Summer 2020 Smart City Research Experience for Undergraduates and Teachers

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Earlier this year, the Smart City Research Experience for Undergraduates and Teachers program, SCR^2, was met with a significant challenge when it was clear that most universities in the country would switch to remote instruction for the remainder of the Spring term. This meant participants of summer programs would most likely be restricted from on campus activities. While other summer programs made the decision to cancel their programs for the year, the SCR^2 organizers decided to leverage this experience as a learning opportunity and proceed with the program, albeit, with some critical modifications.

Applicants who had been accepted into the program were first contacted to inform them of how the program would be conducted this year and to ensure they had the necessary resources to proceed, namely a reliable internet connection, computer and webcam. The faculty mentors across the three participating sites, Morgan State University, Alabama A&M University and Florida A&M University, met frequently to coordinate how to get equipment/supplies to participants as quickly as possible, since each university has different policies. Some participants simply needed software, while others were sent components like Raspberry Pis, solar cells, or basic circuit supplies.

Being that all activities were conducted remotely, it was critical that participants received daily guidance and opportunities to interact with other participants. Hence, participants were placed in project groups and graduate student mentors were assigned to each group. Mentors set daily meeting schedules where the group could receive guidance, show progress and generally interact with each other over video conference. Participants also got an opportunity to shadow another project for which they had a strong interest. This allowed participants with the time and inclination to push themselves over the summer and expand their knowledge, experiences and connections. At the end of each week, program wide research updates were conducted. In addition, group lunch sessions were organized at the end of the week where all participants, faculty and graduate mentors could interact in an informal online setting. These sessions helped create a sense of familiarity among everyone in the program despite the remote nature of the program.

The summer experience culminated in a virtual research symposium where participants developed elevator pitch videos that were shared with the public over YouTube prior to the start of the program. This process really helped crystalize the participants summer experience and helped them focus on the research experiences that were really important for their symposium research presentations, which were also placed on YouTube. While assessments are still being collected and analyzed from the program, the general feedback has been very positive. The students noted that they received a very rich research experience despite the circumstances. Teachers noted that they acquired lots of knowledge to expand the lesson plans and associated activities they have for their students. In retrospect, the reason this program was able to succeed despite the last-minute requirement to change formats is because of the tremendous group effort that occurred among the students, teachers, graduate mentors, faculty advisors, and principle investigators across all program sites and affiliated consortium members. If nothing else, this experience is evidence that a quality multi-institution, combined RET and REU remote summer research experience is indeed efficacious.