidelity with a retraining session. All visits will be documented with a write-up of findings, both positive and negative.

Throughout the school year, the HED will receive frequent feedback from GHW on number of lesson plans implemented, number of students impacted and other relevant pieces of data. She will also conduct interviews or focus groups with the teachers and students that participate in the PH Project. These groups will provide helpful feedback that will allow this intervention to evolve and improve for the subsequent school year.

As another part of this curriculum, it is hoped that the school will make environmental changes such as removing unhealthy concessions and increasing fruit and vegetable availability. There may be opportunities at each school to designate walking paths and

have afterschool time for physical activity in the school gym or common areas. With the entire school's buy-in for a healthier environment, the retention of students and staff is more likely. To facilitate this process, we are providing each school with 2 water bottle fill stations. We hope this addition will inspire schools to make continuous improvement to their built environments.

To ensure that schools have continuous buy-in throughout the life cycle of the program, and won't experience program fatigue, we will provide mini-grants during Year 3 of our program to schools who have participated in PH since Year 1. If still participating, our 8 schools will each receive \$20,000 to complete a health-related project at their school (e.g. increasing playground equipment).

To determine what project to complete at each school, the teachers implementing the PH curriculum will work with their students to determine priorities for their school.

Schools, with large involvement from the student body, can vote on the project they feel will have the greatest impact on their environment.

This process will create a lasting infrastructure of health in the communities PH is a part of in eastern Kentucky. In addition to continuing with the PH curriculum, we realize that budgeting for additional improvements is a struggle for many schools. By providing money earmarked for improving health, we can alleviate budgetary stress while continuing the strides made by the project.

A teacher representative from each school will have all expenses paid to attend the School Nutrition Association (SNA) conference. This conference will further highlight the need for improved school health and nutrition programs and policies. By having

teachers attend this conference and bringing home the information to their schools, we can extend the work of this project to last beyond the 3 year grant period. This is also an extra incentive for schools, as money for extra conferences is usually not available.

Incentives will be provided to participants of the program to reinforce concepts taught during PH. For example, year 1 participants will receive PH-branded water bottles as a reminder to drink water over sugar-sweetened beverages. We will also provide FitBit mobile tracking brands during the first year of the program for data collection and activity monitoring. The health department will provide other small incentives as available.

Once the curriculum is implemented, retention will not be an issue. Students will be automatically retained into the program as long as their teacher continues to participate. If successful, this program could be self-sustaining. The curriculum would be a one-time purchase, with programs manuals gifted to each school. GHW could be regenerated year after year from local universities, although stipends would be dependent on funding. Teachers will be trained on program implementation so that they can continue the program regardless of funding. Changes to the built environment, such as water refilling stations, will be permanent additions to each school.

We will continue to seek funding for this program so that it can be expanded into new schools, however. KRDHD would like to make PH a permanent program that we offer with a goal of every middle and high school in our district to receiving this program.

C. Performance Measures and Evaluation

An important part of any program's implementation is to continuously monitor the program for correct implementation and progress. The concept of fidelity is succinctly defined by the U.S. Department of Health and Human Services (DHHS) as, "the faithfulness with which a program or curriculum is implemented," (2015). This concept is further divided into subgroups: what content is being taught, how the content is being taught, and the atmosphere in which the program is being taught.

For successful implementation of PH in rural Kentucky counties, constant monitoring is needed. GHW will ensure that the local instructor or teacher at the site is comfortable with teaching lesson and will be a support person for classrooms. These GHW will come from health backgrounds and will be selected from post-baccalaureate level health sciences programs creating sustainability for the program since graduate students are always in need of projects. GHW will remain in their assigned classroom or school to assist with the curriculum, but will allow the teachers to follow the lesson plans and provide them to their students.

The HED will be responsible for constant monitoring of how teachers are providing PH. Monitoring will consist of observing how closely content taught adheres to the program manual, determining if teachers are prepared to teach the curriculum and are interacting well with their audience. GHW will be responsible for providing data on how many lesson plans were taught at each school and how many children were in each class.

The HED will also rely on feedback from classroom teachers. This would likely be done in a small group setting, with all presenters from a school discussing their experiences. Teachers from a particular school would be encouraged to have discussion forums on

their likes and dislikes of the program and how it could be improved in previous years. The HED would be available to facilitate these sessions as needed.

The HED will have regular interaction with GHW via phone or e-mail in addition to the in-person visits so that there can be open communication. This will also allow for GHW to express their ideas or concerns about the program and its implementation. For example, if the GHW notices that students are not responding to a particular lesson plan, the HED and the GHW can brainstorm alternate ways to deliver the content that still align with the program goals. This form of interaction should occur no less than weekly.

KRDHD will also collect pre- and post-test data. Each student-participant will complete a self-assessment at the beginning of the course and then again at the end. The self-assessment focuses on the 6 core PH messages: decreased sugar-sweetened beverage and trans-fat intake, decreased screen time, increased fruit/vegetable, whole grain intake and increased physical activity.

With pre- and post-test data, we can see changes in student's self-reported behavior over the course of the PH program. We will use FitBit bands to monitor students' activity levels. The distribution of FitBits to students and the collection of data from these devices will require parental consent and student assent, which will be collected at the beginning of the program through a parent permission slip process. Data collected will be minimally invasive and will consist primarily of number of steps taken daily. Teachers and GHW will be responsible for checking in with students to assure that they are still using their bands; reminders at least weekly should be implemented.

We assume that a small percentage of students will not wear their bands due to lost bands, non-students using bands or other issues, and their data will not be included in our analysis. Overall, the FitBit bands provide an added benefit in that classrooms, sports teams or friend groups can set challenges for themselves, which should add to increased activity among students. They also provide a source of data that is not self-reported, unlike the pre- and post-test data.

Although we cannot directly attribute the changes seen in students' self-assessments to our curriculum, we can assess the site environment to determine if health and fitness topics are being taught in another course or in another way. For example, if students at an afterschool program are also receiving physical education and nutrition classes at school, it would be difficult to say that our curriculum alone led to the change in pre- and post-testing. However, if no other sources of this type of education are noted, our program may likely be the source of the change in behaviors noted by the students in their self-assessments.

The pre- and post-test data will be analyzed for changes in behavior for all participants, and will also be analyzed for each site individually. This will allow us to determine if a particular school or classroom had significant improvement over another type of program. For example, if 6th grade classrooms had higher rates of improvement in all categories over 8th grade classrooms, the program may need to be implemented exclusively in 6th grade classrooms the next year that it is done or changes may be needed in the 8th grade classroom to ensure consistent results.

We can also look at individual student data to see if students of a certain age, gender or socioeconomic status had better outcomes than other students. This data collection will allow for future program tailoring to specific groups of students.

To further research of the impact of PH on students' health behaviors, we propose to closely follow the Kentucky YRBS questionnaire. We would request that the survey be given to all middle and high school-aged students in Lee, Letcher and Wolfe Counties in addition to other counties in the state that already receive the questionnaire.

Many of the PH outcomes are already questions on the survey (CDC 2014). We would propose adding a question about sugar-sweetened beverages to the middle school version of the YRBS to match the questions provided to high-school aged students.

The existing question states, "During the past 7 days, how many times did you drink a can, bottle or glass of soda or pop, such as Coke, Pepsi or Sprite?" (CDC 2014). This question could easily be duplicated for our purposes.

By using this questionnaire, we could compare an average Kentucky middle- or high-school student with students who have received the curriculum. Because the YRBS asks questions about most of the PH concepts, it would be a good barometer for students in the state versus students in our target counties. We speculate that students in our target counties would fall below state averages for health-related behaviors since we see this trend in many adult health behaviors related to nutrition and physical activity. We could compare pre-intervention data with data compiled at the end of the 3-year period to see what changes occurred in our population as well as making comparisons to the state of Kentucky as a whole.

By utilizing our GHW and a UK biostatistician, we will have ample time in which to complete any data collection and analysis needed. Data from GHW will be sent to the HED on a weekly basis to ensure timely data analysis except for the pre- and post-tests, which will be sent at the beginning and end of the program. The HED, who is experienced in grant writing and reporting, will have adequate time to provide complete and accurate reports to OAH.

Obtaining data from school-aged children can be an issue. The PH implementation team and the PHAB will work with each school system to ensure that parental consent and student-participant assent is given before collecting health data. This includes informing all parents and student-participants of how this data will be used and who it will be shared with. The data collected will not include any personally identifying information such as name, social security number, zip code but will include grade in school, gender and age. Students will instead be assigned a unique number so that pre- and post-test data can still be analyzed by individual student and so that students' data will have anonymity. Teachers will be instructed to leave them room and GHW or a third-party health department employee will be administering all surveys so students feel that they can answer candidly. This should help us avoid any social desirability bias, as students might be likely to answer in the way that they feel their teacher would want them to answer if the teacher were administering the surveys.

Race/ethnicity will not be addressed due to the limited diversity in these rural school districts; each school has 97% or greater Caucasian students according to their School Report Card for 2014-2015. Parents will likely not opt-out of this data collection since it is not invasive, but if they do, these student-participants will not receive the pre- and

post-test and will not be involved in data collection or analysis except for recording them as a unique student-participant in the program for an accurate count of number of students receiving the program. These students can still receive a FitBit band and participate in the educational lessons so they are not ostracized from their classmates.

Once data is analyzed, it will be disseminated to schools involved in the program so they can determine the impact PH had on their school. Reports will be sent to each participating school's principal at the end of the project year. This information could then be presented at Parent Teacher Association (PTA), Kentucky Education Association (KEA) or school board meetings. The data could also be shared with local media outlets in order to gain public support for the program or state organizations like KDE or Kentucky Department of Public Health (KDPH), so that the program could be replicated in other areas of Kentucky.

Information provided should include the names of the schools involved, number of participants, an outline of the project and any positive health behaviors attributed to the program. This information will show the scope of the project and its impact on the community. A detailed dissemination strategy will be developed by our media consultant with input from the PHAB. Overall, KRHD is familiar with the collection and reporting of data required for a grant of this magnitude and has ample staffing to complete all necessary tasks associated with program evaluation.

D. Capacity and Experience of the Applicant Organization

KRDHD is devoted to serving its residents by providing quality health education and health care in an accessible manner. To meet this goal, we provide educational

opportunities targeted to meet the needs of our residents. After our community needs assessment process, we learned our community wanted a stronger focus on health education for middle- and high-school aged students. This finding prompted us to find a program that we could provide to our region that would meet this need. PH was chosen as an evidence-based solution to provide more student health education. We have full support of the health department's Director, who presented the PH program to the Board of Directors at their most recent meeting. The program was met with unanimous approval as PH closely aligns with one of the key missions of our health department: to promote healthy lifestyles in residents of our community from birth to old age. Our Board strongly agrees that a long-term reduction in childhood obesity in our service area fits within this mission.

Our Health Department covers seven counties and has a wealth of experience in program implementation throughout all of these counties. Ongoing health promotion projects include classes in diabetes self-care, tobacco use cessation, breastfeeding support and well-child care. We implement evidence-based initiatives, such the HANDS (Health Access Nurturing Developmental Services) or First Steps Programs, to ensure that we are providing quality, effective health information and programming to our residents.

The First Steps Program is a prime example of our health department's success in implementing a large scale program similar to the PH program we are proposing. First Steps is federally funded program that provides children with developmental disabilities additional resources based on an individualized needs assessment. These

resources might range from physical or speech therapy to a visit with a teacher certified in visual impairment, all based on the child's needs. Our health department managed a caseload of 169 children in our 2013 fiscal year while meeting or exceeding all statewide targets for providing timely services and for improving outcomes in these children.

The First Steps Programs is only one example of our meticulous record keeping. The health department relies on data from our programs to justify continuing or discontinuing a particular service. We conduct evaluation throughout the lifecycle of a program to ensure it is meeting its goals. Although the particular data varies by the program specifics, PH will be no different. Data collection and evaluation throughout the process will ensure our program is on target. In the example of First Steps, we used data collected to set a new caseload goal (200 families for FY 16) based on the current participation and the number of eligible families in our service area.

Our programs also require devoted and well-trained staff. The health department employs registered nurses, registered dietitians, licensed social workers and employees with advanced degrees in public health so that we can have a qualified staff interacting with the residents of our counties. Our main branch's nine full-time staff members have a combined 138 years of health department experience and has spent innumerable hours on health promotion projects. We also employ staff members at local health centers in each of our 7 counties.

Staff members are evaluated on their work performance on a yearly basis to ensure that any areas of improvement can be identified and to reward valuable employees. This

process incentivized valued employees to stay at their jobs by offering merit-based pay raises based on evaluation results; this contributes to a low staff turnover, with only two employees having left within the last 5 years (both for relocation to other areas of the country). We find that this process makes for loyal employees who are dedicated to their jobs and so we anticipate that all staff members working on PH will remain with our organization for the duration of the program.

We also provide staff members will professional development (PD) no less than yearly and targeted to their field of study. For example, our Registered Dietitian annually attends the Kentucky Academy of Nutrition and Dietetics conference as a part of PD. KRHD also brings speakers into the health department quarterly to cover topics such as workplace wellness or first-aid training based on the needs of our staff.

For this project, our HED will be responsible for the management and implementation of this program. As mentioned previously, the HED has 10 years of experience and has degrees in both Nursing and Health Administration, making her a perfect fit for the implementation of this program. She also currently manages a staff of four employees and regularly hosts interns and students from local universities.

Our HED plays a key role in forming the community partnerships needed to get a project off the ground. She routinely works with local schools, government agencies and a variety of non-profits in our service area. These partners provide support in a myriad of ways, including financial supporting programs, recruiting volunteer power, loaning equipment and supplies, and participating in advisory boards. Our ongoing

relationships with community partners strengthen our ability to provide a successful health promotion program.

Fostering the relationships we currently have with partners while forming new partnerships is a responsibility of every member at KRHD. Our Director ensures that each partner receives an annual report of projects that they were a part of, including relevant outcomes. For example, on the aforementioned First Steps Program, we relied heavily on our partnership with ARH. The hospital provided referrals into our program from their clinic system. We were able to send an annual report of how many referrals were made total, and how many came from each clinic in the partnership. These sorts of reports, along with quarterly check-in calls or e-mails from First Steps Program staff, allow us to maintain our partnerships and to assess which partnerships are valuable and which may not be providing valuable assistance.

PH will require various partnerships, as have been outlined throughout this application. The PHAB will have partners from many different organizations coming together for a common goal. Having an advisory board for a program is not a new concept for KRHD. We employ this strategy for our other health promotion programs, including for our Diabetes Self-Care, Breastfeeding Support and First Steps Programs. These advisory boards allow input from organizations with similar missions. Our KRHD Director welcomes input and collaboration from partners throughout the region in order to create the most cohesive and effective programming possible. These champions assist KRHD in promoting and implementing

programming throughout the 7 county service area and beyond and many were essential in creating our Community Needs Assessment.

Financial transparency is crucial to the workings of any government agency and our health department is no different. As a part of the Kentucky Department for Public Health, our department is able to utilize the state's Division of Administration and Financial Management (AFM) to ensure that funding from grants, or federal and state funding sources are appropriately managed and allocated. The AFM office provides annual financial management training to all local health department administrators so that our staff can be well-versed in management of a variety of funding sources and types. Because of our training from this office and our years of experience in managing grants, we are effectively managing funds from Medicaid, Medicare, private insurance companies, federal and state funding and local grants for a total operating budget of \$5,000,000. Of this budget, \$1,200,000 are specifically for health promotion programs.

Health promotion projects also require a strong focus on providing equal access to a program for all individuals in the target population. The health department follows a strict policy forbidding discrimination on the basis of age, disability, sex, race, color, national origin, religion, sexual orientation or gender identity. We strive to make our programs accessible for all who may benefit from them. This policy is also a part of our hiring philosophy. We intend to make PH available to all middle- and high-schools within our target area.

E. Partnerships and Collaboration

The KRDHD is a well-recognized organization within the community. We are already an active part of many boards, health coalitions and committees and have good working relationships with local government officials, school systems, faith-based organizations, non-profits and businesses. For PH to work, we have no doubt that we will need the continuing support of our community. For that reason, we have decided to create the aforementioned Planet Health Advisory Board (PHAB) to guide our decision-making process as we implement the PH curriculum in our school system.

The KRDHD has already received letters of support from the community partners listed in Table 5. These organizations will provide their support and an appropriate and interested person to serve on the PHAB. Some partners have direct experience working with the target population (such as the school systems), while others have experience implementing programming (Cooperative Extension). Other partners, such as elected officials and the faith-based community will serve as champions for the program within their areas. Each partner fills a unique niche that allows the PHAB to function as a strong and diverse decision-making body.

Table 5. Letters of Support

Organization or Person	Role
1. Lee County School System	Program site
2. Letcher County School System	Program site
3. Wolfe County School System	Program site
4. Lee County Cooperative Extension	Program dissemination, reviewing curriculum
5. Letcher County Cooperative Extension	Program dissemination, reviewing curriculum
6. Wolfe County Cooperative Extension	Program dissemination, reviewing curriculum
7. First Baptist Church of Whitesburg	Program dissemination, community support
8. ECU and UK Dietetics Programs	Provide student candidates for GHW
9. Mayor Henry of Campton	Program dissemination, community support, policy change
10. Judge Executive James Madison	Program dissemination, community support, policy change
11. Appalachian Regional Hospital	Referrals as needed
12. God's Pantry Food Bank	Reviewing curriculum, referrals as needed

In addition to collaborating with the school districts, we will make concentrated efforts to educate and engage the teachers and staff members of these schools. The HED will be responsible for recruiting the individual classrooms that receive the PH curriculum, and so building a relationship with individual teachers will be key. The HED will visit schools, attend professional development days and select classrooms that would be willing participants for the program.

The cafeteria at each school will also be a partner for this program. PH emphasizes healthy eating, so it is our hope that the offerings for school breakfasts and lunches will align with the curriculum being taught. By working with the cafeteria, cohesive signage and messaging can be provided to reinforce the PH principles.

This cohesive branding would also carry over to physical education classes and access to fitness facilities. PH strives to increase number of participants who are physical active every day. Small strategies such as working with the school to provide before and after school access to the gymnasium or track facilities may reinforce the fitness teachings of PH. As mentioned earlier, having school personnel on our PHAB will allow for these collaborations to become successful.

A media consultant will assist with the dissemination of the project and the results that we achieve. This will allow for parents and other residents of our target counties to be well-informed about the project, the intended health benefits and the outcomes that we find. This may also encourage parents to participate in other health department offerings related to health and fitness, and may increase parental involvement in this particular program. PH's teachings, such as the increased consumption of fruits and

vegetables, are positive messages that the entire community could benefit from.

Dissemination of this program could lead to spin-off programs and increased awareness of health and fitness information.

These partnerships have been cultivated during KRHD's tenure of delivering successful health promotion programs. As mentioned in other sections, we have years of experience administering HANDS, First Steps, and other evidence-based programs. Specifically, KRHD has many outreach efforts that target children and adolescents, like our School Health Program, which provides school nurse visits and health education lessons to classrooms. These programs are provided throughout our service area, so we are familiar with scaling programs to accommodate a large population.

F. Project Management

A project such as this requires adept management of all aspects of overall program. As mentioned previously, the HED of the KRHD will be the key staff member assigned to manage, implement and evaluate this program. The HED will also employ the assistance of individuals throughout the community to make this project a success.

The HED will select GHW from local universities to assist with implementation of this program. The GHW will receive formal training on PH and how to ensure program fidelity when implementing the program into a classroom setting. GHW will be seen as a valuable classroom resources, assisting teachers in successful implementation of PH lessons.

Students chosen for the GHW positions will show strong academic skill, receive recommendations from professors or employers and complete a brief presentation on a

health-related topic to the interview panel. This process should ensure that students with strong oral presentation skills as well as solid academic skills are chosen. GHW will receive a stipend and tuition reimbursement for their time, which should make these positions highly coveted as many internships or practicums do not provide any financial incentive.

GHW will be working directly with students in the classroom. They will be responsible for maintaining a schedule with the school or schools they are assigned to and logging all lessons completed. They will also communicate weekly with their supervisor, the HED and will report problems immediately. This position will require punctuality on the part of the students, as well as a good working relationship with the classroom teachers whose classrooms they will be presenting in. The interview process, as well as selection of more seasoned students (graduate level) will ensure that reliable candidates are chosen.

We do anticipate that our school districts will experience snow days, because this is a common occurrence in rural parts of Kentucky. We will make every effort to make up any missed lesson plans or days based on the school's make-up schedule and availability of GHW.

The HED will monitor the program from beginning to end, with site visits made regularly and contact with GHW at least weekly to monitor their progress and to address any issues that might arise while implementing the program. In addition to contact with the GHW, the HED will be the contact person for classroom teachers or schools if they have any issues with the content provided or the GHW assigned to their class. Their contact

information will be widely disseminated to all school system personnel involved with this process.

The HED will review pre- and post-test data from students' self-assessment forms as well as feedback from school system personnel on the success of the program. This will provide quantitative data as well as qualitative feedback that can be used to gauge the program's impact. Findings will be reported regularly to the PHAB.

The HED will also work with UK to contract with a biostatistician to analyze the data on a deeper level. Although the HED has been trained in basic statistical analysis and has many years of experience with health promotion projects, we would like to have the best possible information regarding this program so that if successful, it can be replicated throughout the health department system in Kentucky. For that reason, we will contract the statistical analysis to the UK's Applied Statistics Laboratory (ASL).

We also have a UK College of Public Health Associate Professor as a reviewer and consultant for the program to provide technical assistance and support. This professor has over 20 years of experience in public health, specifically with issues related to childhood obesity.

A media consultant will be hired to assist with dissemination of information. This will include creating and implementing a media strategy to disseminate information and ultimately results from PH.

The staff assigned to this program will be professional and well-trained. School faculty and staff have years of teaching experience and have the well-being of their students in mind. Students in health-related fields are excellent candidates assist with PH because

of their classroom knowledge and their enthusiasm for the subject. Health department staff has countless years of experience working on health promotion projects similar to PH, so they will act as mentors for the GHW as needed. UK faculty and the media consultant have also been chosen based on their experience on projects similar to PH. This team dynamic will allow for a successful program.

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Appendix 1. Budget Justification

Personnel Salaries and Wages

- Principal Investigator: HED
 - 1 worker at 100% efforts: 40 hours per week x 3 years
 - $\$49,500 \times 3 \text{ years with } 3\% \text{ increase annually} = \$153,000$
 - Shannon Smith, HED, has a Master of Health Administration and a Bachelor of Nursing and ten years of experience at the KRDHD. She will be an integral part of the success of Planet Health and will provide day-to-day management of the program.

- Graduate Health Workers
 - 8 workers at 8+ hours per week x 3 years
 - Stipend and tuition
 - $\$9,430 \times 8 \text{ workers} \times 3 \text{ years} = \$226,320 \text{ stipends}$
 - Graduate Health Workers will be selected from graduate-level students in health promotion, dietetics, nutrition, public health or related majors through a rigorous interview process. These students will receive a stipend for their time but will not be provided fringe benefits or mileage. Efforts will be made to provide these students with University-funded housing as an additional, non-monetary benefit for their assistance with this project.
 - We will also provide yearly tuition for graduate students as an other benefit of participation in PH and in lieu of mileage or fringe benefits. For budgeting purposes, KRDHD used the UK tuition rate because it was

slightly higher than the ECU rate to ensure we could fully cover tuition of all students chosen. Because tuition increases are likely, rate provided by this program will increase by 3% every year.

- \$12,000 UK tuition yearly with university-projected increase over 3 years increase x 8 students=\$296,728
- Dr. Harriett Bates, Professor of Biostatistics, UK College of Public Health
 - 1 worker at 10% of time x 3 years=\$39,254
 - Dr. Harriett Bates is an Associate Professor of Biostatistics at the UK's College of Public Health. She will analyze the data produced by the Planet Health Program and provide meaningful statistical analysis for the program.
- Dr. Matthew Simms, Professor of Health Behavior, UK College of Public Health
 - 1 worker at 10% of time x 3 years
 - \$9,800 x 3 years with 3% increase annually=\$30,291
 - Dr. Matthew Simms is an Associate Professor of Health Behavior at the UK's College of Public Health. He will act as a reviewer and advisor for the Planet Health Program. This will include initial review of all materials that are adapted for Planet Health's implementation in a rural setting, determining schools that will be awarded grant money and being available for other assistance as needed.
- Rachel Rose, Media Consultant
 - 1 worker at 10% time x 3 years hourly only
 - \$40.00hr x 4 hrs./week x 52 weeks x 3 years=\$24,960

- Ms. Rose has been a media consultant in Kentucky for 25 years. She has expertise in social media, health promotion programs and research dissemination, which is why she was selected for this program. She will be able to send home parent newsletters to inform all parents of the Planet Health Program, create social media pages to give updates on what students are learning, and ultimately disseminate the program results to a variety of media outlets.
- Planet Health Advisory Board Members
 - 10 members x 3 county boards x 3 years at \$250 per year per member=*\$22,500*
 - Each PHAB member will receive a small honorarium for the large amount of time spent on the project. In addition to monthly meetings during the 3-year period of the Planet Health project, PHAB members will assist in making community and school connections. For their dedication to the project, they will receive a \$250 every year. We estimate each PHAB would have approximately 10 members in each of the 3 counties for all 3 years.
- **Total Salaries/Wages=\$793,052**

Fringe Benefits

- Benefit rates are based on the state of Kentucky's fringe benefit and health insurance rates. The fringe rate for faculty is 21.25% and for staff it is 21.55%. Health insurance is provided at a cost of \$10,380 per year for a full-time worker.

All benefits were calculated assuming a 3% increase in rates each year. Our fringe costs will be:

- Health insurance, HED=\$32,083
- Other fringe benefits, HED=\$32,971
- Health insurance, Biostatistician=\$551
- Other fringe benefits, Biostatistician=\$1,432
- Health insurance, Advisor=\$3,208
- Other fringe benefits, Advisor=\$6,437

Total Fringe=\$86,622

Total Personnel Costs=\$879,675

Supplies

- Program manuals x 85 @ \$66 each=\$5,610
 - 10 manuals for each school in district (8 schools total) plus 5 manuals for health department staff/GHWs. These manuals provide the Planet Health curriculum necessary for this program and can be reused for the entire three-year process.
- Printed pre- and post-tests x 2,479 students x 3 years x 2 pages each=14,874 pages x \$0.06 each=\$892
- Handouts for students x 2,479 students x 30 pages x 3 years each=223,110 pages x \$0.06 each =\$13,387
- Parent printouts, newsletters and permission slips x 2,479 students x 30 pages x 3 years=223,110 pages x \$0.06 each=\$13,387

- The Health Department will use a Staples' print service since our copy machine cannot accommodate such a large volume of copies. This will be done in Lexington, KY.

Equipment

- FitBit Flex Bands for 2,479 participants x 1 years @ \$99.95=\$247,776
 - These bands will collect important data including number of steps taken by participants daily.

Total supplies and equipment=\$281,052

Travel

- In-state travel for HED from the main office in Hazard, KY to schools in Lee, Letcher and Wolfe Counties. Three trips per county each year for three years.
 - Lee County=120 miles roundtrip
 - Letcher County=100 miles roundtrip
 - Wolfe County=140 miles roundtrip
- Total mileage=360 x 3 trips per year x 3 years=3,240 miles
- 3,240 miles at federal mileage rate of \$0.54=\$1,750
- In-state travel for Advisor from office in Lexington, KY to the health department 6 times during the project.
 - Lexington to Hazard=272 miles roundtrip
- Total mileage=272 x 6 trips total=1,632 miles
- 1,632 miles at federal mileage rate of \$0.54=\$881
- Total in-state travel=\$2,631

- Out-of-state travel for HED to Project Director's Meeting (years 1-3) and Regional Training (years 2-3) in Washington D.C. (5 trips total)
 - Mileage to Lexington Airport=256 miles roundtrip x 5 trips=1,280 miles x mileage rate of 0.54=\$691
 - Flight to D.C.=\$550 x 5 trips=\$2,750
 - Per diem (3 days x 5 trips) =\$89 per day x 3 days x 5 trips=\$1,335
 - Hotel Room (3 nights x \$225 per night x 5 trips) =\$3375
- Total out of state travel=\$8,151
- School Nutrition Association (SNA) Conference in San Antonio, Texas x 5 days for 8 teachers (1 from each school) and HED
 - Mileage to Lexington Airport=256 miles roundtrip x 2 drivers=512 miles x mileage rate \$0.54=\$276
 - Flight to San Antonio for 9 people @ \$600 per flight=\$5,400
 - Conference registration for 9 people @\$535=\$4,815
 - Per diem (5 days x \$89 per day x 9 people) =\$4,005
 - Hotel Room (9 rooms x 4 nights @\$217 per night) =\$7,812
- Total SNA Conference=\$22,308
- Orientation costs for GHW x 3 years=\$21,750
 - This will include meals provided to each of the 8 GHW, HED and Advisor for a total of 16 meals (\$7 for breakfast and \$15 for lunch/dinner), a 5 night stay at Natural Bridge State Park (\$95 per night per person) and daily rental of a conference room (\$100 per day). This training will be

repeatedly yearly in case there is any attrition in GHW and to further ensure program fidelity. Participants in the training will be expected to arrive at the Kentucky state park on Sunday evening and stay through Friday evening. This will allow for maximum team building and training time instead of having the meeting at the health department offices and will allow all participants to focus on their training.

Total travel=\$56,590

Other

- Incentives for participants to include water bottles for all Year 1 participants. 2,400 water bottles (must order in even numbers; 21 ounce Montego sports bottle) with logo from Vista Print=\$4,190
- Mini Grants for 8 schools @ \$20,000 each=\$160,000
- 2 water bottle filling stations for 8 schools @\$1,300 each=\$20,800
- Teacher professional development day x 8 schools x 30 teachers x 3 years=\$100,800
 - This will include breakfast/lunch for each teacher at \$10 per meal and a \$100 school supply gift card for every teacher as an incentive to implement Planet Health into their classroom. This training will last 2 days and will be held on site at least 1 school in the district, if not at all 8 schools.
- PHAB meeting costs x \$100 per meeting x 12 months x 3 counties x 3 years=\$10,800

- PHAB meetings will occur once per month. This money will cover basic hospitality costs for the PHAB meetings, including any room rental fees and food and beverage for all members.

Total Other=\$296,590

Total Budget=\$1,538,867

Appendix 2. Work Plan

May 1, 2016-April 30, 2019

Underlying Goal: Reduce childhood obesity in target areas		
Goal 1: Complete planning phase for Planet Health program.		
Objective 1: By July 30 th of 2016, all 8 schools in the target area will be recruited to participate in the Planet Health curriculum and GHW for each school will be hired and trained with the 3-day training curriculum mentioned in the Program Approach section.		
Rationale for Objective 1: Proper planning of the program will be the key to success throughout the grant period. These steps will form the foundation for the Planet Health program. Planet Health has shown to be effective in reducing childhood obesity, which will contribute to meeting our underlying goal.		
Measures of Accomplishment for Objective 1: a. 8 schools recruited with signed MOUs by deadline b. 8 GHW recruited and trained by deadline		
Activities in support of Objective 1: a. Visit each school's principal b. Attend school's professional development/teacher training days c. Ensure each school signs MOU d. Send GHW job opportunity to local universities with public health-related programs e. Interview candidates for GHW f. Select 8 candidates to be GHW g. Train all GHW candidates	Person responsible for accomplishing activities: Recruiting schools, hiring/training GHW: HED	Activity Timeline: 1a. Research on schools and contact with superintendents occurred during grant writing process 2a. May 1, 2016-July 1, 2016 recruit schools with visits and meeting with key personnel b. Schools to sign MOU by July 30, 2016 c. Post GHW opportunity through local universities by May 1, 2016

		<p>d. Interview and hire GHW by June 30, 2016</p> <p>e. Train GHW by July 30, 2016</p>
<p>Goal 2: Increase positive behavior associated with physical activity (decrease screen time, increase physical activity) by administering the Planet Health program.</p>		
<p>Objective 2: By April 30, 2019 students receiving the Planet Health curriculum at their schools will show a 10% increase in their physical activity, as reported by student pre- and post-testing and FitBit data along with a 20% decrease in their screen time, as reported by student pre- and post-testing.</p>		
<p>Rationale for Objective 2: Physical activity is a cornerstone of the Planet Health Program. By showing measurable increases in physical activity and decreases in screen time, we validate the program. More physical activity and decreased screen time also contribute to the underlying goal of decreasing obesity.</p>		
<p>Measures of Accomplishment for Objective 2:</p> <p>a. Physical activity increases by end of grant period (10% or greater)</p> <p>b. Screen time decreases by end of grant period (20% or greater)</p>		
<p>Activities in support of Objective 2:</p> <p>a. Provide FitBit activity bands</p> <p>b. Pre- and post-test administration</p> <p>c. Planet Health curriculum implemented in classroom</p> <p>d. Provide grant opportunities for schools to improve their infrastructure for physical activity</p> <p>e. Analyze data</p>	<p>Person responsible for accomplishing activities:</p> <p>a. GHW to lead Planet Health lessons, pre- and post-testing</p> <p>b. HED to monitor program</p> <p>c. UK Biostatistics professor to analyze data</p> <p>d. HED, KRHD staff and UK public health professor to determine grant awardees</p>	<p>Activity Timeline:</p> <p>a. Pre-test at beginning of school year 1 along with FitBit distribution</p> <p>b. Implement Planet Health Program</p> <p>c. Post-test at ending of school year 3</p> <p>d. Provide grant funding at beginning of year 3</p> <p>e. Analyze data in last few months of grant period</p>

<p>Goal 3: Improve dietary habits (increase fruit/veg and whole grain consumption while decreasing sugar-sweetened beverage and trans fat consumption).</p>		
<p>Objective 3: By April 30, 2019 students receiving the Planet Health curriculum at their schools will show a 10% increase in fruit/vegetable/whole grain consumption and a 20% decrease in sugar-sweetened beverage and trans fat consumption as reported by student pre- and post-testing.</p>		
<p>Rationale for Objective 3: Improving dietary habits of participants will show effectiveness of program and will contribute to the underlying goal of decreasing obesity.</p>		
<p>Measures of Accomplishment for Objective 3:</p> <ul style="list-style-type: none"> a. Fruit/vegetable consumption increases by end of grant period (10%) b. Whole grain consumption increases by end of grant period (10%) c. Sugar-sweetened beverage consumption decreases by end of grant period (20%) d. Trans-fat consumption decreases by end of grant period (20%) 		
<p>Activities in support of Objective 3:</p> <ul style="list-style-type: none"> a. Planet Health curriculum implemented in classroom b. Pre- and post-test administration c. Provide grants to schools to improve their infrastructure for healthful food choices d. Provide water bottle filling stations to schools e. Analyze data 	<p>Person responsible for accomplishing activities:</p> <ul style="list-style-type: none"> a. GHW to lead Planet Health lessons, pre- and post-testing b. HED to monitor program and spearhead water bottle filling station installation at schools c. UK Biostatistics professor to analyze data d. HED, KRHD staff and UK public health professor to determine grant awardees 	<p>Activity Timeline:</p> <ul style="list-style-type: none"> a. Work with schools to install water bottle filling stations in year 1 of grant period b. Pre-test at beginning of school year 1 c. Implement Planet Health program d. Post-test at end of school year 3 e. Provide grants at beginning of year 3 f. Analyze data in last few months of grant period

Appendix 3. Logic Model

Inputs	Activities	Outputs	Short-Term Outcomes	Intermediate-Term Outcomes
<ul style="list-style-type: none"> • HED (HD staff) • GHW • Schools • Classrooms • Teachers • Administrators • Program materials • Data collection forms (pretest/posttest of Fit test or Student Self Assessment) • Targeted counties • Money for staff and materials • Travel money/transportation for training dates and monitoring • Biostatistician • UK Public Health Professor • Media consultant • PHAB 	<ul style="list-style-type: none"> • Research schools within targeted counties • Connect with school administrators • Conduct meetings with potential sites in targeted counties • Select sites for program implementation • Training sessions with selected sites and GHW • Pretest/Posttest • Conduct lesson plans at targeted sites • Analyze pretest/posttest data • Ongoing monitoring and communication 	<ul style="list-style-type: none"> • Number of children participating • Number of counties participating • Number of schools participating • Number of classrooms participating • Reporting of findings (pretest vs. posttest) • Number of lessons completed per site • Media coverage of Planet Health Program 	<p>Based on Planet Health's 6 messages, our outputs will be:</p> <ul style="list-style-type: none"> • Increase in number of participants reporting they are physically active every day • Decrease in hours of screen time reported by participants • Increase in number of fruits and vegetables reported by participants • Increase in number of servings of whole grains reported by 	<ul style="list-style-type: none"> • Regular physical activity sustained by participants • Long-term increases in fruit/vegetable intake • Long-term increases in whole grain intake • Long-term decreases in sugar-sweetened beverage consumption <p>Long-Term Outcomes</p> <ul style="list-style-type: none"> • Decrease childhood obesity in the target counties by 2%

	<ul style="list-style-type: none"> • Interviews at the end with site coordinators • Media releases of results 		<p>participants and decrease in amount of sugar sweetened beverages</p> <ul style="list-style-type: none"> • Decrease in reported intake of foods with trans fat/saturated fat by participants 	
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