Project Year
2011-2012

Project Title
Using M-Health and GIS Technology in the Field to Improve Students' Learning Experiences

Project Team
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Audience
Students enrolled in the *Applied Geographic Information Systems in Public Health* course.

Pedagogical Issue
Traditionally, classes combining Geographic Information Systems (GIS) and Public Health are taught "workshop style" with in-classroom emphasis on navigating the interface and producing maps. The maps typically are based on predetermined input—data that faculty have worked with in their own research. For students unfamiliar with the broad utility of GIS, workshop-style pedagogy is counterproductive. Students are often left uninspired, believing they've spent time trying to learn a highly-specialized, but practically useless skill.

Solution
One goal of this summer's *Applied Geographic Information Systems in Public Health* course is for students to leave the course with skills in map-making and spatial statistical analysis. We will get students engaged and excited about the utility of spatial data by dividing the class into teams and having each team use a different m-health data collection tool (e.g., cellular phones, smart phones, GPS units with data storage, etc.) for point-of-sale observations in several pre-scouted public retail outlets along the JHMI shuttle route. In completing the observations, students will learn valuable lessons about observational epidemiology.

Technologies Used
Geographic Info System (GIS), Blackboard, Adobe PDF, ArcGIS, PowerPoint

Project Abstract
In line with traditional GIS courses, one goal of this summer's *Applied Geographic Information Systems in Public Health* course is for students to leave the course with skills in map-making and spatial statistical analysis. This technology fellowship will expand capacity of the course to get students engaged and excited about the utility of spatial data. It will allow for students to learn, hands-on, how to model the effects that health interventions would have on spatial health patterns. The Tech Fellow, Jacqueline Ferguson, will assist in creating an m-health project allowing students generate their own spatial health data set. M-health simply describes health-related practice that is supported by mobile devices. We will divide the class into teams of three or four students. Each team will use a different m-health data collection tool (e.g. cellular phones, smart phones, GPS units with data storage, etc.) for point-of-sale observations in several pre-scouted public retail outlets along the JHMI shuttle route. In completing the observations, they will learn valuable lessons about observational epidemiology. Then, the class will use

the student gathered observational data to practice spatial analysis and produce maps. This technology fellowship grant will serve JHU by 1) documenting the results of our experiences using the JHMI shuttle for Community Based Learning (CBL), 2) documenting the results of our testing several mobile devices for the purposes of tracking students and completing field observations, and 3) engaging undergraduates in a cutting-edge field.