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LIGO: Impacting science education through gravity-wave research in the local community and beyond[1]

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We describe our integration of the science teacher pre-service and in-service education programs at Southern University (SUBR) with the Laser Interferometer Gravitational-wave Observatory (LIGO) Science Education Center (SEC). Inquiry-based interactive exhibits are employed wherein we emphasize classical physics concepts of oscillations, waves, wave propagation, interference, resonance, lasers, light and Newtonian gravity. An aggressive museum docent training program is providing a means for undergraduates to learn how to effectively communicate science concepts within informal learning environments. This local educational partnership will ultimately create a science education continuum of engagement, working at multiple levels and multiple audiences to strengthen science literacy within the targeted STEM African-American community. Following a brief overview of our program of LIGO-related optical materials research, we give a detailed presentation of our K-12 science teacher preparation program with results.

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