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## ***Incorporation of Sustainability Issues into Public Health Classes***

### **1. Description of Existing Classes**

I teach the following two classes that will both be modified on the basis of what was learned during the Chesapeake Project workshop on sustainability:

HLTH 200, Introduction to Research Methods in Community Health. HLTH 200 is an undergraduate class and enrolls about 75 students majoring in behavioral and community health. I teach it in the Spring and the Fall semesters. As is shown in the syllabus, the course provides students with a broad overview of research methods and utilizes several examples of peer-reviewed articles to describe the specific components of the research process, from formulating a hypothesis, designing studies to answer a particular research question, using appropriate measurement tools and sampling methods, to analyzing and presenting results. There is a heavy emphasis on translating findings for the public good, and using scientific evidence to guide public health policy decisions.

The second course is HLTH 776, Community Health Program Evaluation, which is a smaller class for graduate students that builds skills related to program evaluation. Students learn how to formulate evaluation goals, and conduct evaluations using appropriate measurement tools, sampling methods and design elements (e.g., number of groups, number of assessments, etc.) to answer specific questions about the feasibility of program implementation, the success of implementation and the effectiveness of interventions or policies.

### **2. Incorporation of Sustainability-related Examples**

The Chesapeake Project workshop was very helpful in that it exposed me to a wide variety of issues that I believe students would find very relevant to their own lives and would serve to illustrate elements of research design and program evaluation. For example, for the section on measurement tools for the HLTH 200 class, I often use the topic of depression. There are many standardized scales to measure depression and we review how the items on those scales were derived and how the scales are now used in research as well as clinical practice. I believe using depression as an example is OK, but I think the class will be enhanced by explaining the measurement of ideas that are related to sustainability. Specifically, I will use the Heim, 2009 article, which measured vegetable preferences and fruit and vegetable eating behavior among children who were exposed to a garden-based nutrition education program. The measures for these variables are clearly described in the article and will be covered in class. While the measurement aspect of the study is important, what is more critical is to introduce the undergraduate students to the idea of interactive garden-based nutrition programming.

The article by Heim, et al. will also be used in the HLTH 776 class as an example of an intervention design that collected data on process outcomes and short-term behavioral outcomes. In addition, the results of that program evaluation can be compared to the results of a similar program by Gibbs (2013). The students will be able to practice their skills interpreting results of program evaluations by

looking at two studies that focus on improving the nutritional habits of young people with garden-based nutrition programs.

In HLTH 200, examples of real-world studies are provided throughout the course to illustrate the variety of research designs that can be utilized to answer specific questions. In public health, cross-sectional designs are one such design, where data collection takes place at one point in time. The goals of cross-sectional research are usually two-fold: 1) to estimate the prevalence of a behavior; and 2) to explore possible correlates of the behavior. To incorporate a sustainability topic in this section of the class, I located a very interesting cross-sectional study by Semenza et al (2011). In this study, 81% of survey respondents acknowledged that climate change was occurring, and were aware of the associated ecologic and human health risks. Importantly, there was a significant association between reducing personal energy consumption if they believed climate change could affect their way of life or their health. This study is a great example of a theoretically-grounded research question (uses the Health Belief Model) and analyses that are informative for developing future interventions and policies to encourage responsible behavior.

### **3. Offering students a sustainability-related topic to select for their Research Concept Proposal in HLTH 200**

One requirement in HLTH 200 is a writing assignment – where students have to develop their own research proposal and incorporate all the elements of what they learned in the class. Every semester, I provide the students with three possible topics from which to choose. Narrowing the focus this way helps “level the playing field” preventing students who might have already written about a topic from re-using their work. The topics I choose are ones that lack a substantial research base – so that they can spend their time and creative energy on developing their own study rather than reading about someone else’s research. I have decided to choose bicycle-sharing programs as a sustainability-related topic to include among the three topics chosen (the others will be “cyber-bullying” and “bariatric surgery”). Students are limited by their own creativity in terms of what design they select. The assignment is very structured and feedback is provided throughout the semester.

If a student chooses to write their proposal on the bicycle sharing program topic, the assignment could take shape in a number of ways. They could do a descriptive study of attitudes about bicycle sharing among residents of a community that is considering implementing a program; they could do a pre-post study of the impact of a bicycle sharing program on some outcome like individual behavior (e.g., riding the bikes) or an individual health outcome (e.g., weight loss) or a community-level outcome (e.g., traffic). Simply explaining this example to the entire class will be useful in infusing ideas about how such a program can have impacts at multiple levels, even if students choose one of the other topics.