Georgia State University Summer 2012 STEM Request: Enhancing STEM Research Experiences through Community Geography & Geographic Information Systems

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Research Participants: 13 undergraduates from across the country including 5 GSU students

Executive Summary: In many STEM research experiences, including those in Geographic Information Systems (GIS), students are encouraged to learn new technologies that will allow them to engage in applied, scientific problem solving for use in their own research. GIS, a scientific technology taught at GSU, can help students visualize, analyze, manipulate and capture data about real-world scientific phenomena. Often, GIS skills are learned in the classroom setting, but students do not always see an immediate connection to real-world community-based research. To bridge this gap, this summer the Department of Geosciences is hosting the first nationwide Community Geography and GIS undergraduate research training program through a National Science Foundation Research Experiences for Undergraduates (REU) grant. Through this STEM grant and the REU, we plan to measure how and in what ways student research experiences are enhanced through field-based STEM projects where students work directly with community organizations. Our analytical framework will include quantitative assessment (multiple choice questions, demographic data, and pre and post surveys) and qualitative assessment (open-ended questions, interviews with REU students). We will disseminate multiple peer-reviewed publications (co-authored with the REU students) and give multiple presentations at the Association of American Geographers meeting, a GSU Geosciences brown bag, and university seminars.