**Wesley College WiCCED-Sponsored Summer Internships**

Dates of internship: June 1, 2020 to August 7, 2020

Location: Wesley College, Dover, DE 19901

Number of positions available: 2

Faculty Mentor: Dr. Malcolm J. D’Souza

**Project Title:** Evaluation of the COVID-19 Impacts on Wesley’s STEM Undergraduate Population

**Research Description:**

The COVID-19 pandemic compelled Wesley College faculty to transition into the digital space and adopt any available e-learning platforms for their STEM course content. Additionally, due to the imposed quarantine, in-person laboratory work was stopped and in its place, students had to work on the analysis of (previously) available laboratory results, write scientific articles, analyze case studies, and watch videos to pull experimental technique information and data. This project will survey all Wesley College STEM majors to look at the COVID-19 impact on their college education. It will also survey the Wesley College STEM course instructors and collected information about their teaching experience.

**Research Objectives:**

1. How did the closing of the school exacerbate learning inequality w.r.t remote online educational impact?
2. How did the closing of the school exacerbate learning inequality w.r.t household job-loss (reduction of household income)?
3. Did students miss the residential community environment?
4. How did this COVID-19 event influence students' STEM career interests and future occupational choices?
5. Are there any gender differences in achievement with the virtual platform vs in-person courses?
6. If there was a laboratory course component, were the replaced lab simulations effective?
7. Were there any peculiar things happen in the videoconferencing course format?
8. Did students put in more/less effort in the virtual format when compared to the first half of the in-person format of the semester?
9. How did Wesley College STEM faculty adapt to the digital space?

**Student Learning Objectives: Professional and Research Skills**

This internship focuses on the development of the following professional and scientific skills.

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| Broad Professional Skills | Specific Skills |
| Planning and time management | Ability to set and complete specific goals of varying scope |
| Express ideas in writing | Detail collection methods, create a poster of your research, communicate via email/MS-Teams professionally and in a timely and consistent fashion |
| Express ideas verbally | Discuss research activity in e-meetings, present poster at symposium |
| Work independently | Independent work ethic – work independently or with peers to problem solve  |
| Develop professional network | Work with lab team to develop professional network and utilize peer-groups to problem solve. |
| Maintain professional attitude and work principles (i.e. integrity, responsibility, diligence, following ethical standards) | Work independently, learn procedures, ask questions if unsure, and respect everyone you work with. |

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| Broad Scientific Research Skills | Specific Skills |
| Understand scientific terms  | MS-Excel, STATS, Scientific Writing |
| Locate scientific articles and resources | Conduct searches for literature on STEM-education |
| Understand research questions | Develop questions based on preliminary data. |
| Read and understand research articles | Research online teaching/learning methods, in-person/virtual social experiences, and remote workforce preparation |
| Apply research tools and techniques in research experiments  | Identification, examination, and interpretation of patterns and themes in textual data and determines how these patterns and themes help answer the research questions at hand. |
| Understand, apply, and explain scientific concepts and theories | In virtual meetings, and during research symposium |

**Prerequisites:**

Basic STATS course, Scientific Writing.

**Work Environment and Expectations:**

Scholars will complete their research virtually from home. Scholars are expected to meet with Dr. D’Souza weekly to review progress and next steps.

**Stipend:** $5,000 Direct deposit is required.

**Funding Source:** National Science Foundation EPSCoR RII-IV Grant No. 1757353 and the State of Delaware.

**How to apply:** https://ugresearch.udel.edu/PUB\_Program.aspx