Project Title: Experiencing STEM FirstHand: The Impact of a Novel Approach to Bolstering Scientific Identity, Interest, and Knowledge in Low-Income Middle School Students of Color

Type of Grant Requested & Priorities: Early-Phase Grant. Absolute Priorities 1 (Demonstrates Rationale) and 3 (Field-Initiated Innovations in STEM); Competitive Preference Priority 1 (Computer Science) and 3 (Promoting Equity and Adequacy).

Total number of students/grade level(s) served: 336 students from grades 6-8

Definition of high-need students: We define high-need students by the societal, economical, and educational challenges pervasive in Philadelphia. As of 2018, 39% of Philadelphia youth were living in poverty. The School District of Philadelphia provides universal free lunch. Only 29% of SDP students scored “Proficient” in Science, 14% in Math, on standardized assessments.

Description and Activities: We aim to advance evidence-based STEM educational practices for low-income students of color through immersive, inquiry-based experiences in an out-of-school laboratory setting. SDP students will participate in programming and the project team will evaluate students’ STEM identity, interest, and knowledge.

Objectives and Outcomes: Objective 1 is to engage underserved, middle school students in hands-on, discovery-based, mentored STEM programming in a professional laboratory setting; Objective 2 is to conduct a formative evaluation to collect baseline data and refine program delivery; and Objective 3 is to conduct a summative evaluation to demonstrate the effectiveness of the program on students STEM identities, competencies and skills.

Special Features: By connecting high-need students to the vast STEM social network within their own community, this project promotes positive STEM learning and career outcomes.